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Taipei City Government

Lung-Bin Hau, Ph.D.
Mayor

Office of the Mayor
Taipei, Taiwan, Republic of China

臺北市市長 郝龍斌

Dear Honored Guests:

Welcome to Taipei! On behalf of the City Government and the citizens of Taipei, it is with great pleasure that I extend our warmest welcome to the delegates and participants of the International Union of Materials Research Societies-International Conference in Asia 2011(IUMRS-ICA2011).

We would like to express our utmost gratitude to the Materials Research Society Taiwan for their dedicated efforts in ensuring the success of this global gathering. The conference will serve as a platform for the exchange of experience and expertise in the field of Materials Science. I am confident that this event will be most productive and stimulating for all.

Beyond your time spent in the conference, please also take advantage of your stay in Taipei to explore this beautiful and vibrant city. Taipei has become a dynamo of progressiveness and a regional symbol of prosperity. The soaring Taipei 101 Tower is an iconic structure that has become a popular destination frequented by residents and tourists alike. This inspiring masterpiece of modern architecture is well complemented by the prestigious National Palace Museum, plush 24-hour bookstores, and a wide array of savory delicacies at vendor stalls and restaurants relished by many.

As the host city and sponsor of the IUMRS-ICA2011, we wish you a wonderful and successful conference, and hope that you bring home the most beautiful memories.

Sincerely yours,

Lung-Bin Hau

Welcome Message from the president of MRS-T

Tsong P. Perng, President

Materials Research Society-Taiwan (MRS-T) is honored to host the 2011 International Union of Materials Research Societies (IUMRS)-International Conference in Asia (ICA), i.e., IUMRS-ICA 2011. On behalf of the organizing committee, I would like to welcome all of you, from every corner of the world, to attend this conference.

ICA is one of the most important serial conferences supported by the IUMRS. The first IUMRS-ICA was organized by C-MRS in September, 1993 on a ship in the Yangtze River. MRS-T then hosted the second ICA in December, 1994. Since then, IUMRS-ICA has been organized by the adhering bodies of IUMRS in the Asian area. In 2004, the ICA was again organized by MRS-T, and now this is the third time for MRS-T to host the ICA. This conference provides an opportunity for scientists and engineers from not only Asia but also around the world to exchange their recent achievements and new ideas to advance the R&D of materials science and technology.

IUMRS-ICA 2011 is organized by MRS-T and IUMRS and co-organized by C-MRS, MRS-J, and MRS-K. It covers six fields: (1) Energy and Green Materials; (2) Biological Materials; (3) Materials Modeling, Simulation, and Characterization; (4) Advanced Structural Materials; (5) Electronics, Optoelectronics, and Photonic Materials; and (6) Novel Functional Materials. In total, 32 symposia will be held in session in this conference.

It was right after the successful ICA 2010 held in Qingdao, MRS-T started to work closely with the Asian members, especially C-MRS, MRS-J, and MRS-K, to organize this event. In order to maintain the continuity, we have tried to keep most of the symposia organized by ICA 2010 and in the meantime to add a few more symposia to include new development of materials science and technology. We then invited C-MRS, MRS-J, and MRS-K to recommend co-organizers and/or invited speakers to each symposium, in an attempt to make ICA a platform which truly belongs to the Asian community. By doing so, each symposium will be taken care continuously by a group of members who are willing to make the contribution. In other words, people in the same area will from now on work together to maintain and cultivate their own symposium, and eventually become real partners.

We are proud to inform you that indeed this strategy has worked out quite well. Approximately 1400 papers from 24 countries have been received, including some 600 oral and 800 poster presentations. About 1200 participants are expected to attend this conference. Among the papers received, 176, 144, and 98 are from Japan, China, and Korea, in addition to 842 from the locals.

Finally, I would like to take this opportunity to express my sincere appreciation to Prof. Cho-Jen Tsai, Chairman of Department of Materials Science and Engineering, National Tsing Hua University, and Prof. C. Robert Kao, Chairman of Department of Materials Science and Engineering, National Taiwan University, as well as their colleagues and those from Yuan Ze University for their great effort in helping organize this conference. I am grateful to the members of Program Committee, General Affairs Committee, Technical Committee and MRS-T staff members for their endless hard work. Special thanks also go to the members of International Advisory Committee and the organizers of each symposium for their valuable contribution to the conference. Last but not least, I would also like to thank all our participants. Without your participation, this conference would not be otherwise possible.

I wish you all a fruitful experience from the conference and an enjoyable stay in Taipei.

Organizations

Conference Chair:

President Tsong-Pyng Perng

Co-Chairs:

Prof. Bob Chang

Prof. Lih-Juann Chen

Prof. Si-Chen Lee

Dr. Jonq-Min Liu

International Advisory Board:

B. V. R. Chowdari

President of IUMRS/MRS-S

Osamu Takai

Vice President of IUMRS/ MRS-J

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President of B-MRS

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David Ginley

President of MRS

Howard Katz

Past President of IUMRS

Soon Wohn Lee

President of MRS-K

Naoki Kishimoto

President of MRS-J

Boyun Huang

President of C-MRS

Nikolai Z. Lyakhov

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President of E-MRS

Pedro Hugo Hernández Tejeda

President of MRS-Mexico

J.S. Williams

President of A-MRS

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Dr. Jassy Wang	Prof. Sinn-Wen Chen
Prof. J.C.Huang	Prof. Jien-Wei Yeh
Prof. Jen-Sue Chen	Prof. Chien-Neng Liao
Prof. Kuang-Chien Hsieh	Prof. Chih-Huang Lai

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Ms. You-Li Lin	Ms. Kuan-Han Huang
Mr. Ming-Sung Wu	Mr. Chung-Shien Yue
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Symposium F6

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Footnotes for oral program:

2000 09:00-09:15 Bob Chen

The 4 digits (2000) represents the paper ID. Followed by the presentation time of the paper, starting time and finish time (09:00-09:15). Finally, the name of the presenter is listed (Bob Chen).

Followed by: (KS) Keynote speaker (IS) Invited Speaker (SIS) Short Invited Speaker

General Program

	Sept. 19 (Mon.)	Sept. 20 (Tue.)	Sept. 21 (Wed.)	Sept. 22 (Thu.)
9:00-10:30 (90 min.)	Registration	Plenary Lecture	Plenary Lecture	Symposia
10:30-10:45 (15 min.)	Registration	Break(4F,5F)	Break(4F,6F)	Break(4F)
10:45-12:00 (75 min.)	Registration	Plenary Lecture	Symposia	Symposia
12:00-13:40 (100 min.)	Registration	Lunch time(3F)	Lunch time(3F)	Lunch time(3F)
13:40-15:00 (80 min.)	Registration (13:00 Free Tour / Local Meeting)	Symposia	Symposia	Symposia (13:30 Free tour)
15:00-15:40 (40 min.)	Registration (Free Tour/ Local Meeting)	Break (4F)	Break(4F)	Break(4F) (Free tour)
15:40-17:00 (80 min.)	Registration (Free Tour/ Local Meeting)	Symposia	Symposia	Symposia (Free tour)
17:30-19:00	Welcome Party (5F)		Banquet (Butterfly Restaurant)	

Plenary Session (504R)

	Sept. 20 (Tue)	Sept. 21 (Wed)
9:00-9:30	Addresses by honor guests	Chair: Prof. T. S. Chin (Chair Professor, FCU) Dr. Harriet Kung Associate Director of Science for Basic Energy Sciences “Science for Energy”
9:30-10:00	Chair: Prof. Lih J. Chen (President, NTHU) Dr. C. Y. Lu President of Macronix International Co., Ltd. “IC Technology and Material Research and Manufacturing - from Transistor to Terascale Nanotechnology Integration”	Prof. Soo Wahn Lee President of Materials Research Society-Korea “Synthesis and characterization of molybdates by different routes of wet chemistry to enhance photocatalytic activity”
10:00-10:30	Prof. Harry Atwater Howard Hughes Professor of Applied Physics and Materials Science at the California Institute of Technology “New Photonic Materials and Devices for Solar Energy Conversion”	
10:30-11:00	Break	
11:00-11:30	Chair: Dr. Jonq-Min Liu (Executive Vice President, ITRI) Prof. PAN Fusheng President of Chongqing Academy of Sci. & Tech., “Magnesium: Status and Prospects”	
11:30-12:00	Prof. SAITO Nagahiro Division of Nanomaterials Science Executive director, MRS-J “Biomimetic Materials Processing ~ a cold plasma in cold solution ~”	

Introduction to Plenary Speakers

Dr. C. Y. Lu



Dr. C. Y. Lu received his Ph.D. in department of Physics from Columbia University, N.Y.. He is President of Macronix International Co., Ltd., Chairman & CEO of Ardentec Corporation, Chairman of IC Industry Committee of CIEE, and Honorary Chair Professor of National Taiwan University.

Dr. Lu has published more than 350 technical papers in international journals and conferences, more than 140 invention patents, and many articles in newspapers or magazines about education, science, technology, and public services. He was awarded received “National Applied Science & Technology Prize”, “Pan WenYuan Outstanding Research Award”, “Distinguished Alumni Award” of National Chiao-Tung University”, “Distinguished Achievement Award” of Physics Dept. at National Taiwan University”, “Distinguished Achievement Award” of Chinese Institute of Engineers (CIE-USA), “Superiority Business Award” of ROC Chamber of Commerce, and “Individual Special Contribution Awards” of AT&T Bell Laboratories...etc..

Prof. Harry Atwater



Harry Atwater obtained his Doctor's degree in Massachusetts Institute of Technology. He is currently Howard Hughes Professor and Professor of Applied Physics and Materials Science at the California Institute of Technology. His research interests center around two interwoven research themes: photovoltaics and solar energy; and plasmonics and optical metamaterials.

Atwater and his group have been active in photovoltaics research for more than 20 years. Recently they have created new photovoltaic devices, including the silicon wire array solar cell, and layer-transferred fabrication approaches to III-V semiconductor III-V and multijunction cells, as well as making advances in plasmonic light absorber structures for III-V compound and silicon thin films. He is an early pioneer in surface plasmon photonics; he gave the name to the field of plasmonics in 2001.

He has authored or co-authored over 200 publications, and his group's developments in the solar and plasmonics field have been featured in Scientific American and in research papers in Science, Nature Materials, Nature Photonics and Advanced Materials.

Atwater has been honored by awards including the Joop Los Fellowship from the Dutch Society for Fundamental Research on Matter in 2005, MRS Kavli Lecturer in Nanoscience in 2010; Popular Mechanics Breakthrough Award, 2010; A.T. & T. Foundation Award, 1990; NSF Presidential Young Investigator Award, 1989; IBM Faculty Development Award, 1989-1990; Member, Bohmische Physical Society, 1990; IBM Postdoctoral Fellowship, 1987.

Prof. PAN Fusheng



Prof. Pan obtained his Doctor's degree in Northwestern Polytechnic University (NPU). He is President of Chongqing Academy of Science & Technology, Director of National Engineering Research Centre for Magnesium Alloys in Chongqing University, First Deputy Director-General of Chongqing Science & Technology Commission of Chongqing Government, Vice-President of the China Magnesium Association, and Member of the Materials Committee of the State Council Degree Commission.

His Research work is focused on magnesium alloys, aluminum alloys, metal matrix composites and thin-strip casting. He has experiences of studying and working in Oxford University, UK (1991- 1993); the State Materials Testing Institute, Germany (1995-1996); Chiba University, Japan (2002-2003); University of California (UCLA), USA (2004); University of London (Queen Mary), UK (2006-2007). He is author or co-author of more than 300 scientific and technical papers and 9 books. He was awarded the HLHL Prize in 2008, the National S&T Prize in 2005, Dupont S&T Innovation Prize in 2001 and the S&T Prize of Ministry of Education of China in 2000. He was Chairman of "1st UK-China Advanced Materials Symposium 2005", "3rd China-Europe Advanced Materials Symposium", "3rd International Conference on Magnesium" and "4th International Conference on Magnesium".

Dr. Harriet Kung



Dr. Kung received her Ph.D. in Materials Science and Engineering with a minor in Applied and Engineering Physics from Cornell University. Dr. Harriet Kung has served as the Associate Director of Science for Basic Energy Sciences (BES) since June 9, 2008. During her tenure, Dr. Kung led a number of Basic Research Needs workshops to define scientific research directions for science-to-technology pathways and was instrumental in the success of interagency collaborations, DOE research integration efforts, and international coordination activities. Under her leadership, BES has pursued new funding modalities in advancing the science for the energy research agenda, including the establishment of 46 Energy Frontier Research Centers and the Fuels from Sunlight Energy Innovation Hub. In 2010, BES also successfully completed the world's first x-ray free electron laser user facility—the Linac Coherent Light Source.

Dr. Kung served as the Director of the Materials Sciences and Engineering (MSE) Division in BES from 2004 to 2008. Before joining DOE in 2002 as a program manager in MSE, Dr. Kung was a technical staff member and a project leader in the Materials Science and Technology Division at Los Alamos National Laboratory (LANL). Her research group focused on structure-property relationship in nanoscale materials. She also conducted research in high temperature superconductivity in the Superconductivity Technology Center at LANL. She has published approximately 100 refereed papers and has given over 50 invited technical presentations.

She also owns the honor of the DOE Distinguished Postdoctoral Fellowship award, several performance and leadership service awards at Los Alamos, and the Presidential Meritorious Executive Rank Award in 2010.

Prof. SAITO Nagahiro



Dr. Nagahiro Saito obtained his Doctor's degree in Waseda University. He is Professor of Green Mobility Collaborative Research Center, Nagoya University. He is also a Project Leader of Eco Topia Science Institute, Nagoya University from 2009. The project is focus on the the research of materials system for human, ecosystem and environment.

His research interests include Physical chemistry, Metallic production engineering, Nano materials/nano bioscience, Material processing/treatment, Environmental technology/environmental material. He owns the honor of "ASIA-PACIFIC INTERFINISH 2010 1st Prize Poster Winner" and "Excellence Award of Poster Presentation" of The 12th International Symposium on Eco-materials Processing and Design in 2011. Besides, he is also a member of academic society of The Surface Science of Japan (2006/04 -), and The Chemical Socieity of Japan.

Prof. Soo Wohn Lee



Prof. Lee obtained his Doctor's degree in University of Illinois at Chicago. He is Professor of Department of Materials Engineering, Sun Moon University. He is also "Organizer of the international symposium on eco-materials processing & design", "Vice president of Korean Institute of Surface Engineering", "General Secretary of ISO/TC107 (Metallic and other inorganic coatings)", and "President of Materials Research Society-Korea".

Prof. Lee has published more than 200 scientific papers on ceramic nano-composites, plasma spray coating in nano ceramics, transparent ceramics, photocatalysts, and tribology in ceramics. He also pays a lot of attention in serious global and environmental problems. He has led the ceramics manufacturing industries to closely monitor the formation and accumulation of carbon dioxide and other toxic gases in the atmosphere, the reduction of raw materials, the consumption of energy and other factors of impact to the industry.

Session Locator

Room#	9/20 PM	9/21 AM	9/21 PM	9/22 AM	9/22 PM
626	A1	A1	A6		
504a	A2	A2	A2	A2	A2
402c	A3	A3	A3	A3	
610	A4		F5		
614	A5	A5	A5		
429	A7	A7	A7		
504c	B1+B2	B1+B2	B1+B2	B1+B2	
501	B3	B3	B3	B3	B3
634	B4 +B6		D4		
630	B5	E5	E5		
403	C	C	C	C	
402b	D1	D1	D1	D2	D2
402a	D2	D2	D2	D2	D2
521	D3	D3	D3		
509	D5	D5	D5		
609	E1	E1	E1	E1	
503	E3	E3	E3	E3	
449	E6	E6	E6	E4	
504b	E7	E7	E7	E7	
616	F1	F1	F1	F1	
644	F2	E2	E2		
622	F3	F3	F3		
502	F4	B3	B3	B3	B3
404	F6	F6	F6	F6	

Symposium A1

Conference Room: 626

2011/9/20

Chair: Li-chung Yang

0115 13:40-13:55 L.S. Wang

**Preparation of magnetic transparent conducting
ZnO:Al/Fe₆₅Co₃₅/ZnO:Al multifunctional films**

L.S. Wang, H.Z. Guo, Y. Chen, and D.L. Peng*; Department of Materials Science and Engineering, College of Materials, Xiamen University, Xiamen, P. R. China; *College of Materials, Xiamen University, Xiamen 361005, P. R. China; dlpeng@xmu.edu.cn

0693 13:55-14:10 Kuo-Chuan Ho

Electrochemical Synthesis of ZnO

Nanosheets/Nanoparticles Double-layer Nanostructure with Self-established Light Scattering Property and its Application for Dye-sensitized Solar Cells

C. W. Kung¹, H. W. Chen¹, C. Y. Lin¹, Y. H. Lai¹, and K. C. Ho^{1,2*}; ¹Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan; ²Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan; kcho@ntu.edu.tw

0223 14:10-14:25 Ming-Yao Hsiao

p-CuO/n-Cu₂O Heterojunction Layer Grown on Flexible Prepared by using High Power Impulse Magnetron Sputtering

Ming-Yao Hsiao*, Ying-Hung Chen, Ju-Liang He; Department of Materials Science and Engineering, Feng Chia University, 100 Wen-Hwa Rd., Taichung 40724, Taiwan, R.O.C.; *teaandtea38@hotmail.com

0828 14:25-14:40 Kuo-Chuan Ho

PtNP/MWCNT Composite Counter Electrodes for Dye-Sensitized Solar Cells

K. C. Huang¹, Y. C. Wang², C. Y. Liu¹, J. J. Lin^{2,3}, and K. C. Ho^{1,2*}; ¹Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan; ²Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan; ³Department of Materials Science and Engineering, Center of Nanoscience and Nanotechnology, National Chung Hsing University, Taichung 402, Taiwan; kcho@ntu.edu.tw

----- **Break (15:00-15:40)** -----

Chair: Song-Yeu Tsai

0065 15:40-15:55 Ying Yang

**A Novel Composite Polysaccharide/inorganic
Oxide Electrolyte for High Efficiency**

Quasi-solid-state Dye-sensitized Solar Cell

Ying Yang^{1*}, Xue-yi Guo², Xing-Zhong Zhao^{3*}; ^{1,2}School of Metallurgical Science & Engineering, Central South University, Changsha 410083, China; ³Department of Physics and Key Laboratory of Artificial Micro- and Nano-structures of Ministry of Education, Wuhan University, Wuhan 430072, China; *muyicaoyang@hotmail.com; *xzzhao@whu.edu.cn

0443 15:55-16:10 Chia- Hsien Cho

**Effect of scattering on the performance of
photoanodes used in dye sensitized solar cell**

Chia- Hsien Cho¹, Jyh-Ming Ting^{1,2}; ¹Department of material science and engineering, National Cheng Kung University, Tainan, Taiwan; ²Institute of nanotechnology and Microsystems engineering, National Cheng Kung University, Tainan, Taiwan; ccs1510763@hotmail.com

0929 16:10-16:25 Thanh-Tung Duong

**TiO₂/ITO/SWCNT photo sensitizer layer for
photo-electrochemical cells**

Thanh-Tung Duong¹⁾, Soon-Gil Yoon^{1),†}; ¹⁾School of Nano Science and Technology, [†]Graduate of Analytical Science and Technology (GRAS), Chungnam National University, Daeduk Science Town, Daejeon 305-764, Korea; sgyoon@cnu.ac.kr

0395 16:25-16:40 P. S. Patil

**Hydrothermal synthesis of TiO₂ nanocorals,
nanorods and nanoflowers and their impact on
the performance of the dye-sensitized solar cells**

P. S. Patil^{1*}, S. S. Mali¹, C. A. Betty², R. S. Devan³, Y. R. Ma³ and P. N. Bhosale⁴; ¹Department of Physics, Shivaji University, Kolhapur, India; ²Chemistry Division, Bhabha Atomic Research Centre, Mumbai, India; ³Department of Physics, National Dong Hwa University, Hualien, Taiwan; ⁴Department of Chemistry, Shivaji University, Kolhapur, India; *patilps_2000@yahoo.com

2011/9/21**Chairs: Tiger Ma & Jon-Yiew Gan****0937 10:45-11:10 Shigeru Niki (IS)****Current Status and Future Prospects of the CIGS Technology**

Shigeru Niki^{1*}, Shogo Ishizuka¹, Hironori Komaki¹, Shigenori Furue¹, Koji Matsubara¹, Hajime Shibata¹, Akimasa Yamada¹, Norio Terada², Takeaki Sakurai³ and Katsuhiro Akimoto³; ¹ Research Center for Photovoltaics, AIST, Tsukuba, Ibaraki, Japan; ² Kagoshima University, Kagoshima, Kagoshima, Japan; ³ Tsukuba University, Tsukuba, Ibaraki, Japan; * shigeru-niki@aist.go.jp

0643 11:10-11:30 Jon-Yiew Gan**Optimization of Conventional Screen-printed Silicon Solar Cells**

Yi-Yang Chen¹, and Jon-Yiew Gan^{1*}, Der-Chin Wu², Jui-Chung Shiao², Chien-Hsun Chen², Chao-Cheng Lin², Chien-Hsi Lin², Wen-Haw Lu², and Chern-Lin Chen²; ¹ Department of Material Science and Engineering, National Tsing-Hua University, Taiwan; ² Green Energy & Environment Research Labs, Industrial Technology Research Institute (ITRI), Taiwan; *JYGan@mx.nthu.edu.tw

Symposium A2

Conference Room: 504a

2011/9/20**Chair : Michael L. Chabinyc****0018 13:40-14:05 Michael L. Chabinyc (IS)****Nanostructure and Interfaces in Organic Bulk Heterojunction Solar Cells**

Michael L. Chabinyc; Materials Department, University of California, UC Santa Barbara, Santa Barbara, CA 93106-5050, USA; mchabinyc@engineering.ucsb.edu

0039 14:05-14:30 Chan Eon Park (IS)**Development of thermally stable and highly efficient organic solar cells**

Chan Eon Park; Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, Korea, San 31 Hyoja-dong, Pohang, Kyungbuk, 790-784, Korea; cep@postech.ac.kr

0032 14:30-14:55 Kung-Hwa Wei (IS)**Solvent Additives Induced Self-organization of Crystalline Conjugated Polymer and Fullerenes for Heterojunction Solar Cells**

Kung-Hwa Wei; Department of Materials Science and Engineering, National Chiao Tung University, 1001 University Road, Hsinchu, 300 Taiwan; khwei@mail.nctu.edu.tw

----- **Break (15:00-15:40)** -----**Chair : Robert P.H. Chang****0017 15:40-16:05****Robert P.H. Chang (IS)****Optimization of Materials, Interfaces, and Photon Confinement in Dye-Sensitized Solar Cells**

Robert P.H. Chang; Department of Materials Science and Engineering, Northwestern University, 2225 N. Campus Drive, Evanston, IL 60208-3108, USA; r-chang@northwestern.edu

0020 16:05-16:30**Shozo Yanagida (IS)****Computer-assisted molecular evaluation for Dye-sensitized Solar Cells**

Shozo Yanagida; Center for Advanced Science and Innovation, Osaka University
1-1 Yamadaoka, Suita, Osaka 565-0871 Japan;
s.yanagida@casi.osaka-u.ac.jp

0029 16:30-16:55 Jiann T. Lin (IS)**Organic Sensitizers for Dye-Sensitized Solar Cells**

Jiann T. Lin^{1*}, Kuo-Chuan Ho², and Chao-Pin Hsu¹;
¹ Institute of Chemistry, Academia Sinica, 128 Academia Road, Section 2, Nankang, Taipei 115, Taiwan, ROC; ² Department of Chemical Engineering, National Taiwan University, Taipei, ROC; *jtlin@chem.sinica.edu.tw

2011/9/21

Chair : Kilwon Cho (IS)

0055 10:45-11:10 Kilwon Cho (IS)

High Efficiency Organic Photovoltaic Solar Cells with Controlled Nanomorphology of Photoactive Layers

Kilwon Cho; Dept. of Chemical Engineering, Pohang University of Science and Technology, San 31 Hyoja-dong, Nam-gu, Pohang, Kyungbuk, 790-784, Korea;

*kwcho@postech.ac.kr

0019 11:10-11:35 Mitsuru Ueda (IS)

Enhancement of P3HT/PCBM Photovoltaic Efficiency Using the Surfactant of Triblock Copolymer Containing Poly(3-hexylthiophene) and Poly(4-vinyltriphenylamine) Segments

Mitsuru Ueda; Department of Organic and Polymeric Materials, Tokyo Institute of Technology, Meguro-ku, 2-12-1 O-okayama, Meguro, Tokyo 152-8552;

ueda.m.ad@m.titech.ac.jp

0054 11:35-12:00 Chain-Shu Hsu (IS)

High efficiency organic solar cell based on novel Low band gap polymers and fullerene derivatives

Chain-Shu Hsu* and Yen-Ju Cheng; Department of Applied Chemistry, National Chiao Tung University, 1001 Ta-Hsueh Road, Hsinchu, Taiwan; cshsu@mail.nctu.edu.tw

----- **Lunch (12:00-13:40)** -----

Chair : Yung-Eun Sung

0038 13:40-14:05 Yung-Eun Sung (IS)

1-D Nanostructured TiO₂ Photoanodes for Dye-Sensitized Solar Cells

Yung-Eun Sung*, Soon Hyung Kang, and Jae-Yup Kim; School of Chemical and Biological Engineering and World Class University Program of Chemical Convergence for Energy & Environment, Seoul National University, 599 Gwanak-ro, Gwanak-gu, Seoul 151-744, Korea;

*ysung@snu.ac.kr

0052 14:05-14:30 Yun Chi (IS)

Panchromatic Ru(II) Sensitizers For DSSC Applications

Yun Chi; Department of Chemistry, National Tsing Hua University, No. 101, Section 2, Kuang-Fu Road, Hsinchu, 30013 Taiwan; ychi@mx.nthu.edu.tw

0031 14:30-14:55

Chun-Guey Wu (IS)

Dye sensitized solar cells

Chun-Guey Wu; Department of Chemistry, National Central University, 300 Jung-Da Rd. Jhong-Li 32001, Taiwan; t610002@cc.ncu.edu.tw

----- **Break (15:00-15:40)** -----

Chair : Eric Wei-Guang Diau

0016 15:40-16:00

Eric Wei-Guang Diau (IS)

Design and Characterization of Functional Materials for Highly Efficient Dye-Sensitized Solar Cells

Eric Wei-Guang Diau*; Department of Applied Chemistry and Institute of Molecular Science, National Chiao Tung University, *1001 Ta-Hsueh Rd., Hsinchu 300, Taiwan, diaw@mail.nctu.edu.tw

0078 16:00-16:15 King-Fu Lin (IS)

Photovoltaic performance of dye-sensitized solar cells based on cross-linkable sensitizers and binary ionic liquid electrolyte system

Ke-Gang Wen¹, Chiao-Yueh Lo,² Yu-Wen Chenge² and King-Fu Lin^{*1,2}; ¹Institute of Polymer Science and Engineering, National Taiwan University, Taipei, Taiwan; ²Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan; kflin@ntu.edu.tw

0331 16:15-16:30 Li-Chieh Chen

Electrophoretic deposition for making photoanodes used in flexible gel-state dye-sensitized solar cells

Li-Chieh Chen^a, Yuh-Lang Lee^b, Jyh-Ming Ting^{a*}; ^aDepartment of Materials Science and Engineering, National Cheng Kung University; ^b Department of Chemical Engineering, National Cheng Kung University, No.1, University Road, Tainan City 701, Taiwan; jting@mail.ncku.com.tw

0198 16:30-16:45 Jyh-Ming Ting

Preparation of Mesoporous TiO₂ Beads Using Microwave-assisted Hydrothermal Process and Their Use In Solid-State Dye Sensitized Solar Cells

Chiung-Wen Hsu¹, Peter Chen², Jyh-Ming Ting^{3*}; ¹ Department of Materials Science and Engineering, National Cheng Kung University; ² Department of Photonics, National Cheng Kung University; ³ Institute of Nanotechnology and Microsystems Engineering, National Cheng Kung University, Tainan 70101, Taiwan; jting@mail.ncku.edu.tw

0893 16:45-17:00 Bohyung Kim

Organic Sensitizers based on different spacers in D- π -A system for DSSCs

Bohyung Kim, H.S. Freeman; Fiber and Polymer Science Program, North Carolina State University, Raleigh, NC, USA; bkim6@ncsu.edu; harold_freeman@ncsu.edu

2011/9/22**Chair : Ching-Fuh Lin****0103 09:00-09:15 Ching-Fuh Lin (IS)****Organic-inorganic hybrid solar cells**

Ching-Fuh Lin; GIPO, GIEE, Department of Electrical Engineering, National Taiwan University, R511, Barry Lam Hall, No. 1, Sec.4, Roosevelt Rd., Taipei 10617, Taiwan; cflin@cc.ee.ntu.edu.tw

0834 09:15-09:30 Chih-hung Chang (IS)

Develop Scalable Nanomanufacturing for Hybrid Organic-Inorganic Thin Films for Photovoltaics using Microreactor-Assisted Nanomaterial DepositionTM

Chih-hung Chang^{1*}, Seung-Yeol Han¹, Hyungdae Jin¹, Yu-Wei Su¹, Wei-Liang Yen¹, and Wei-Fang Su²; ¹ School of Chemical, Biological and Environmental Engineering, Oregon State University, Corvallis, OR USA; ² Department of Materials Science and Engineering, National Taiwan University, Taipei Taiwan; Gleeson Hall 103, School of Chemical, Biological and Environmental Engineering, Oregon State University, Corvallis, OR 97331 USA; changch@che.orst.edu

0037 09:30-09:45 Chih-Wei Chu (IS)

Efficient polymer solar cells through cascade concentration structure

Tsung-Hsien Kuo², Jen-Hsien Huang³, Kuo-Chuan Ho^{1,2}, and Chih-Wei Chu^{3*}; ¹ Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan 106; ² Institute of Polymer Science and Engineering, National Taiwan University, Taipei, Taiwan 106; ³ Research Center for Applied Sciences, Academia Sinica, *128 Academia Road, Section 2, Nankang, Taipei 115-29, Taiwan; gchu@gate.sinica.edu.tw

1177 09:45-10:00 Sung-Yu Ku

A Facile Synthesis of Dithieno[3,2-b:2',3'-d]thiophene for Low-Band-Gap Copolymers

Sung-Yu Ku, Neil D. Treat, Christopher D. Liman, Justin E. Cochran, Daniel J. Burke, Elizabeth Amir, Louis A. Perez, Michael L. Chabiny^{*} and Craig J. Hawker^{*}; Materials Research Laboratory, Materials Department, Mitsubishi Chemical Center for Advanced Materials, University of California Santa Barbara, CA 93106 (USA); mchabiny@engineering.ucsb.edu; hawker@mrl.ucsb.edu

0169 10:00-10:15 Chia-Hsin Lee

Surface modification of TiO₂ by (4,5-diaza-9,9'-spirobifluorene) functionalized donor/ acceptor conjugated polymers for P3HT/ TiO₂ hybrid solar cell

Chia-Hsin Lee^{1,2*}, Yi-Chen Ho², Hsueh-Chung Liao², Chih-Min Chuang¹, Wei-Fan Su², Cheng-Si Tsao¹, Charn-Ying Chen¹; ¹ Division of Nuclear Fuel and Materials, Institute of Nuclear Energy Research, Taoyuan County, Taiwan; ² Department of Material Science and Engineering, National Taiwan University, Taipei, Taiwan;

*monacolee@iner.gov.tw

0304 10:15-10:30 H. L. Chen (IS)

Exploiting optical anisotropy to increase the external quantum efficiency of flexible P3HT: PCBM blend solar cells at large incident angles

S. Y. Chuang, C. C. Yu, H. L. Chen^{*}, W. F. Su, C. W. Chen, and S. C. Tseng; Department of Materials Science and Engineering, National Taiwan University, No. 1, Sec. 4, Roosevelt Road, Taipei, 10617, Taiwan; hsuenlichen@ntu.edu.tw

----- Break (10:30-10:45) -----

Chair : Bo-Yu Huang**0235 10:45-11:00 Bo-Yu Huang (IS)**

Efficiency Prediction and Interface Effects of Organic/Crystalline Silicon Hybrid Solar Cells

Bo-Yu Huang¹, Ting-Gang Chen¹, and Peichen Yu^{1,*}; ¹ Department of Photonic & Institute of Electro-Optical Engineering, National Chiao Tung University, 1001 Ta Hsueh Road, Hsinchu 300, Taiwan; * yup@faculty.nctu.edu.tw

0011 11:00-11:15 Min-Hsiang Hsu

Balanced Carrier Transport in Organic Solar Cells Using Embedded Indium-Tin-Oxide Nano-Electrodes

Min-Hsiang Hsu¹, Jen-Hsien Huang^{2,3}, Chia-Hua Chang¹, Yu-Chih Cheng¹, Chih-Wei Chu², and Peichen Yu^{1*}; ¹ Department of Photonics and Institute of Electro-Optical Engineering, National Chiao-Tung University, Hsinchu 30010, Taiwan; ² Research Center for Applied Sciences, Academia Sinica, Taipei 11529, Taiwan; ³ Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan.

0445 11:15-11:30 Deniz Wong

Organic-Inorganic Hybrid Solar Cells from Phthalocyanine-Siloxane Polymers and Silicon Nanocrystals

D. Wong^{1,2}, H.T. Lien^{3,5}, Y.T. Chen^{2,4}, K.H. Chen^{4,*}, and L.C. Chen⁵; ¹ Nanoscience and technology Program, Taiwan International Graduate Program, Academia Sinica, Taiwan; ² Department of Chemistry, National Taiwan University, Taiwan; ³ Institute of Polymer Science and Engineering, National Taiwan University, Taiwan; ⁴ Institute of Atomic and Molecular Sciences, Academia Sinica, Taiwan; ⁵ Center of Condensed Matter Sciences, National Taiwan University, Taiwan; denizpwong@yahoo.com; chenhk@pub.iam.ssinica.edu.tw

0411 11:30-11:45 Chi-Yang Chao (IS)

P3HT block copolymers: precise syntheses and morphology manipulation

Chi-Yang Chao* and Herman Lim; Department of Materials Science and Engineering, National Taiwan University, 1 Roosevelt Rd. Sec. 4, Taipei, 106, Taiwan; Cychao138@ntu.edu.tw

0231 11:45-12:00 Fangchi Hsu (IS)

The effect of C₆₀ on the ZnO-nanorod surface in organic-inorganic hybrid photovoltaics

Chiang-Ting Chen¹, Fang-Chi Hsu^{2,*}, Yang-Fang Chen^{1,*}; ¹ Department of Physics, National Taiwan University, Taipei, 106, Taiwan; ² Department of Materials Science and Engineering, National United University, Miaoli 360, Taiwan; yfchen@phys.ntu.edu.tw; fangchi@nuu.edu.tw

----- Lunch (12:00-13:40) -----

Chair : Chih-I Wu

0531 13:40-13:55 Chih-I Wu (IS)

Correlation of interfacial electronic structures and power efficiency in organic solar cells

Wei-Hsuan Tseng¹, Mei-Hsin Chen² and Chih-I Wu¹; ¹ Graduate Institute of Photonics and Optoelectronics and Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan 106, Republic of China; ² Department of Opto-Electronic Engineering, National Dong Hwa University, Hualien 974, Taiwan

0731 13:55-14:10 Monica Lira-Cantu

Oxide/polymer Interfaces for Hybrid and Organic Solar Cells

Monica Lira-Cantu*, Irene Gonzalez-Valls, Yu Youhai; Centre d'Investigació en Nanociència i Nanotecnologia (CIN2,

CSIC), Campus UAB, Edifici ETSE, Bellaterra (SPAIN), 08193. monica.lira@cin2.es

1333 14:10-14:25 Jhih-Fong Lin

Improve the Efficiency of P3HT/TiO₂ Nanorod Solar Cell via Interface Engineering

Guan-Yao Tu¹, Jhih-Fong Lin², Yu-Chieh Tu², Sheng-Hao Hsu¹, Chun-Chih Ho², Li-Wei Yin¹, Yang-Fang Chen³, Wei-Fang Su^{1,2,*}; ¹ Institute of Polymer Science and Engineering, National Taiwan University, Taipei, Taiwan. ² Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan. ³ Department of Physics, National Taiwan University, Taipei, Taiwan. *E-mail: suwf@ntu.edu.tw

0536 14:25-14:40 Chih-Min Chuang

Ultrasonic spray deposition for production of organic solar cells

Chih-Min Chuang^{1*}, Hou-Chin Cha¹, Fan-Hsuan Hsu¹, Charn-Ying Chen¹, Wei-Fang Su², Cheng-Si Tsao¹; ¹ Institute of Nuclear Energy Research, Atomic Energy Council, Taoyuan 325-46, Taiwan; ² Department of Materials Science and Engineering, National Taiwan University, Taipei 106-17, Taiwan; cmchuang@iner.gov.tw

0014 14:40-14:55 Wei-Fang Su

Toward High Efficiency Polymer-Nanoparticle Hybrid Solar Cell

Wei-Fang Su; Department of Materials Science and Engineering, National Taiwan University 1, Roosevelt Road, Sec. 4, Taipei, Taiwan; suwf@ntu.edu.tw

Symposium A3

Conference Room: 402c

2011/9/20

Chairs: C.-C. Hu & K. Naoi

0859 13:40-14:00 Masashi Ishikawa (IS)

Novel Designs of Supercapacitor Focusing on Electrode/Electrolyte Interface

M. Ishikawa*, M. Yamagata, and S. Yamazaki; Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering, Kansai University, Suita, Japan; *3-3-35 Yamate-cho, Suita 564-8680, Japan, masaishi@kansai-u.ac.jp

0683 14:00-14:20 Hsisheng Teng (IS)

Graphite Oxide Reduced by Photocatalytic Reaction as Electrode Materials for Electrochemical Capacitors

Hsin-Chieh Huang, Cheng-Wei Huang, and Hsisheng Teng*; Department of Chemical Engineering and Center for Micro/Nano Science and Technology, National Cheng Kung University, Tainan 70101, Taiwan; *hteng@mail.ncku.edu.tw

1090 14:20-14:40 T. Brousse (IS)**The Pros and Cons of Asymmetric Carbon/MnO₂ Electrochemical Capacitors Using Water-Based Electrolytes**

T. Brousse; Laboratoire de Génie des Matériaux, Polytech Nantes, University of Nantes, La Chantrerie, rue Christian Pauc, BP50609, 44306 Nantes Cedex 3, France;
*thierry.brousse@univ-nantes.fr

0591 14:40-15:00 N. L. Wu (IS)**Synthesis and Characterization of High-Performance Polypyrrole/TiC/C Composite Supercapacitors**

Yu-Ting Weng and N. L. Wu^{*}; Department of Chemical Engineering, National Taiwan University, Taipei 106, Taiwan, R.O.C.; *nlw001@ntu.edu.tw

0196 15:00-15:15 Shigeaki Yamazaki**Charge-discharge Behavior of Electrochemical Capacitor Utilizing Halogen Redox Reactions**

Shigeaki Yamazaki, Tatsuya Itou, Masaki Yamagata, and Masashi Ishikawa^{*}; Department of Chemistry and Materials Engineering, Faculty of Chemistry, Materials and Bioengineering, Kansai University, 3-3-35 Yamate-cho, Suita 564-8680, Japan; *masaishi@kansai-u.ac.jp

----- Break (15:15-15:40) -----

Chairs: M. Ishikawa & N.-L. Wu**0013 15:40-16:00 A.A. Mohamad (IS)****Synthesis of ZnO and TiO₂ Nanomaterials by Metal-air Batteries**

A.A. Mohamad; School of Materials and Mineral Resources Engineering, Universiti Sains Malaysia, 14300 Nibong Tebal, Penang, Malaysia; azmin@eng.usm.my

0906 16:00-16:15 Kuen-Song Lin**Preparation, Characterization, and hydrogen Storage Capacity of Surface-modified Multi-wall Carbon Nanotubes**

Kuen-Song Lin^{*}, Meng-Long Chung, Ruey-Bing Li, Zong-Yan Tsai, and Hung-Bin Tsai; Department of Chemical Engineering and Materials Science/Fuel Cell Center, Yuan Ze University, Chung-Li 320, Taiwan, R.O.C.;
kslin@saturn.yzu.edu.tw

0377 16:15-16:30 M.N. Masri**The Effect of Storage Time Studies of Porous Zinc Anode on Corrosion Reaction for Zinc-Air Battery**

M.N. Masri¹, M.G. Affendy¹ and *A.A. Mohamad¹; ¹School of Materials and Mineral Resources Engineering, Universiti Sains Malaysia, 14300 Nibong Tebal, Penang, Malaysia;
azmin@eng.usm.my

2011/9/21**Chairs: M. Morita & H. Teng****0008 10:45-11:05****Katsuhiko NAOI (IS)**

NANOHYBRID CAPACITOR: The Next-Generation Li-ion Based Ultracapacitor
Katsuhiko NAOI; Institute of Symbiotic Science & Technology, Tokyo University of Agriculture & Technology, 2-24-16 Naka-cho, Koganei, Tokyo 184-8558, Japan; k-naoi@cc.tuat.ac.jp

0634 11:05-11:25**Daniel Belanger (IS)**

New Materials for Electrochemical Capacitors
Daniel Bélanger; Département de Chimie, Université du Québec à Montréal, Montréal, Québec, Canada; belanger.daniel@uqam.ca

1034 11:25-11:45 Kwang Kim (IS)**Synthesis and Electrochemical Properties of Metal Oxide/Reduced Graphite Oxide Nanocomposites for Electrochemical Capacitor Applications**

Kwang Kim^{*}, Hyun Kyung Kim, Jing Go Kim and Ji Young Kim; National Research Laboratory of Energy Conversion and Storage Materials, Department of Material Science and Engineering, Yonsei University, 134 Shinchon-dong, Seodaemoon-gu, Seoul, 120-749, South Korea;
*kbskim@yonsei.ac.kr

0087 11:45-12:05 Kuo-Hsin Chang**Microstructure tuning of tungsten oxides prepared by microwave-assisted solvothermal processes: Effect of solvent on the textural properties and electrochemical behavior of oxides**

Kuo-Hsin Chang^{1,2}, Ya-Ling Liu¹, and Chi-Chang Hu^{1,*}; ¹Department of Chemical Engineering, National Tsing Hua University, 101 Section 2, Kwang Fu Rd., Hsin-Chu 30013, Taiwan;
²Department of Chemical Engineering, National Chung Cheng University, 168 University Rd., Min-Hsiung, Chia-Yi 621, Taiwan;
cchu@che.nthu.edu.tw

----- Lunch (12:05-13:40) -----

Chairs: D. Belanger & B.J. Huang

0698 13:40-14:00 Masayuki Morita (IS)

Electrolyte Composition for Electric Double-layer Capacitors Using Alkali-treated Soft Carbon

In-Tae Kim, Minato Egashira, Nobuko Yoshimoto, Masayuki Morita*; Graduated School of Science and Engineering, Yamaguchi University; 2-16-1, Tokiwadai, Ube, 755-8611, Japan; *morita@yamaguchi-u.ac.jp

0659 14:00-14:15 Shin-Yi Yang

Preparation of a hierarchical graphene-carbon nanotube architecture as electrode material for supercapacitors

Shin-Yi Yang, Kuo-Hsin Chang, His-Wen Tien, Yu-Sheng Wang, Chia-Hong Liu, Ying-Feng Lee, Chen-Chi M. Ma* and Chi-Chang Hu*; Department of Chemical Engineering, National Tsing Hua University, 101 Section 2, Kwang Fu Rd., Hsin-Chu 30013, Taiwan; ccma@che.nthu.edu.tw

0012 14:15-14:35 Hiroki Habazaki (IS)

Capacitance Enhancement by Formation of Nanocomposite Anodic Oxides for Electrolytic Capacitors

Hiroki Habazaki*, Shun Koyama and Yoshitaka Aoki; Division of Materials Chemistry, Faculty of Engineering, Hokkaido University, Sapporo, Hokkaido 060-8628, Japan; *habazaki@eng.hokudai.ac.jp

0650 14:35-14:55 Jeng-Kuei Chang (IS)

Pseudocapacitive performance of MnO₂ in ionic liquid electrolytes

Jeng-Kuei Chang^{1*}, Yun-Shan Li², I-Wen Sun², Ming-Jay Deng³, Ming-Tsung Lee⁴, and Wen-Ta Tsai⁴; ¹Institute of Materials Science and Engineering, National Central University, Taoyuan, Taiwan; ²Department of Chemistry, National Cheng Kung University, Tainan, Taiwan; ³National Synchrotron Radiation Center, Hsinchu, Taiwan; ⁴Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan; * 300 Jhong-Da Road, Taoyuan County, Taiwan; jkchang@ncu.edu.tw

0357 14:55-15:10 Tsu-chin Chou

Hierarchically ordered porous carbon with high power performance of EDLCs application

Tsu-chin Chou¹, Chi-Chang Hu², and Ruey-an Doong^{1*}; ¹National Tsing Hua University, Department of Biomedical Engineering and Environmental Sciences, Hsinchu 30013, Taiwan; ²National Tsing Hua University, Department of Chemical Engineering, Hsinchu 30013, Taiwan; d9712901@oz.nthu.edu.tw

----- Break (15:10-15:40) -----

Chairs: J.-K. Chang & H. Habazaki

1422 15:40-16:00 Bing-Joe Hwang (IS)

Performance of New Sn-based Carbon Nanocomposites for Lithium Ion Batteries

Ming-Yao Cheng,^a Cheng-Liang Hwang,^b Chun-Jen Pan,^b Ju-Hsiang Cheng,^b Yun-Sheng Ye,^b John F. Rick,^b and Bing-Joe Hwang^{b,c,*}; ^aGraduate Institute of Engineering, National Taiwan University of Science and Technology; ^bDepartment of Chemical Engineering, National Taiwan University of Science and Technology; ^cNational Synchrotron Radiation Research Center (NSRRC); #43, Sec. 4, Keelung Rd., Taipei 106, Taiwan, ROC; bjh@mail.ntust.edu.tw

0337 16:00-16:15

Erwin F. Rodriguez T.

Spinel Li₄Ti₅O₁₂ Synthesized via Hydrothermal Processes and its Electrochemical Study

Erwin F. Rodriguez T.¹, Nae-Li Wu^{1*}; ¹Department of Chemical Engineering, National Taiwan University, Taipei City, Taiwan, R.O.C.; *nlw001@ntu.edu.tw

0813 16:15-16:30 H. R. Lee

FABRICATING CARBON CAPTURED SnO₂-NANOPARTICLE WITH HYDROTHERMAL METHOD AND THEIR APPLICATION TO LITHIUM-ION BATTERIES

H. R. Lee¹, T. Y. Choi², and D. H. Yoon^{1,2*}; ¹Sungkyunkwan Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon, Republic of Korea; ²School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Republic of Korea; *dhyoon@skku.edu

0725 16:30-16:45 Yu-Sheng Lin

Facile Synthesis of Mesoporous Lithium Titanate Spheres for High Rate Lithium-ion Batteries

Yu-Sheng Lin^a, and Jenq-Gong Duh^{a,x}; ^aDepartment of Materials Science and Engineering, National Tsing Hua University, No. 101, Sec. 2, Kuang-Fu Rd., Hsinchu, Taiwan 30013; *jgd@mx.nthu.edu.tw

2011/9/22

Chairs: K.L. Hsueh & S.-H. Wu

0826 09:00-09:20

Mao-Sung Chen (IS)

Preparation and characterization of LiFePO₄/Li₃V₂(PO₄)₃ composite cathode materials for Li ion batteries by a solution method

She-huang Wu*, Mao-Sung Chen; ¹Department of Materials Engineering, Tatung University, 40, Sec. 3, Jhongshan N. Rd., Taipei 104, Taiwan; *shwu@ttu.edu.tw

0723 09:20-09:35 Chih-Yuan Lin**Improved capacity and rate capability of Ru-doped and carbon-coated $\text{Li}_4\text{Ti}_5\text{O}_{12}$ anode material**Chih-Yuan Lin^{1*}, Yi-Ruei Jhan¹ and Jenq-Gong Duh¹;¹Department of Materials Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan; jgd@mx.nthu.edu.tw**0898 09:35-09:50 Chung-Ta Ni****Role of Al substitution on Structure and Conduction properties of NASICON and Perovskite-type Li Solid Electrolytes**Chih-Ying Shen, Kai-Yun Yang, Chung-Ta Ni^{*}, Kuan-Zong Fung; Department of Materials Science and Engineering, National Cheng Kung University, Tainan 701, Taiwan; n5895134@mail.ncku.edu.tw**0222 09:50-10:05 Wen-Chi Lo****Nano-flaky TiO_2 Grown on Titanium for Lithium-ion Rechargeable Battery Anode Electrode**Wen-Chi Lo^{*}, Hou-Jen Chu, Ju-Liang He, Keh-Chang Chen; Department of Materials Science and Engineering, Feng Chia University, 100 Wen-Hwa Rd., Taichung 40724, Taiwan, R.O.C.; p9525228@hotmail.com**0724 10:05-10:20 Yi-Ruei Jhan****High structure stability of Ruthenium doped $\text{Li}_4\text{Ti}_5\text{O}_{12}$ and its electrochemical characteristic as discharged to 0.001V**

Yi-Ruei Jhan and Jenq-Gong Duh; Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan/

----- Break (10:30-10:45) -----

Chair: J. G. Duh**0754 10:45-11:00 Yi-Chun Jin****Crystallographic structures and cycling performance of $\text{LiNi}_0.5\text{Mn}_1.5\text{O}_4$ cathode materials for lithium ion battery**

Yi-Chun Jin, Chih-Yuan Lin, Jenq-Gong Duh; Department of Materials Science and Engineering, National Tsing Hua University, No. 101, Sec. 2, Kuang-Fu Rd., Hsinchu, Taiwan 30013.

0714 11:00-11:15 Je-Jang Shiu**Electrochemical properties of $\text{LiNi}_{0.5-x}\text{Mn}_{1.5+x}\text{O}_{4-\delta}$ spinel cathode materials synthesized via Pechini method**Je-Jang Shiu and She-huang Wu^{*}; Department of Materials Engineering, Tatung University, 40, Sec. 3, Chungshan N. Rd., Taipei, 104, Taiwan; shwu@ttu.edu.tw**0719 11:15-11:30 Chien-Chun Hsieh****Improvement of the elevated temperature cycling of $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ through carbon coated technique**Chien-Chun Hsieh, Chih-Yuan Lin and Jenq-Gong Duh^{*}; Department of Materials Science and Engineering, National Tsing Hua University, No. 101, Sec. 2, Kuang-Fu Rd., Hsinchu, Taiwan 30013**0187 11:30-11:45 She-huang Wu****Cycling performance of LiFePO_4 cells prepared with electrolytes of 1M LiPF_6 in of EC/DEC, EC/DMC or EC/EMC**Tsung-Yeh Yang¹, Ching-Yao Lin¹, Chao-Jung Chien¹, and She-huang Wu^{1,2*}; ¹Energy Storage and Conversion Technology Research Center, Tatung University, 40 Chungshan N. Rd., Sec. 3, Taipei 104, Taiwan; ²Department of Materials Engineering, Tatung University, 40 Chungshan N. Rd., Sec. 3, Taipei 104, Taiwan; ^{*} shwu@ttu.edu.tw**0438 11:45-12:00 Kan-Lin Hsueh****Characterization of Carbon Electrode for the Vanadium Redox Flow Battery**Chun-Hsing Wu, Hsin-Yi Liao, Kan-Lin Hsueh^{*}, Wen-Chen Chang; Green Energy and Environmental Research Laboratories (GEL), Industrial Technology Research Institute (ITRI), Chutung, Hsinchu, Taiwan; Rm 307A, Bldg. 64, 195, Sec. 4, Chung Hsing rd., Chutung, Hsinchu, TAIWAN; KanLinHsueh@itri.org.tw

Symposium A4

Conference Room: 610

2011/9/20

Chair: Z. Liang

0010 13:40-14:00 Zhenxing Liang (IS)

Hemin: a highly effective electrocatalyst mediating oxygen reduction reaction

Zhen-Xing Liang, Shi-Jun Liao; School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510641, P.R. China

0033 14:00-14:15 Xujin Bao

NANOCOMPOSITE POLYMERIC ELECTROLYTE MEMBRANES FOR HIGH TEMPERATURE FUEL CELL APPLICATIONS

Xujin Bao* and Qingting Liu; Department of Materials, Loughborough University, Loughborough, Leicestershire LE11 3TU, UK; x.bao@lboro.ac.uk

0068 14:15-14:30 Shuqin Song

Microscale Design of Mesoporous Carbon and Investigation on the Performance of Carbon Supported Pt-based Electrocatalysts

Chaoxiong He¹, Yeru Liang², Zhenghui Li², Ruowen Fu², Dingcai Wu², Shuqin Song^{1*}; ¹State Key Laboratory of Optoelectronic Materials and Technologies, School of Physics and Engineering, Sun Yat-sen University, Guangzhou 510275, China; ²Materials Science Institute, PCFM Laboratory, School of Chemistry and Chemical Engineering, Sun Yat-sen University, Guangzhou 510275, China

0173 14:30-14:45 Chun-Ying Hsu

Study the effect of SiO₂ on the gas diffusion layer for PEMFC performance under low relative humidity

Chun-Ying Hsu^{1*}, Chuang-Ling Chiu¹, Feng-Bor Weng¹, Ay Su¹, and Teng-Lang Feng²; ¹Fuel cell center & Department of Mechanical Engineering, Yuan Ze University, Chung-Li, Taiwan; ²Department of Mechanical Engineering, Nanya Institute of Technology, Chung-Li, Taiwan;

*chunyinghsu@saturn.yzu.edu.tw

0314 14:45-15:00 TONG Ju-Ying

Research on properties of SPEEK based proton exchange membranes doped with ionic liquids and Y₂O₃ in different humidity

LI Dan, GUO Qiang*, TAN Xiaolin, DONG Yunfeng, LI Xia, TONG Juying, LI Meng; School of Materials Science and Engineering, Shanghai University, Shanghai 201800, China

Chair: F. B. Weng,

0332 15:40-15:55 Sheng-Yu Fang

Influence of adding ZnO Particles in the Catalyst Layer on the PEMFC Performance

Wen-Kai Chao, Rong-Hsing Huang, Sheng-Yu Fang, Fuh-Sheng Shieu*; Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; *fsshieu@dragon.nchu.edu.tw

0341 15:55-16:10 Sue-min Chang

Texture and Surface Acidity Dependent Proton Conductivities of Porous Sulfated Zirconia

Sue-min Chang^{1*}, Jhih-Ping Gu²; Institute of Environmental Engineering, National Chiao Tung University, 1001 University Road, Hsinchu, Taiwan; *chang@mail.ntcu.edu.tw

0409 16:10-16:25 Vitaly Gurylev

TiO₂ aided deposition of Pt nanoparticles on carbon nanotubes by inductivity coupled plasma enchanted atomic layer deposition for application in PEMFC

Vitaly Gurylev¹, Chi-Chung Kei^{1,2}, and Tsong-Pyng Perng^{1,2,3,*}; ¹Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan; ²Instrument Technology Research Center, National Applied Research Laboratories, Hsinchu 300, Taiwan; ³Department of Chemical Engineering and Materials Science, Yuan Ze University, Chungli 320, Taiwan; *tpperng@mx.nthu.edu.tw

0455 16:25-16:40 Chen-Hao Wang

Non-precious cyanamide-derived cobalt catalyst for polymer electrolyte fuel cell

Chen-Hao Wang^{1*}, Sun-Tang Chang¹, Hsin-Cheng Hsu¹, He-Yun Du², Jyh-Fu Lee³, Li-Chyong Chen², Kuei-Hsien Chen^{2,4*}; ¹Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei, 10607, Taiwan; ²Center for Condensed Matter Sciences, National Taiwan University, Taipei, 10617, Taiwan; ³National Synchrotron Radiation Research Center, Hsinchu, 300, Taiwan; ⁴Institute of Atomic and Molecular Science, Academia Sinica, Taipei, 10617, Taiwan; chwang@mail.ntust.edu.tw; chenkh@pub.iam.s.sinica.edu.tw

----- Break (15:00-15:40) -----

0912 16:40-16:55 Kuen-Song Lin**Preparation, Characterization, and Hydrogen Storage of HKUST-1 Metal Organic Frameworks for an Integrated Fuel Processor**

Kuen-Song Lin*, Chao-Shung Chang, Mu-Ting Tu, Chang-Shaing Hsu, and Hwa Kuo; Department of Chemical Engineering and Materials Science/Fuel Cell Center, Yuan Ze University, Chung-Li 320, Taiwan, R.O.C.; kslin@saturn.yzu.edu.tw

Symposium A5**Conference Room: 614****2011/9/20****Chair: Chia-Min Yang****0519 13:40-14:10 J. YE (IS)****Nano Photocatalysts for Solar Chemical Conversion and Environmental Remediation**

J. YE, H. Tong, N. Umezawa, S. Ouyang, Y. Bi, T. Kako; Photocatalytic Materials Center, and International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), 1-2-1 Sengen, Tsukuba, Ibaraki, Japan; jinhua.ye@nims.go.jp

0470 14:10-14:25 Naoto Umezawa (IS)**Theoretical Design of Photocatalysts**

Naoto Umezawa^{1*} and Jinhua Ye^{1,2}; ¹Research Unit of Environmental Remediation Materials, National Institute for Materials Science, Ibaraki 305-0047, Japan; ²International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science, Ibaraki, 305-0044 Japan; umezawa.naoto@nims.go.jp

0127 14:25-14:40 Yu-Chih Chen**Effect of In₂O₃ Decoration on the Photocatalytic Property of Anatase TiO₂ Nanowires**

Yu-Chih Chen and Yung-Jung Hsu*; Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan 30010, ROC; yhsu@cc.nctu.edu.tw

0491 14:40-14:55 Chunxu Pan**Surface Lattice Distortion of Anatase TiO₂ during Photocatalytic Progress: A HRTEM Study**

Zhang J.¹, Zhang Y.¹, Lei Y.¹, Pan C.^{1,2*}; ¹School of Physics and Technology and Key Laboratory of Artificial Micro- and Nano-structures of Ministry of Education, Wuhan University, Wuhan, P R China; ²Center for Electron Microscopy, Wuhan University, Wuhan 430072, P R China; cspan@whu.edu.cn

----- Break (15:00-15:40) -----

Chair: Jinhua Ye**0530 15:40-16:05****Chia-Min Yang (IS)****Design and Nonaqueous Syntheses of Titania-based Materials for Photocatalytic Applications**

Chia-Min Yang*, Chia-Hsiu Chen, Yu-Fen Wang and Yu-Chuan Hsu; Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan; cmyang@mx.nthu.edu.tw

0206 16:05-16:20 K. Yamamoto**One-step hydrothermal synthesis of metastable phase bronze type TiO₂ and the water splitting activity**

K. Yamamoto¹, K. Tomita², Y. Miura^{1,2}, M. Kakihana³; ¹Graduate School of Science and Technology, Tokai University, 4-1-1 Kitakaname, Hiratsuka, Kanagawa 259-1292, Japan; ²School of Science, Tokai University, 4-1-1 Kitakaname, Hiratsuka, Kanagawa 259-1292, Japan; ³Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai, Miyagi 980-8577, Japan; Graduate School of Science and Technology, Tokai University, 4-1-1 Kitakaname, Hiratsuka, Kanagawa 259-1292, Japan; tomita@keyaki.cc.u-tokai.ac.jp

1036 16:20-16:45**Yusuke Yamauchi (IS)****Rational Design of Nanoporous Platinum**

Yusuke Yamauchi^{1,2,3*}; ¹World Premier International (WPI) Research Center for Materials Nanoarchitectonics (MANA), National Institute for

Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan; ²Faculty of Science and Engineering, Waseda University, 3-4-1 Okubo, Shinjuku, Tokyo 169-8555, Japan; ³Precursory Research for Embryonic Science and Technology (PRESTO), Japan Science and Technology Agency (JST), 4-1-8 Honcho, Kawaguchi, Saitama 332-0012, Japan; *Yamauchi.Yusuke@nims.go.jp

0751 16:45-17:00 K. C. Ho

A Novel Pt Structure with High Surface Area as a Counter Electrode for Dye-Sensitized Solar Cells

C. C. Wang¹, H. W. Chen¹, K. C. Huang¹, J. G. Chen¹, C. Y. Liu¹, R. Vittal¹, and K. C. Ho^{1,2*}; ¹Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan; ²Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan; *kcho@ntu.edu.tw

2011/9/21

Chair: Yusuke Yamauchi

1039 10:45-11:15 Pengyi Zhang (IS)

Simultaneous removal of formaldehyde and ozone by modified TiO₂ under VUV irradiation

Pengyi Zhang^{*}, Pingfeng Fu, Lili Tang, and Wei Xu; State Key Joint Laboratory of Environment Simulation and Pollution Control, School of Environment, Tsinghua University, Beijing, China; zpy@tsinghua.edu.cn

0854 11:15-11:30 Kuo-Chuan Ho

Electrophoretic Deposition of Mesoporous TiO₂ Nanocrystallites (MTNs) Film for Plastic-based Flexible Dye-Sensitized Solar Cells

H. W. Chen¹, J. G. Chen¹, K. C. Ho^{1,2*}; ¹Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan; ²Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan; *kcho@ntu.edu.tw

0135 11:30-11:45 Yi-Fang Lin

Surface Modification on CdS Nanowires for Modulation of Charge Carrier Dynamics

Yi-Fang Lin and Yung-Jung Hsu^{*}; Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan 30010, R.O.C.; *yhsu@cc.nctu.edu.tw

0139 11:45-12:00 Meng-Yu Chen

Simultaneous Decoration of ZnO on ZnSe Nanorods in Cation Exchange Process

Meng-Yu Chen and Yung-Jung Hsu^{*}; Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan 30010, R.O.C.; yhsu@cc.nctu.edu.tw

----- Lunch (12:00-13:40) -----

Chair: Jow-Lay Huang

1084 13:40-14:05

Anthony S.T. Chiang (IS)

Low reflection photocatalytic coating on glass for solar applications

Anthony S.T. Chiang^{1*}, Wen-Chuan Liu², and Chien-Kuo Huang²; ¹Dept. Chem. Mater. Eng, National Central University, Chung-Li, Taiwan; ²ONID Technologies, Taipei, Taiwan; *stchiang@cc.ncu.edu.tw

0477 14:05-14:20 Yan-Gu Lin

Investigation of Carbon-Modified ZnO Nanostructures for Solar-Hydrogen Application

Y. G. Lin¹, Y. C. Chen¹, Y. K. Hsu², L. C. Chen^{1*}, and K. H. Chen^{1,3*}; ¹Center for Condensed Matter Sciences, National Taiwan University, Taipei 106, Taiwan; ²Department of Opto-Electronic Engineering, National Dong Hwa University, Hualien, 97401, Taiwan; ³Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei 106, Taiwan; chenlc@ntu.edu.tw, chenkh@pub.iam.ssinica.edu.tw

0324 14:20-14:35 Chun-Lin Kuo

The Ag-In-S Polycrystalline Films Deposited By Ultrasonic Chemical Bath Deposition (UCBD) for Water Splitting

Chun-Lin Kuo¹, Chin-Chen Wu², Chang-Chung Yang², Jin-Hua Huang¹, Wen-Sheng Chang^{2*}; ¹Department of Materials Science and Engineering, National Tsing Hua University, 101, Sec. 2, Kuang-Fu Road, Hsinchu, 300, Taiwan; ²Green Energy and Environment Research Laboratories, Industrial Technology Research Institute, 195 Sec. 4, Chung-Hsing Road, Hsin-Chu 310, Taiwan; chang0719@itri.org.tw

0638 14:35-14:50 Te-Fu Yeh

Photocatalytic Activities of Graphite Oxide with Different Oxygen Contents for Water Reduction and Oxidation under Illumination

Te-Fu Yeh and Hsisheng Teng^{*}; Department of Chemical Engineering and Center for Micro/Nano Science and Technology, National Cheng Kung University, Tainan 70101, Taiwan; *hteng@mail.ncku.edu.tw

----- Break (15:00-15:40) -----

Chair: Shiaw-Tseh Chiang**0149 15:40-15:55 An T. Nguyen****Synthesis of Selenide Nanorods through Cation Exchange Reaction**

An T. Nguyen, Yau-De Chiou, and Yung-Jung Hsu^{*};
 Department of Materials Science and Engineering, National
 Chiao Tung University, Hsinchu, Taiwan 30010, R.O.C.;
^{*}yhsu@cc.nctu.edu.tw

0786 15:55-16:10 Kazuhisa Kishida**Enhancement of photocatalytic activity of Ta₃N₅ for H₂ evolution by ammonothermal treatment**

Kazuhisa Kishida¹, Tomoaki Watanabe^{1*}, ¹Applied Chemistry,
 Meiji University, Kawasaki, Japan;
^{*}tomowata@isc.meiji.ac.jp

0984 16:10-16:25 S. Suresha**Hydrothermal Synthesis and Photocatalytic Studies of in situ surface modified Silver Doped ZnO Nanoparticles**

K. Namratha, S. Suresha¹ and K. Byrappa^{*}; Crystal
 Growth and Materials Science Laboratory, P.B.
 No.21; ¹Department of Environmental Science,
 Yuvaraja's College, University of Mysore, Mysore –
 570 006, India; ^{*}kbyrappa@gmail.com

0615 16:25-16:40 Chia-Che Chuang**Phase Separation Phenomenon and Mechanism of Ce_xZr_{1-x}O₂ Powders Prepared by Coprecipitation Method**

Chia-Che Chuang^{1*}, Hsing-I Hsiang¹ and Fu-Su
 Yen¹; ¹Particulate Materials Research Center,
 Department of Resources Engineering, National
 Cheng Kung University, No.1 University Road,
 Tainan 70101, Taiwan;
^{*}n4895105@mail.ncku.edu.tw

Symposium A6

Conference Room: 626

2011/9/21**0618 13:40-14:00 J. D. Y. Ou (IS)****Green-Chemistry Manufacturing with Shape-Selective Catalysts for the Petrochemical Industry**

J. S. Beck and J. D. Y. Ou; ExxonMobil, Houston, Texas,
 U.S.A.

0883 14:00-14:15 Katsuyoshi Oh-ishi**Electrostatic Potentials of Li₄SiO₄ Applied for Carbon Dioxide Absorbent**

R. Kobayashi^{1*}, K. Oh-ishi¹, and M. Yoshimura^{2,3};
¹Department of Applied Chemistry, Faculty of Science and
 Engineering, Chuo University, Tokyo, Japan; ²Materials and
 Structures Laboratory, Tokyo Institute of Technology,
 Yokohama, Japan; ³National Cheng Kung University, Tainan
 City, Taiwan; *1-13-27, Kasuga, Bunkyo-ku, 112-8551,
 Tokyo, Japan; r-koba@kc.chuo-u.ac.jp

0118 14:15-14:30 W.-J. Huang**Application of Bamboo Powder as Soil Conditioning Additives**

Y. P. Huang¹ O. Varela², Y. J. Liou³, W.-J. Huang^{4*}, Y. C.
 Yeah⁵, J. Y. Chiu⁶, C. H. Lin⁷; ¹ITRI South, Industrial
 Technology Research Institute, Rm. 611, No. 8, Gongyan Rd.,
 Liujia Shiang, Tainan County 73445, Taiwan (R.O.C.); ^{2,3,4,5,}

^{6,7}National Pingtung University of Science and
 Technology, Dept. of Environ. Eng. & Sci., Room
 EP107, 1, Hsiuh Fu Road, NeiPu, 912, Pingtung,
 TAIWAN (R.O.C.); ^{*}wjhuang@mail.npust.edu.tw

0890 14:30-14:50 Wei-Ping Pan (IS)**Copper-based Oxygen Carriers for Coal-fueled Chemical Looping**

Hou-Yin Zhou, Yan Cao and Wei-Ping Pan; Institute
 for Combustion Science and Environmental
 Technology, Western Kentucky University, Bowling
 Green, KY 42101, USA

0715 14:50-15:05 Chung-Sung Tan**Grafting of 3-Aminopropyl Triethoxysilane onto SBA-15 in Supercritical Propane for CO₂ Capture**

Worasaung Klinthong, Zih-He Wu, Chih-Hung
 Huang, and Chung-Sung Tan^{*}; Department of
 Chemical Engineering, National Tsing Hua
 University, Hsinchu 30013, Taiwan, ROC; *No. 101,
 Section 2, Kuang-Fu Road, Hsinchu, Taiwan 30013,
 R.O.C., cstan@che.nthu.edu.tw

----- Break (15:05-15:40) -----

0059 15:40-15:55 Cheng-Tung Chou
CO₂ capture from syngas of water-gas-shift reactor at mid-high temperature by pressure swing adsorption
Yu-Hau Shih and Cheng-tung Chou* ; Department of Chemical and Materials Engineering, National Central University, Jhong-Li, Taiwan; * t310030@ncu.edu.tw

0573 15:55-16:10 Pen-Chi Chiang
Development of a CO₂ Sequestration Process Utilizing the Carbonation of Alkaline Solid Waste
Shu-Yuan Pan¹, Yi-Hung Chen², E-E Chang³, Hsiao-Wen Chu¹, and Pen-Chi Chiang^{1*}; ¹Graduate Institute of Environmental Engineering, National Taiwan University, Taipei, Taiwan; ²Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei, Taiwan; ³Department of Biochemistry, Taipei Medical University, Taipei, Taiwan; *pcchiang@ntu.edu.tw

0448 16:10-16:25 Liang-Yi Lin
A green approach for recovery of mesoporous silicas from photonic industrial waste powder for CO₂ capture
Liang-Yi Lin¹ and Hsunling Bai^{2*}; Institute of Environmental Engineering, National Chiao Tung University, Hsinchu 300, Taiwan;
*hlbai@mail.nctu.edu.tw

0015 16:25-16:45
Steven S. Chuang (IS)
Organic/Inorganic Hybrids for CO₂ Capture
Steven S. C. Chuang, Mathew Isenberg, Ernesto Silva Mojica; FirstEnergy Advanced Energy Research Center, Department of Chemical and Biomolecular Engineering, The University of Akron

Symposium A7

Conference Room: 429

2011/9/20

13:25-13:30 Opening Remark by C.H. Tsai
(Chairman, The Atomic Energy Council)

0117 13:30-14:20 H. T. Tang (IS)
EFFECTS OF IRRADIATION ON LWR INTERNALS
H.T. Tang, Raj Pathania, Robert Carter, Anne Demma, EPRI, United States

1429 14:20-14:45 CHANGHEUI JANG
Oxidation and Creep Properties of Alloy 617 in Helium Environments
Jahyun Koo¹ Donghoon Kim¹ Daejong Kim² *Changheui Jang¹; ¹ Department of Nuclear and Quantum Engineering, Korea Advanced Institute of Science and Technology (KAIST); ² Nuclear materials Division, Korea Atomic Energy Research Institute (KAERI); CHJANG@KAIST.AC.KR

0552 14:45-15:10 J. Y. Huang
Environmentally Assisted Cracking Behavior of Dissimilar Metal Weldments in Simulated BWR Coolant Environments
J. Y. Huang*, M. F. Chiang, S. L. Jeng, J. S. Huang, and R. C. Kuo; Institute of Nuclear Energy Research, Nuclear fuels and materials department, Lung-Tan, Taoyuan, Taiwan, P O Box 3-14, 1000 Wenhua Road, Lung-Tan, Taoyuan, Taiwan; *jyhuang@iner.gov.tw.

----- Break (15:10-15:40) -----

0211 15:40-16:05 Hsiao-Hung Hsu
Effect of hydrogen embrittlement on recrystallized Zircaloy-4 cladding
Hsiao-Hung Hsu^{1*}, Wen-Chen Liao¹; ¹Institute of Nuclear Energy Research (INER), Lungtan Township, Taoyuan County 325, Taiwan; *No. 1000, Wenhua Rd., Jiaan Village, Longtan Township, Taoyuan County 32546, Taiwan;
hhhsu@iner.gov.tw

0730 16:05-16:30 Yongqiang WANG
Corrosion Behavior of Thermally Aged Duplex Stainless Steel for Primary Coolant Pipes of Nuclear Power Plant
Yongqiang WANG*, Bin YANG; State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, China; State Key Laboratory for Advanced Metals and Materials, 30 Xueyuan Road, Haidian District, Beijing, 100083, China;
wangyongqiang1124@163.com

0174 16:30-16:55 Xitao Wang

Microstructure evolution and fracture behavior of Z3CN20-09M stainless steel after long-time thermal aging
 Xitao Wang^{1*}, Shilei Li¹, Yanli Wang¹, Shuxiao Li¹, Fei Xue²;
¹State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, Beijing, China;
²Suzhou Nuclear Power Research Institute, China Guangdong Nuclear Power Group, Suzhou, China; *xtwang@ustb.edu.cn

2011/9/21**1011 10:45-11:35 Hua-Tay Lin (IS)**

SiC Composites for Next Generation Nuclear Structural Applications

Hua-Tay Lin; Ceramic Science and Technology Group, Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6068, USA; linh@ornl.gov

0157 11:35-12:00 E-Wen Huang

A Synchrotron X-ray Study on the Wigner Effect of the Nuclear-grade Graphite

E-Wen Huang^{1*}, Chung-Kai Chang¹, Ji-Jung Kai² and Shuo-Cheng Tsai²; ¹Department of Chemical and Materials Engineering, National Central University, Zhongli City, Taiwan, R.O.C.; ²Department of Engineering and System Science, National Tsing Hua University, Hsinchu County, Taiwan, R.O.C.; *No.300, Zhongda Rd., Zhongli City, Taoyuan County 32001, Taiwan R.O.C.; ewhuang@ncu.edu.tw

----- Lunch (12:00-13:40) -----

0905 13:40-14:05 Qiang Guo

Structures and Properties of PEEK/PEI/PES Plastic Alloys Blent by Extrusion Molding as Insulating Jacketing of the Cable Used for Nuclear Power Station

CHEN Jianbing^{1,2}, GUO Qiang^{1*}, ZHAO Zhengping¹, DUAN Chunlai³, WANG Xiaoming³; ¹School of Materials Science and Engineering, Shanghai University, Shanghai 201800, China; ²Department of Chemistry and Food Science, Chizhou College, Chizhou 247000, China; ³Shanghai Electric Cable Research Institute, Shanghai 200093, China; * 20 Chengzhong Rd., Jiading District, Shanghai, China; guoq@shu.edu.cn

0961 14:05-14:30 Ji-Jung Kai

New method to quantifying the Helium bubbles in SiCf/SiC composites irradiated under simulated Fusion Reactor conditions

Ko-Feng Chen¹, Chien-Hung Chen² and Ji-Jung Kai^{3*};
^{1,2,3}Institute of Nuclear Engineering and Science, National Tsing-Hua University, Hsinchu 30013, Taiwan; ³Department of Engineering and System Science, National Tsing-Hua University, Hsinchu 30013, Taiwan; *jjkai@ess.nthu.edu.tw

0383 14:30-14:55 Pingfang Shi

Thermodynamic Investigations on Materials Corrosions in Nuclear Power Applications and Nuclear Waste Managements

Pingfang Shi^{1*}, Anders Engström¹, Johan Bratberg¹ and Bo Sundman²; ¹Thermo-Calc Software AB, Norra Stationsgatan 93, SE-113 64 Stockholm, Sweden; ²Dept. of Materials Sci. & Eng., Royal Inst. of Tech. (KTH), SE-100 44 Stockholm, Sweden; *Thermo-Calc Software AB, Norra Stationsgatan 93, SE-113 64 Stockholm, Sweden; pingfang@thermocalc.se

----- Break (15:00-15:40) -----

0204 15:40-16:05 Clinton Fong

On-line Monitoring Technique of Erosion-Corrosion of Pipe Walls

Tsung-Kuang Yeh¹, Tai-Liang Kuo², Yi-Ching Lee², and Clinton Fong^{2*}; ¹Institute of Nuclear Engineering and System Science, National Tsing Hua University; ²Material and Chemical Research Laboratories, Industrial Technology Research Institute, Hsinchu, Taiwan.

1432 16:05-16:30 W. S. Chen

Effects of Aluminizing Treatment on High-temperature Air-oxidation Resistance of a Ni-based Superalloy (Hastelloy X)

W. Kai^{1*}, W.S. Chen¹, C.H. Tsai¹, and J.J. Kai²;
¹Institute of Materials Engineering, National Taiwan Ocean University, Keelung, 20224 Taiwan, ROC.; ²Department of System Engineering and Science, National Tsing Hua University, Hsinchu, 30050, Taiwan, ROC.; * wkai@mail.ntou.edu.tw

0240 16:30-16:55 Tsung-Kuang Yeh
ELECTROCHEMICAL CHARACTERISTICS OF ZrO₂ TREATED TYPE 304 STAINLESS STEELS WITH VARIOUS AMOUNTS OF HYDROGEN PEROXIDE IN HIGH TEMPERATURE PURE WATER

Tsung-Kuang Yeh^{*1,2}, Po-I. Wu¹, and Chuen- Horng Tsai^{1,2}; ¹Institute of Nuclear Engineering and Science, National Tsing Hua University, Hsinchu, Taiwan; ²Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan; *tkyeh@mx.nthu.edu.tw

16:55-17:00 Closing Remark

Symposium B1+B2

Conference Room: 504c

2011/9/20

0841 13:40-14:10 Evelyn Yim (IS)

Regulation of Cell behavior using Substrate Topography for Tissue Engineering Applications

Evelyn Yim^{1,2,3*}, Benjamin Kim Kiat Teo^{1,2}, Chong Hao Yap², Stephanie KOO^{1,2}, Aung Aung Kywe Moe⁴, Soneela Ankam², Sandy Lim⁴, ¹Division of Bioengineering, National University of Singapore, Singapore, Singapore; ²Mechanobiology Institute Singapore, National University of Singapore, Singapore, Singapore; ³Department of Surgery, National University of Singapore, Singapore, Singapore; ⁴Duke-NUS Graduate Medical School Singapore, Singapore, Singapore;

* Evelyn Yim, Division of Bioengineering, National University of Singapore, EA-03-12, 9 Engineering Drive 1, Singapore 117576; eyim@nus.edu.sg

0777 14:10-14:25 Ying-Chih Liao

Patterning Cell Cultures on Biodegradable Substrates by Inkjet Technology

Jiasheng Yu¹, Yun-Ting Ma¹, Yan-Tsai Yi¹, Jing-Yu Lin¹, Hao-Ming Hsiao², Ying-Chih Liao^{1*}; ¹Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan; ²Department of Mechanical Engineering, National Taiwan University, Taipei, Taiwan; *#1 Sec. 4 Roosevelt Rd., Taipei, Taiwan; liao@ntu.edu.tw

0582 14:25-14:40 Yung Chang

Bioadhesive Control of Hematopoietic Stem Cells from the Interface Derivatized with Zwitterionic Polymer Nanosegments

Yung Chang^{1*} and Akon Higuchi^{2*}; ¹R&D Center for Membrane Technology and Department of Chemical Engineering, Chung Yuan Christian University, Zhong-Li, Taoyuan 320, Taiwan; ²Department of Chemical and Materials Engineering, National Central University, Zhong-Li, Taoyuan 320, Taiwan; *ychang@cycu.edu.tw; higuchi@cc.ncu.edu.tw

0928 14:40-14:55 Bo Zhu

Spatially Confined Layer-by-Layer Electro-deposition to Produce Bio-function Patterning on All-Conducting-Polymer Substrate

Bo Zhu, Shyh-Chyang Luo, Jun Sekine, and Hsiao-hua Yu; Yu Initiative Research Unit, RIKEN Advanced Science Institute, 2-1 Hirosawa, Wako, Saitama, 351-0198, Japan; bzhu@riken.jp

----- Break (15:00-15:40) -----

0533 15:40-16:10 Doo Sung Lee (IS)
pH-Responsive Nanoparticles for Theranostics of Ischemic Cerebral Area

Doo Sung Lee^{1*}, Guang hui Gao², Jung Hee Lee³; ¹Department of Polymer Science and Engineering, Sungkyunkwan University, Suwon, Korea; ²Department of Polymer Science and Engineering, Sungkyunkwan University, Suwon, Korea; ³School of medicine, Sungkyunkwan University, Suwon, Korea; * dslee@skku.edu

0559 16:10-16:25 Chuan Yang
Supramolecular nanostructures designed for high cargo loading capacity and kinetic stability

Chuan Yang¹, Jeremy P.K. Tan¹, Wei Cheng¹, Amalina Attia¹, Chloe Y.T. Tan¹, Alshakim Nelson², James Hedrick² and Yi-Yan Yang^{1*}; ¹Institute of Bioengineering and Nanotechnology, Singapore; ²IBM Almaden Research Center, United States; * yyyang@ibn.a-star.edu.sg

0762 16:25-16:40 Ming-Fa Hsieh
Transdermal Administration of Anti-oxidative Catechins through Chemically-modified Cellulose Membrane

Ming-Fa Hsieh^{*}, Chao-Hsuan Chen, Yi-Nung Ho; Department of Biomedical Engineering, Chung Yuan Christian University, Chung Li, Taiwan, R.O.C.; No. 200, Chung Pei Rd., Chung Li, Taiwan, R.O.C.; [mfhsieh@cycu.edu.tw](mailto:mfhhsieh@cycu.edu.tw)

0106 16:40-16:55 Ting-Yu Shih
Tailoring Degradation and Mechanical Properties of Modified Poly(ϵ -caprolactone) for Dural Substitutes Application

Ting-Yu Shih, Jean-Dean Yang, Jui-Hsiang Chen; Department of Biomedical Materials, Industrial Technology Research Institute, 321, Sec 2 Kuang Fu Rd, Hsinchu, Taiwan.; tingyu@itri.org.tw

2011/9/21

0702 10:45-11:15

Po-Chun Chang (IS)

Fabrication of PDGF-Simvastatin Double-Walled PLGA-PLA Microspheres for Dentoalveolar Regeneration

Po-Chun Chang^{1,2*}, Min-Chun Chung¹, and Chi-Hwa Wang³; ¹Department of Preventive Dentistry, Faculty of Dentistry, National University of Singapore, Singapore, Singapore; ²Department of Preventive Dentistry, University Dental Cluster,

National University Hospital, Singapore, Singapore;
³Department of Chemical and Biomolecular Engineering,
 Faculty of Engineering, National University of Singapore,
 Singapore, Singapore; 11 Lower Kent Ridge Road, Singapore
 119083, Singapore; pnccpc@nus.edu.sg

1021 11:15-11:30 Shuchen Hsieh
Agar encapsulated magnetite nanoparticle synthesis for biomedical applications

Shuchen Hsieh^{1*}, Pei-Ying Lin¹, Hsuan-Hung Chou¹,
 Chiung-Wen Hsieh¹, Shu-Ling Hsieh², Chih-Chung Wu³,
 Chun-Hsin Wu⁴, Yun-Shan Huang⁵, and Huay-Min Wang⁶;
¹Department of Chemistry, National Sun Yat-sen University,
 Kaohsiung 80424, Taiwan; ²Department of Seafood Science,
 National Kaohsiung Marine University, Kaohsiung 81157,
 Taiwan; ³Department of Nutrition and Health Sciences,
 Chang Jung Christian University, Tainan 71101, Taiwan;
⁴Department of Computer Science and Information
 Engineering, National University of Kaohsiung, Kaohsiung,
 Taiwan; ⁵Department of Food Science and Technology, Tajen
 University, Pingtung 90741, Taiwan; ⁶Kaohsiung Veterans
 General Hospital, Kaohsiung 81362, Taiwan; *70 Lien Hai
 Rd, Kaohsiung, Taiwan 80424; shsieh@facmail.nsysu.edu.tw

0843 11:30-11:45 Hao-Ming Hsiao
Hemodynamic Simulation of Intra-stent Blood Flow
 Kuang-Huei Lee¹, Ying-Chih Liao², Yu-Chen Cheng³, and
 Hao-Ming Hsiao^{1*}; ¹Department of Mechanical Engineering,
 National Taiwan University, Taipei, Taiwan; ²Department of
 Chemical Engineering, National Taiwan University, Taipei,
 Taiwan; ³School of Medicine, Taipei Medical University,
 Taipei, Taiwan; *hmsiao@ntu.edu.tw

0738 11:45-12:00 Yu-Ju Chang
A Novel Platform for Investigation Mechanical Tension on Neurite Sprouting and Axon Elongation
 Yu-Ju Chang¹, Fan-Gang Tseng², Cho-Jen Tsai¹, Tzu-Wei
 Wang^{1*}; ¹Department of Materials Science and Engineering,
 National Tsing Hua University, Hsinchu, Taiwan;
²Department of Engineering and System Science, National
 Tsing Hua University, Hsinchu, Taiwan;
 *twwang@mx.nthu.edu.tw

----- **Lunch (12:00-13:40)** -----

0571 13:40-14:10 Roger W. Chan (IS)
Biologic Scaffolds for Laryngeal Tissue Engineering
 Roger W. Chan^{1*}; ¹Biomedical Engineering, University of
 Texas Southwestern Medical Center, Dallas, Texas
 75390-9035, U. S. A.; * roger.chan@utsouthwestern.edu

0652 14:10-14:25 Hui-Min Wang
Construction of a 3D human skin co-culture of epidermal and dermal cells
 Yi-Ting Chou and Hui-Min Wang^{*}; ^{*}Department of Fragrance
 and Cosmetic Science, Kaohsiung Medical University; ^{*}100,
 Shih-Chuan 1st Road, San-Ming District, Kaohsiung 807,
 Taiwan (R.O.C); davidw@kmu.edu.tw

0335 14:25-14:40 Yun-Chiao Huang
Synthesis and Characterization of Amphiphatic Carboxymethyl Chitosan-graft-Poly(α -benzyl-glutamic acid)

Yun-Chiao Huang and Jeng-Shiung Jan^{*};
 Department of Chemical Engineering, National
 Cheng Kung University
 No 1, University Rd., Tainan 70101, Taiwan;
jsjan@mail.ncku.edu.tw

0788 14:40-14:55 Tzu-Yun Cheng
Immediate Hemostasis and Tissue Regeneration with Functionalized Self-assembling Peptides in a Rat Liver Model

Tzu-Yun Cheng¹, Ming-Yuan Huang², Chao-Hsiung
 Lee², Wen-Han Chang², Tzu-Wei Wang^{1*};
¹Department of Material Science and Engineering,
 National Tsing Hua University, Hsinchu, Taiwan;
²Mackay Memorial Hospital, Taipei, Taiwan;
 *twwang@mx.nthu.edu.tw

----- **Break (15:00-15:40)** -----

0764 15:40-15:55 Li Kaikai
Preparation and characterization of calcium phosphate coating on ZK60 alloy for biomaterial application
 Li Kaikai^{*}, Wang Bing, and Yan Biao; Shanghai
 Key Lab. of D&A for Metal-Functional Materials,
 School of Materials Science and Engineering,
 Tongji University, Shanghai, China, 201804; *Room
 324, School of Materials Science and Engineering,
 Tongji University, Cao'an Road 4800#, Jia-Ding
 District, Shanghai 201804, China.

0406 15:55-16:10 S.SRIKANTASWAMY
Biodegradation of dyes in aqueous solution using fungi
 S.SRIKANTASWAMY^{*}, VIVEK.K,
 SHIVAKUMAR. D and K.BYRAPPA^a; Department
 Of Studies In Environmental Science, University Of
 Mysore, Manasagangotri, Mysore-570006,
 Karnataka, India And ^aDepartment Of Studies In
 Earth Science University Of Mysore,
 Manasagangotri, Mysore-570006, Karnataka, India;
srikantas@hotmail.com

0319 16:10-16:25 Yu-Yu Tsai
Reducing the In Vitro Cytotoxicity of Calcium Sulfate Bone Graft Tablet by Using Water Vapor Method

Yu-Yu Tsai¹, Sea-Fue Wang¹, Shu-Ting Kuo²,
 Wei-Hsing Tuan²; ¹Graduate Institution of
 Engineering Technology-Doctoral, National Taipei
 University of Technology, Taipei 10608, Taiwan;
²Department of Materials Science and Engineering,

National Taiwan University, Taipei 10617, Taiwan;
[*t5679029@ntut.edu.tw](mailto:t5679029@ntut.edu.tw)

0804 16:25-16:40 Ying-Sui Sun
In Vitro Corrosion Resistance and Biocompatibility of Hydroxyapatite/Tantalum Pentoxide Double Coatings on Titanium

Ying-Sui Sun¹, Jing-Heng Chang², and Her-Hsiung Huang^{3*};
¹Department of Oral Biology, National Yang-Ming University, Taipei, Taiwan; ²Dental Department, Cheng Hsin General Hospital, Taipei, Taiwan; ³Department of Dentistry, National Yang-Ming University, Taipei, Taiwan; *No.155, Sec.2, Li-Nong Street, Taipei 112, Taiwan; hhuang@ym.edu.tw

2011/9/22

1025 09:30-10:00 Feng-Huei Lin (IS)
Thermo-sensitive Hydrogel on Nucleus Pulposus Regeneration; Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; Director, Division of Biomed. Eng., National Health Research Institute, Taiwan; No1, Sec. 1, Jen - Ai Rd., Taipei 100, Taiwan (R.O.C); double@ntu.edu.tw

0818 10:00-10:30 Qiqing Zhang (IS)

A novel naturally sourced calcium phosphate porous scaffolds for bone tissue engineering
Yun Yang¹, Qingqing Yao¹, Ximing Pu¹, Qiqing Zhang^{1,2*}; ¹Department of Materials Science and Engineering, College of Materials, Xiamen University, Xiamen 361005, China; ²Institute of Biomedical Engineering, Chinese Academy of Medical Sciences, Peking Union Medical College, The Key Laboratory of Biomedical Material of Tianjin, Tianjing 300192, China; *Department of Materials Science and Engineering, College of Materials, Xiamen University, Xiamen 361005, China; zhangqiq@xmu.edu.cn

0930 10:30-10:45 Hai-chao Zhao
Novel Zwitterionic Conducting Polymer with Controllable Protein Absorption

Hai-chao Zhao, Shyh-Chyang Luo, Hsiao-hua Yu; Yu Initiative Research Unit, Riken Advanced Science Institute, 2-1 Hirosawa, Wako, Saitama, Japan, 351-0198; haichaozhao@riken.jp

Symposium B3

Conference Room: 501

2011/9/20

Chairs: M. Yoshimura & A. Rogach

0822 13:40-14:20 Yukio Nagasaki (KS)

Fullerene as Bionanomaterials
Yukio Nagasaki; Department of Materials Science, Graduate School of Pure and Applied Sciences, and Master's School of Medical Sciences, University of Tsukuba, Satellite Laboratory of International Center for Materials Nanoarchitectonics, Ten-noudai 1-1-1, Tsukuba, Ibaraki 305-8573, Japan; yukio@nagalabo.jp

0862 14:20-15:00 Jackie Y. Ying (KS)

Nanostructure Processing of Advanced Biomaterials
Jackie Y. Ying; Institute of Bioengineering and Nanotechnology, 31 Biopolis Way, The Nanos, Singapore 138669; jyying@ibn.a-star.edu.sg

----- Break (15:00-15:40) -----

Chairs: J Y Ying & K. Soga

0958 15:40-16:05 A. Rogach (IS)

Semiconductor quantum dots in biolabeling and biosensing
Andrey L. Rogach; Department of Physics and Materials Science & Centre for Functional Photonics (CFP), City

University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong SAR;
andrey.rogach@cityu.edu.hk

0948 16:05-16:20 J. H. Choy
DNA@Inorganic Core-Shell Hybrid for Nano-forensics

J. H. Choy; Center for Intelligent Nano-Bio Materials (CINBM), Department of Chemistry and Nano Science and Department of Bioinspired Science, Ewha Womans University, Seoul, Korea; jhchoy@ewha.ac.kr

0170 16:20-16:35 Eva Hemmer
NIR-Emitting Gadolinium Oxide Nanostructures for Bioimaging Applications

E. Hemmer^{1,2*}, T. Yamano³, H. Kishimoto^{1,3}, N. Venkatachalam², H. Hyodo², and K. Soga^{1,2}; ¹Center for Technologies against Cancer (CTC), Tokyo University of Science, Noda, Japan; ²Department of Materials Science and Technology, Tokyo University of Science, Noda, Japan; ³Research Institute for Biological Sciences (RIBS), Tokyo University of Science, Noda, Japan; *eva.hemmer@sogalabo.jp

2011/9/21**Chairs: J-H Choy & H. Kawaguchi****0858 10:45-11:10 Atsushi Maruyama (IS)**
Cationic Comb-type Copolymers as Bio-transformers for Biomolecular NanomachinesAtsushi Maruyama; Institute for Materials Chemistry and Engineering, Kyushu University, Fukuoka, Japan;
maruyama@ms.ifoc.kyushu-u.ac.jp**0640 11:10-11:35 Kentaro Kogure (IS)**
Development of a flexible siRNA carrier penetrable into tumorKentaro Kogure^{1,2*}, Yuri Shimatani¹, Kohei Uno¹ and Susumu Hama^{1,2}; ¹Kyoto Pharmaceutical University, 5 Nakauchi-cho, Misasagi, Yamashina-ku, Kyoto 607-8414, Japan; ²CREST Japan Science and Technology Agency (JST), Japan; *kogure@mb.kyoto-phu.ac.jp**0224 11:35-12:00 Haruma Kawaguchi (IS)**
Polymer Particles Having Molecule-Imprinted Skin Layer
Haruma Kawaguchi^{1,2}, Hiroshi Ugajin², Norio Ueno³, and Tohru Okamoto³; ¹Kanagawa University (Graduate School of Engineering, Yokohama, Japan); ²Keio University (Graduate School of Engineering, Yokohama, Japan); ³Shiseido Co.Ltd. (Yokohama, Japan)*3-27-1 Rokkakubashi, Yokohama 221-8686 Japan;
haruma@kanagawa-u.ac.jp

----- Lunch (12:00-13:40) -----

Chairs: A. Maruyama & I. Yamashita**0868 13:40-14:20 J. H. Choy (KS)**
Lattice Engineered Bio-Nanohybrids for Boron Neutron Capture TherapyJ. H. Choy; Center for Intelligent Nano-Bio Materials (CINBM), Department of Chemistry and Nano Science and Department of Bioinspired Science, Ewha Womans University, Seoul, Korea; jhchoy@ewha.ac.kr**0700 14:20-14:45 Jae-Min Oh (IS)**
Polyphenol-inorganic nanohybrids for controlled release delivery system; Jae-Min OH; Department of Chemistry and Medical Chemistry, College of Science and Technology, Yonsei University, Wonju, Gangwondo, 220-710, Korea; jaemin.oh@yonsei.ac.kr**0273 14:45-15:00 Haruma Kawaguchi**
Highly Sensitive Protein Microarray Composed of Novel Protein HydrogelHiroyuki Tanaka¹ and Haruma Kawaguchi^{2*}; Mitsubishi Chemical Group Science and Technology, INC (Yokohama, Japan); ²Kanagawa University (Graduate school of Engineering, Yokohama, Japan); *3-27-1 Rokkakubashi, Kanagawaku, Yokohama 221-8686 Japan;
haruma@kanagawa-u.ac.jp

----- Break (15:00-15:40) -----

Chairs: K. Kogure & J-M Oh**0502 15:40-16:05****Ichiro Yamashita (IS)****Protein-based nano-structure fabrication method: Bio Nano Process**Ichiro Yamashita^{1*}; ¹Graduate School of Materials Science, Nara Institute of Science and Technology ARRL Panasonic Corporation, 8916-5 Takayama-cho Ikoma, Japan; ichiro@ms.naist.jp**0424 16:05-16:30 T. Ichiki (IS)****Microintaglio Printing Technology for Biomolecular Patterning**T. Ichiki^{1,2,3*}, M. Biyani^{1,3}, J. Moriyasu¹, R. Kobayashi¹, Y. Tanaka¹, and T. Akagi^{1,3};¹Department of Bioengineering, School of Engineering, The University of Tokyo, Tokyo, Japan;²Institute of Engineering Innovation, School of Engineering, The University of Tokyo, Tokyo, Japan;³Core Research of Evolutional Science and Technology, Japan Science and Technology Agency, Tokyo, Japan; *ichiki@sogo.t.u-tokyo.ac.jp**0057 16:30-16:45 Shang-Hsiu Hu**
Magnetically Double Emulsion Nanocapsules for Remotely Controlled DNA Release and Cancer Cell TargetingShang-Hsiu Hu, Po-Jung Chen, Wen-Ting Hung, Xiaohu Gao and San-Yuan Chen; Dept. of Materials Sciences and Engineering, National Chiao Tung University, Hsinchu, Taiwan;
sshow210@yahoo.com.tw**0885 16:45-17:00 Sam Yu**
Precise Measurement of Micro- and Nano-particle Concentration, Size and Surface Charge, with Particle-by-Particle Detail on Tunable NanoporeDr Sam Yu; IZON Science, 175 Roydvale Ave, Burnside, Christchurch 8543, New Zealand; The MacDiarmid Institute for Nanotechnology & Advanced Materials; sam.yu@izon.com**2011/9/22****Chairs: K. Byrappa & M. Takano****0639 09:00-09:25 T. Pradeep (IS)**
Luminescent Molecular Clusters of Noble MetalsT. Pradeep; Department of Chemistry, Indian Institute of Technology Madras, Chennai - 600 036, India; pradeep@iitmadras.ac.in

0952 09:25-09:50 Nguyen TK Thanh(IS)
Synthesis of Magnetic Nanoparticles for Biomedical Applications

Nguyen TK Thanh^{*}; ¹The Davy-Faraday Research Laboratory, The Royal Institution of Great Britain, 21 Albemarle Street, London W1S 4BS, UK, ²Department of Physics & Astronomy, University College London, Gower Street, London, WC1E 6BT, UK; *ntk.thanh@ucl.ac.uk

0263 09:50-10:15 Shinpei Yamamoto(IS)
Organo-Functionalized Nano- to Meso-Particles of α -Fe with Fortified Corrosion Resistance, Well-Defined Morphology, and Facile Dispersibility

S. Yamamoto^{*} and M. Takano; ¹Institute for Integrated Cell-Material Sciences, Kyoto University, Yoshida-Honmachi, Sakyo-ku, Kyoto, 606-8501 Japan; *yamamoto@icems.kyoto-u.ac.jp

0370 10:15-10:30 Atsuo Yasumori
Preparation of Localized Surface Plasmon Resonance Sensor by Using Super-Hemispherical Lens Loading Gold Nanoparticles

Shinichi Furusawa¹, Sayaka Yanagida^{1,2}, Tetsuo Kishi³ and Atsuo Yasumori^{1,2}; ¹Department of Materials Science and Technology, Tokyo University of Science, Chiba, Japan; ²Polyscale Technology Research Center, RIST, Tokyo University of Science, Chiba, Japan; ³Department of Chemistry and Materials Science, Tokyo Institute of Technology, Tokyo, Japan; *yasumori@rs.noda.tus.ac.jp

----- Break (10:30-10:45) -----

Chairs: NTK Thanh & S. Yamamoto

0976 10:45-11:10 K. Byrappa (IS)
Preparation, Characterization and Biological Activity of Selectively Doped ZnO Nanoparticles

K. Byrappa^{*}, K. Namratha¹, A. Jamuna Bai² and V. Ravishankar Rai²; ¹Crystal Growth and Materials Science Laboratory, ²Department of Studies in Microbiology, University of Mysore, P.B. No.21, Manasagangothri, Mysore570006, India; *kbyrappa@gmail.com

0934 11:10-11:35 Soo-Jin CHOI (IS)
Acute Toxicity and Toxicokinetic Studies of Inorganic Nanoparticles

Soo-Jin Choi and Jin-Ho Choy; Department of Food Science and Technology, Seoul Women's University, Seoul, South Korea; sjchoi@swu.ac.kr

0243 11:35-12:00 K. Namratha
Novel Solution Routes of Synthesis, Characterization and Antimicrobial Activity Study of Selectively Doped ZnO Designer Nanoparticles

K. Namratha¹, K. Byrappa^{*}, A. Jamuna Bai² and V. Ravishankar Rai²; ¹Crystal Growth and Materials Science Laboratory, University of Mysore, Department of Studies in Earth Science, P.B. No.21, Manasagangothri, Mysore570006,

India; ²Department of Studies in Microbiology, University of Mysore, Manasagangothri, Mysore570006, India; *kbyrappa@gmail.com

----- Lunch (12:00-13:40) -----

Chairs: T. Pradeep & S J Choi

0699 13:40-13:55 Gyeong-Hyeon Gwak
Evaluation of zinc oxide nanoparticles in simulated body fluid depending on the particle size and surface charge

Gyeong-Hyeon Gwak¹, Soo-Jin Choi², Myung-Chul Park³, Jin-Ho Choy^{*}, Jae-Min OH^{*}; ¹Department of Chemistry and Medical Chemistry, College of Science and Technology, Yonsei University, Wonju, Gangwondo, 220-710, Korea; ²Department of Food Science and Technology, Seoul Women's University, Seoul, 139-774, Korea; ³Center for Intelligent NanoBio Materials, Division of Nano Science BK21, Department of Bioinspired Science and Department of Chemistry and NanoScience, Ewha Womans University, Seoul, 120-750, Korea; jaemin.oh@yonsei.ac.kr

0705 13:55-14:10 Tae-Hyun Kim
Pore modification of hollow nanoporous silica for sustained release drug delivery system

Mi Hee Kim¹, Jae-Min Oh^{1*} and Jin-Ho Choy^{2*}; ¹Department of Chemistry and Medical Chemistry, College of Science and Technology, Yonsei University, Wonju, Gangwondo, 220-710- Korea; ²Center for Intelligent Nano-Bio Materials(CINBM), Department of Chemistry and Nano Sciences, Ewha Womans University, Seoul 120-750, KOREA; jaemin.oh@yonsei.ac.kr; jhchoy@ewha.ac.kr

0279 14:10-14:25 Kezheng Chen
Multifunctional $\text{Fe}_3\text{O}_4/\text{LnPO}_4:\text{Re}$ ($\text{Ln}=\text{Ce}, \text{Y}$; $\text{Re}=\text{Tb}, \text{Eu}$) Hybrid Spheres Designed For Bionanotechnological Applications

Kezheng Chen^{*}, Wei Wang, and Xuegang Yu; Lab of Functional and Biomedical Nanomaterials, College of Materials Science and Engineering, Qingdao University of Science and Technology, Qingdao 266042, China; *kchen@qust.edu.cn

0522 14:25-14:40 Hao Wang (SIS)
Growth of (0001)-Oriented Hydroxyapatite Nanorod Arrays on ZnO-Seeded Glass Substrate

Hao Wang^{1*}, ZhenZhen Lu¹, and HaiYan Xu²; ¹The College of Materials Science & Engineering, Beijing University of Technology, Beijing 100124, P. R. China; ²School of Materials & Chemical Engineering, Anhui University of Architecture, Hefei 230022, P. R. China; *haowang@bjut.edu.cn

Closing

Conference Room: 502

2011/9/21
Chairs: C. Rey & H. Fujimori
0733 10:45-11:10 Koji Ioku (IS)
Tailored Apatite for Regenerative Medicine

Koji Ioku^{1*} and Masanobu Kamitakahara¹; ¹Graduate School of Environmental Studies, Tohoku University, Sendai, Japan; *6-6-20 Aoba, Aramaki, Aoba-ku, Sendai 980-8579, Japan; ioku@mail.kankyo.tohoku.ac.jp

0088 11:10-11:35 Hiroaki Imai (IS)
Synthesis of Various Nanostructured Hydroxyapatites and Its Application to Control of Cellular Activity

Hiroaki Imai^{1*}, Sinnosuke Okada¹, Jun Komotori¹, and Yuya Oaki¹; ¹School of Integrated Design Engineering, Keio University, Yokohama, Japan; *hiroaki@apple.keio.ac.jp

0456 11:35-12:00 Masahiro Yoshimura (IS)
Nano-Structured Bioactive Ceramic Layer on Metallic Materials by Growing Integration Layer [GIL] Method in Solution

Masahiro YOSHIMURA^{1,2)} and Nobuhiro MATSUSHITA¹⁾; ¹Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan; ²Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan; yoshimura@msl.titech.ac.jp and yoshimura@mail.ncku.edu.tw

----- Lunch (12:00-13:40) -----

Chairs: K. Ioku & H. Imai
0257 13:40-14:20 Christian Rey (IS)
Biomimetic Nanocrystalline Apatites: Structure, Synthesis, Properties and Processing Routes

Christian Rey, Christèle Combes, Christophe Drouet, David Grossin, Sophie Cazalbou, Stéphanie Sarda; University of Toulouse, INPT, UPS, CNRS, CIRIMAT-ENSIACET, Toulouse, France; 4 allée Emile Monso, BP 44362, 31030 Toulouse Cedex 4, France; christian.rey@ensiacet.fr

0307 14:20-14:45 Hirotaka Fujimori (IS)
Neutron Diffraction Study on Structural Defects in Oxy-Hydroxyapatite

Hirotaka Fujimori^{1*}, Kensuke Morita¹, Keisuke Okanishi¹, Kenji Oyama², and Masatomo Yashima³; ¹Department of Applied Chemistry, Yamaguchi University, Ube, Japan; ²Institute for Materials Research, Tohoku University, Sendai, Japan; ³Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, Yokohama, Japan; *hiro@hiro-fuji.net

0282 14:45-15:00 Y. Yokogawa (SIS)
VSC adsorptive properties into ion exchanged zeolite materials in gaseous and aqueous medium

Y. Yokogawa^{1*}, M. Sakanishi¹, N. Morikawa¹, A. Nakamura¹, I. Kishida¹ and H.K. Varma²; ¹Department of Mechanical & Physical Engineering, Graduate School of Engineering, Osaka City University, Japan; ²Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, India; *yokogawa@imat.eng.osaka-cu.ac.jp

----- Break (15:00-15:40) -----

Chairs: J-D Liao & Y. Yokogawa
0050 15:40-16:05 Kohei Soga (IS)
Polyscale Approach for Developing Over-1000-nm Near Infrared Biomedical Imaging System

Kohei Soga^{1,2}, Hirayoshi Hyodo^{1,2}, Nallusamy Venkatachalam¹, Eva Hemmer^{1,2} and Hidehiro Kishimoto^{1,3}; ¹Department of Materials Science and Technology, Tokyo University of Science, Noda, Japan; ²Center for Technologies against Cancer (CTC), Tokyo University of Science, Noda, Japan; ³Research Institute for Biological Sciences (RIBS), Tokyo University of Science, Noda, Japan; *2641 Yamazaki, Noda, Chiba 278-8510, Japan; mail@ksoga.com

0213 16:05-16:30 Chih-Kai Yao (IS)
Non-labeled virus detection technique using inverted multi-angular Au nano-cavities arrayed as SERS-active substrate

Chih-Kai Yao¹, Jiunn-Der Liao^{1*}, Chia-Wei Chang¹, Ai-Li Shiau²; ¹Department of Materials Science and Engineering, National Cheng Kung University, No. 1, University Road, Tainan 70101, Taiwan; ²Department of Microbiology and Immunology, National Cheng Kung University, No. 1, University Road, Tainan 70101, Taiwan; *jdiao@mail.ncku.edu.tw

0034 16:30-16:45 Wei-Chin Huang
Depth-sensing nano-indentation on myelinated axon at various stages

Wei-Chin Huang¹, Jiunn-Der Liao^{1,2,*}, Chou-Ching K. Lin³, Ming-Shaung Ju⁴; ¹Department of Materials Science and Engineering, National Cheng Kung University, No. 1 University Road, Tainan 70101, Taiwan; ²Center for Micro/Nano Science and Technology, National Cheng Kung University, No. 1 University Road, Tainan 70101, Taiwan; ³Department of Neurology, National Cheng Kung University, No. 1 University Road, Tainan 70101, Taiwan; ⁴Department of Mechanical Engineering, National Cheng Kung University, No. 1 University Road, Tainan 70101, Taiwan; jdiao@mail.ncku.edu.tw

2011/9/22

Chairs : N. Matsushita & K-Z Fung

0575 09:00-09:25 Y. F. Zheng (IS)

Study on Bulk Nanocrystalline Metals for Biomedical Application

Y. F. Zheng; State Key Laboratory for Turbulence and Complex System and Department of Advanced Materials and Nanotechnology, College of Engineering, Peking University, Beijing 100871, China; *Department of Advanced Materials and Nanotechnology, College of Engineering, Peking University, Beijing, 100871, China; yfzheng@pku.edu.cn

0385 09:25-09:50 N. Matsushita (IS)

Surface Modification of Bioactive Ceramic Layer Fabricated on Ti-based Bulk Metallic Glass using Hydrothermal-Electrochemical Treatment

N. Matsushita^{1*}, S. Maruyama¹, M. Yoshimura^{1,2}, C-Y Chen¹, K. Katsumata¹, T. Ikoma³, J. Tanaka³, M. Tsukamoto⁴, T. Shinonaga⁴, N. Abe⁴, X. Guoqiang⁵, X. Wang⁵, and M. Niinomi⁵, and K. Okada¹; ¹Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan; ²Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan; ³Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology, Tokyo, Japan; ⁴Joining and Welding Research Institute, Osaka University, Ibaraki, Osaka, Japan; ⁵Institute for Materials Research, Tohoku University, Sendai, Japan;

*matsushita@msl.titech.ac.jp

0815 09:50-10:15 T. Miyazaki (IS)

Acceleration in Nanocrystalline Apatite Formation on Silk Fiber by Surface Modification

T. Miyazaki^{1*}, H. Ishii¹ and E. Ishida²; ¹Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Kitakyushu, Japan; ²Faculty of Engineering, Kyushu Institute of Technology, Japan; *2-4 Hibikino, Wakamatsu-ku, Kitakyushu 808-0196, Japan; tmiya@life.kyutech.ac.jp

0340 10:15-10:30 Chun-Yi Chen
Bioactive Highly-ordered Ti-Nb-Ta-Zr-O Mixed Oxide Nanotubes Array with Ultra-fast Growth Rate

Chun-Yi Chen^{1*}, Kazunari Ozasa², Ken-ichi Katsumata¹, Masaaki Nakai³, Mitsuo Niinomi³, Kiyoshi Okada¹, and Nobuhiro Matsushita¹; ¹Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan; ²Advanced Science Institute, RIKEN, Saitama, Japan; ³Institute for Materials Research, Tohoku University, Sendai, Japan; *chen.c.ac@m.titech.ac.jp

----- **Break (10:30-10:45)** -----

Chairs: Y F Zheng & T. Miyazaki

0284 10:45-11:00 Wen-Ke Huang

Atmospheric micro-plasma device for the sterilization of Streptococcus mutans in the oral bio-film

Wen-Ke Huang, Chih-Chiang Weng, Chao-Yun Wang,

Juinn-Der Liao^{*}; Department of Materials Science and Engineering, National Cheng Kung University, No. 1, University Road, Tainan 70101, Taiwan; *jdliao@mail.ncku.edu.tw

0209 11:00-11:15 Dalton F. Cheng
Silicone Nanocomposite Coatings on Biomedical Polymers

Dalton F. Cheng and Atsushi Hozumi; National Institute of Advanced Industrial Science & Technology (AIST), Nagoya, Japan; *2266-98 Anagahora, Shimoshidami, Moriyama-ku, Nagoya 463-8560, Japan; a.hozumi@aist.go.jp

0911 11:15-11:30 Kuan-Zong Fung
Degradation Concern and Future Trends of Using Zirconia Ceramics for Biomedical Applications

Chi-Yang Liu and Kuan-Zong Fung; Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan; *z8702009@email.ncku.edu.tw

----- **Lunch (12:00-13:40)** -----

Chairs: T. Ichiki & Y. Ikeda

0918 13:40-13:55 Shyh-Chyang Luo
Nanostructured PEDOT Biointerfaces for Enhanced Efficiency of Cell Capturing

Shyh-Chyang Luo, Jun Sekine, Bo Zhu, Hsiao-hua Yu^{*}; Yu Initiative Research Unit, RIKEN Advanced Science Institute, 2-1 Hirosawa, Wako-Shi, Saitama, 351-0198, Japan; * bruceyu@riken.jp

0812 14:55-14:10 Yutaka Ikeda
Scavenging reactive oxygen species for improved gene therapy

Yutaka Ikeda^{1,2}, Kazuko Toh¹, Rie Suzuki¹, Toru Yoshitomi¹ and Yukio Nagasaki^{1,2*}; ¹Graduate School of Pure and Applied Science, University of Tsukuba, Tsukuba, Ibaraki, Japan; ²Satellite Laboratory, International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan; *nagasaki@naglabo.jp

0811 14:10-14:25 Akihiko Kikuchi
Thermoresponsive Soft Interfaces For Modulated Biomolecular Interactions

Akihiko Kikuchi^{1*}, Yosuke Takayama¹, Hiromasa Moriyama¹, Taka-Aki Asoh¹; ¹Department of Materials Science and Technology, Tokyo University of Science, Noda, Chiba, Japan; *2641 Yamazaki, Noda, Chiba 278-8510, Japan; kikuchia@rs.noda.tus.ac.jp

0732 14:25-14:40 Hidenobu Shimizu
Development of Protein-Encapsulating Nanoparticles
Using in situ Polymerization

Hidenobu Shimizu^{1*}, Risei Wada¹, and Masaru Okabe¹;
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 Technology, Atsugi, Japan; * shimizu@bio.kanagawa-it.ac.jp

0779 14:40-14:55 Lingyun Zhao
2-Deoxy-D-Glucose Modified Magnetic Nanoparticles
with Dual Functional Properties: Targeted
Nanotherapy and Magnetic Resonance Imaging

Yajing Zheng^{1,2}, Lingyun Zhao^{1,3*}, Danye Li^{1,4}, Zhiwei
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15:10 Closing

Symposium B4 + B6

Conference Room: 634

Chair: Ta-Jen Yen

2011/9/20

0636 13:40-14:05 How-foo Chen (IS)
Antimicrobial susceptibility test of bacteria subject to
ampicillin through surface plasmon polariton biosensing
technique

How-foo Chen^{1*}, Chi-Hung Lin^{2,3,4}, Chun-Yao Su¹, and
 Hsin-Pai Chen⁵; Institute of Biophotonics, National Yang
 Ming University, Taipei, Taiwan¹; Institute of Microbiology
 & Immunology, National Yang Ming University, Taipei,
 Taiwan²; Taipei City Hospital, Taiwan³; Department of
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 of Infectious Diseases, Department of Medicine, Taipei
 Veterans General Hospital, Taipei, Taiwan⁵; * Sec.2, Linong
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0629 14:05-14:25 Yueh-Chun Lai (IS)
Exploiting Localized Surface Plasmons by Phase
Interrogation for Sensing and Imaging

Chung-Tien Li¹, How-foo Chen², Hsin-Cheng Lee¹, Ieng-Wai
 Un¹ and Ta-Jen Yen^{1*}; ¹Department of Materials Science and
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 R.O.C.; ²Institute of Biophotonics, National Yang-Ming
 University, Taipei, Taiwan, R.O.C.; * tjyen@mx.nthu.edu.tw

0803 14:25-14:40 Wei-En Yang
Osteoblastic Differentiation and Osseointegration of
Titanium Surface with Mixed Nano/submicro/micro-scale
Structure

Wei-En Yang¹, Mau-Chin Lin², Dan-Jae Lin³, Yong-Kie
 Wong⁴, and Her-Hsiung Huang^{2*}; ¹Institute of Oral Biology,
 National Yang-Ming University, Taiwan; ²Department of

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 University, Taiwan; ⁴Department of Dentistry,
 Taichung Veterans General Hospital, Taiwan; *No.
 155, Sec. 2, Li-Nong Street, Taipei 112, Taiwan;
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0936 14:40-15:00 Dong Ha Kim (IS)
Tailored Plasmonic Nanostructures for Efficient
SPR Biosensing

D. H. Kim^{*}, K. Chung, J. Lee, Y. H. Jang and Y. J.
 Jang; Department of Chemistry and Nano Science,
 Ewha Womans University, Seoul, 120-750, Korea;
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 120-750, Korea; dhkim@ewha.ac.kr

----- Break (15:00-15:40) -----

0628 15:45-16:10 Ta-Jen Yen (IS)
A bio-imaging platform via Split-ring resonators
microscopy

Lai Yueh-Chun¹, Hsin-Cheng Lee¹, Cheng-Kuang
 Chen¹ and Ta-Jen Yen^{1*}; ¹Department of Materials
 Science and Engineering, National Tsing-Hua
 University Hsinchu, Taiwan, R.O.C.;
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0840 16:10-16:30 Ying-Chih Liao

Inkjet Printed Biosensors

Pei-Yu Huang¹, Yu-Ping Lin¹, Jun-Yu Hu¹, Ying-Chih Liao^{1*};
¹Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan; *#1 Sec. 4 Roosevelt Rd., Taipei, Taiwan; liao@ntu.edu.tw

0546 16:30-16:50 Chiapng Lee

Biosensors Based on Nickel electrodes

Chiapng Lee*, Sheng-Wei Gu, Meng-Jiy Wang; Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei 106, Taiwan; *
cpLee@mail.ntust.edu.tw

0805 16:50-17:05 Chih-Hsiung Yang

Improvement of Biocompatibility of Titanium Surface by Oxygen Plasma Immersion Ion Implantation Treatment

Chih-Hsiung Yang¹, Yu-Chen Li², Wen-Fa Tsai², Chi-Fong Ai², and Her-Hsiung Huang^{3*}; ¹Institute of Oral Biology,

National Yang-Ming University, Taipei, Taiwan;

²Institute of Nuclear Energy Research, Atomic Energy Council, Taoyuan, Taiwan; ³Department of Dentistry, National Yang-Ming University, Taipei, Taiwan; *No. 155, Sec. 2, Li-Nong Street, Taipei 112, Taiwan; hhuang@ym.edu.tw

0318 17:05-17:20 C. H. Chiu

Fertility and Molecular Analysis Studies on Using Spent Bamboo as Soil Amendment

Y. P. Huang¹, J. Y. Chiu^{2*}, C. H. Lin², W. J. Huang³, O. Varela⁴, C. H. Chiu⁵, Y. J. Liou⁶; ¹ITRI South, Industrial Technology Research Institute, Rm. 611. No. 8, Gongyan Rd, Liujia Shiang, Tainan County 73445, Taiwan, R.O.C.; ^{2,3,4,5,6}Dept. of Environ. Eng. & Sci., National Pingtung University of Science and Technology, Room EP203, 1 Hsiuh Fu Road, 912, Pingtung, Taiwan, R.O.C.;
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Symposium B5

Conference Room: 630

2011/9/20

Chair: Po-Yu Chen

1003 13:40-14:10 Marc A. Meyers (IS)

Structural Biological Materials: Overview

Marc A. Meyers^{1*}, Po-Yu Chen², Joanna McKittrick¹, Maria I. Lopez¹, Yenshan Lin^{1,3}, Eugene A. Olevsky³, Wen Yang¹, and Irene H. Chen³; ¹Mechanical and Aerospace Engineering, University of California, San Diego, La Jolla, CA, USA; ²Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan, ROC; ³Mechanical Engineering, San Diego State University, San Diego, CA, USA;
*mameyers@ucsd.edu

0889 14:10-14:35 C.T. Lim (IS)

Biomimetic Electrospun Composite Nanofibers for Biomedical Applications

C. T. Lim^{1,2*}; ¹Division of Bioengineering & Department of Mechanical Engineering, National University of Singapore, Singapore; ²Mechanobiology Institute, National University of Singapore, Singapore; * ctlm@nus.edu.sg

1029 14:35-15:00 Zhendong Dai (IS)

The tribological behaviors of self-lubricating composites as filler in copper foam

Keju Ji^{1,2}, Yanqiu Xia^{1*}, Zhendong Dai^{2*}; ¹Institute of Bio-inspired Structure and Surface Engineering, Academy of Frontier Science, Nanjing University of Aeronautics and Astronautics, 29 Yudao Street, Nanjing 210016, China; ²State

Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, China; *
zddai@nuaa.edu.cn

----- Break (15:00-15:40) -----

Chair: Po-Yu Chen

0668 15:40-16:00 Ali Miserez (IS)

Bio-encapsulating Membranes with Shock-Absorbing Capability: Biomimicry through Protein Engineering

Tianpei Fu^{1,&}, Paul. A. Guerette^{1,&}, Arif F. Hermawan¹, Gavin Tay¹, Himadri S. Gupta², and Ali Miserez^{1*}; ¹School of Materials Science and Engineering, Nanyang Technological University, Singapore; ²School of Engineering and Materials Science, Queens Mary University of London, U.K.;
& These authors contributed equivalently to this work; *ali.miserez@ntu.edu.sg

0265 16:00-16:20 Itaru Jimbo (IS)

Utilization of diatoms to collect metallic ions

Masanao Kunugi, Takahiro Sekiguchi, Hiroaki Onizawa and Itaru Jimbo; Department of Materials Science, Tokai University, Hiratsuka, Japan; 4-1-1 Kitakaname, Hiratsuka, Kanagawa 259-1292 Japan; jimbo@keyaki.cc.u-tokai.ac.jp

0043 16:20-16:40

Tongxiang Fan (IS)

Biomimetic Design Inspired by leaf and Butterfly Wing in Nature

Tongxiang Fan*; State Key Lab of Metal Matrix Composites,
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Dongchuan Road, Shanghai, 200240; txfan@sjtu.edu.cn

Symposium C

Conference Room: 403

2011/9/20

Chair: Sinn-wen Chen

1421 13:40-14:00 Kunio Takayanagi (IS)
Sub-50pm Resolution Microscopy of “Nano” in Materials
Kunio Takayanagi; Department of Physics, Tokyo Institute of Technology, Tokyo, Japan; 2-12-1 O-okayama, Meguro, Tokyo, 152-8551 Japan; takayang@phys.titech.ac.jp

0108 14:00-14:15 E-Wen Huang
Cyclic-loading Induced Lattice-Strain Asymmetry in Loading and Transverse Directions
E-Wen Huang ^a, Rozaliya I. Barabash ^{b, c}, Peter K. Liaw ^b, and Shan-Yu Wu ^a; ^aDepartment of Chemical & Materials Engineering and Center for Neutron Beam Applications, National Central University, Jhongli, Taiwan, R.O.C.; ^bDepartment of Materials Science and Engineering, The University of Tennessee, Knoxville, TN, USA; ^cMaterials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN, USA.

0481 14:15-14:30 J. L. Fan
Fine-grained tungsten heavy alloy: from the synthesis to dynamic failure behavior and thermomechanical processing by rapid hot extrusion
J.L. Fan*, X. Gong, B.Y. Huang; State Key Laboratory for Powder Metallurgy, Central South University, Changsha, 410083, P.R. China; * fjl@mail.csu.edu.cn

0142 14:30-14:45 Takuji Ube
In-situ Infrared Spectroscopy of Reaction between Aluminum Thin Film and Ultrapure Water
Takuji Ube and Takashi Ishiguro; Department of Materials Science and Technology, Tokyo University of Science, 2641 Yamazaki, Noda, Chiba 278-8510, Japan; ishiguro@rs.noda.tus.ac.jp

0475 14:45-15:00 Chuan-Pu Liu
Investigation of microstructure issues in back contacts of Si photovoltaic by TEM and SEM
Chuan-Pu Liu^{1*}, Hsin-Chiao Fang¹, Hung-Shuo Chung², and Chin-Lin Huang²; ¹Department of Materials Science and Engineering, National Cheng Kung University, Tainan 70101, Taiwan; ²Section of Ceramic Materials (T62), Department of New Materials Research & Development, China Steel Corporation, Kaohsiung 81233, Taiwan; * cpliu@mail.ncku.edu.tw

----- Break (15:00-15:40) -----

Chair: Fu-rong Chen

0095 15:40-16:00

Hyuck Mo Lee (IS)
Structural Evolution of Pt55 Nanoparticles by Ligands: Amine versus Thiol
Ji Hoon Ryu,¹ Sang Soo Han,² Da Hye Kim,¹ and Hyuck Mo Lee^{1*}; ¹Department of Materials Science and Engineering, KAIST, Daejeon, Korea 305-701; ²Center for Nanocharacterization, KRISS, Daejeon, Korea 305-340; *Department of Materials Science and Engineering, KAIST, 335 Gwahangno, Yuseong-gu, Daejeon, Korea 305-701; hmlee@kaist.ac.kr

0079 16:00-16:15 S. J. Shih
Controlled morphological structure of ceria nanoparticles prepared by spray pyrolysis
S. J. Shih^{1*}, Y. Y. Wu¹, C. Y. Chen² and C.-Y. Yu¹; ¹Department of Materials Science and Engineering, National Taiwan University of Science and Technology, 43, Sec. 4 Keelung Road, Taipei, Taiwan 106, R. O. C.; ²Department of Materials Science and Engineering, Feng Chia University, No. 100 Wenhwa Road, Taichung, Taiwan, 40724, R.O.C.; *shao-ju.shih@mail.ntust.edu.tw

0471 16:15-16:30 Te Ba
Single Droplet Splatting Behavior in Plasma Spray Coating Process
Te Ba¹, Heong Wah Ng^{1*}, and Chang Wei Kang²; ¹Division of Engineering Mechanics, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore; ²Institute of High Performance Computing, Singapore; mhwng@ntu.edu.sg

0322 16:30-16:45 Seiji Isoda
ADF-STEM Imaging of Block Copolymers without Staining
Ryotaro Aso¹, Mitsutaka Haruta¹, Takeshi Namikoshi², Tamotsu Hashimoto², Hiroki Kurata¹, and Seiji Isoda^{3*}; ¹Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; ²Graduate School of Engineering, Fukui University, Fukui, Japan; ³Institute for Integrated Cell-Material Sciences, Kyoto University, Kyoto, Japan; *isoda@icems.kyoto-u.ac.jp

0294 16:45-17:00 Shan-Haw Chiou
Electronic structure and electric types of IA~VIIA atom substituting Zn site of ZnO doping

Shan-Haw Chiou^{1*}, Ming-Hong Chiueh¹, Jin-Bao Wu¹, Hong-Yih Tseng² and Ying-Cheng Lu²; ¹*Material and Chemical Research Laboratories, Industrial Technology Research Institute, Chutung, Hsinchu, Taiwan, R.O.C.; ²BeyondPV Co., Ltd, Tainan, Taiwan 70955, R.O.C.; *Rm. 222, Bldg. 77, 195, Sec. 4, Chung Hsing Rd. Chutung, Hsinchu, Taiwan 31040, R. O.C.; mhchiueh@itri.org.tw, wujinbao@itri.org.tw, tseng@beyondpv.com, yclu@beyondpv.com

2011/9/21

Chair: Hao Ouyang

0266 10:45-11:00 Tomoyuki Tamura
Determination of Ti coordination in Ti-doped SiO₂ glass using first-principles XANES/ELNES calculations

Tomoyuki Tamura^{1*}, Shingo Tanaka², and Masanori Kohyama²; ¹Center for Fostering Young and Innovative Researchers, Nagoya Institute of Technology, Gokiso, Showa, Nagoya, Aichi 466-8555, Japan; ²Research Institute for Ubiquitous Energy Devices, National Institute of Advanced Industrial Science and Technology, Midorigaoka, Ikeda, Osaka 563-8577, Japan; *tamura.tomoyuki@nitech.ac.jp

0302 11:00-11:15 Takahide Nakamura
Physical Accuracy of Large-Deformation Dynamics with Improved Coarse-Grained Particle Method

Takahide Nakamura^{1*}, Ryo Kobayashi¹, Tomoyuki Tamura¹, and Shuji Ogata¹; ¹Department of Scientific and Engineering Simulation, Graduate School of Engineering, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya, Japan; *nkmrtkhd@gmail.com

0217 11:15-11:30 Yimin Li
Densification Behavior and Density Distribution of Two Material Co-sintering

Yimin Li¹, Hao He¹, and Pan Liu¹; ¹State Key Laboratory of Powder Metallurgy, Central South University, Changsha, China; *liyimin33@yahoo.com.cn

0249 11:30-11:45 Bin Xu
Effect of Y substitution for Ni on the thermoelectric properties of ZrNiSn-based Half-Heusler compounds
 Bin Xu,^{1,2} and Yuanxu Wang²; ¹Department of Mathematics and Information Sciences, North China Institute of Water Conservancy and Hydroelectric Power, Zhengzhou 450008, China; ²Institute for Computational Materials Science, School of Physics and Electronics, Henan University, Kaifeng 475004, China.

----- Lunch (12:00-13:40) -----

Chair: Chuan-pu Liu

1085 13:40-14:00

Gyeong S. Hwang (IS)

Understanding the properties of silicon-based composite anodes for lithium ion batteries through first principles-based atomistic modeling

Gyeong S. Hwang¹; ¹Department of Chemical Engineering, The University of Texas at Austin, U.S.A.; 1 University station C0400, Austin, Texas 78712, U.S.A.; gshwang@che.utexas.edu

0757 14:00-14:20

Wojciech Gierlotka (IS)

CALPHAD method and its application to lead – free solder materials

Wojciech Gierlotka¹, Sinn-wen Chen², Hsin – jay Wu², Yu-Chih Huang²; Yuan – Ze University, Chemical Engineering and Material Science Department, Taiwan; National Tsing – Hua University, Chemical Engineering Department, Taiwan.

0795 14:20-14:35 Hwa-Chiang Lo

Finite element modeling of hemodiafiltration in PSf hollow fiber membranes

Hwa-Chiang Lo^{1*}, Jeng-Liang Kuo², and Zhi-Feng Jue³; ¹Material and Chemical Research Laboratories, Industrial Technology Research Institute, Chutung, Hsinchu 310, Taiwan; ²Material and Chemical Research Laboratories, Industrial Technology Research Institute, Chutung, Hsinchu 310, Taiwan; ³Material and Chemical Research Laboratories, Industrial Technology Research Institute, Chutung, Hsinchu 310, Taiwan; *HwaChiangLo@itri.org.tw

0755 14:35-14:50 Wojciech Gierlotka
Diffusion mobilities in the face centered phase in the ternary Ag – Cu – Sn system

Wojciech Gierlotka¹; Yuan – Ze University, Chemical Engineering and Material Science Department, Taiwan.

----- Break (15:00-15:40) -----

Chair: Chin-lung Kuo

0163 15:40-16:00 Yong Du

Phase-field simulation of microstructure evolution of γ precipitate in γ' matrix in Ni-Al alloys

Weihua Sun¹, Senlin Cui¹, Lijun Zhang², Yong Du^{1,*}, Baiyun Huang¹; ¹State Key Laboratory of Powder Metallurgy, Central South University, Changsha, Hunan 410083, P.R. China; ²Interdisciplinary Centre for Advanced Materials Simulation, Ruhr-University Bochum, Bochum, Germany; *yongducalphad@gmail.com

0293 16:00-16:15 Shan-Haw Chiou

The study of electronic structure of Sc, Y, Ti, Zr substituting Zn site of Al-doped ZnO by ab initio method

Shan-Haw Chiou^{1*}, Ming-Hong Chiueh¹, Jin-Bao Wu¹, Hong-Yih Tseng² and Ying-Cheng Lu²; ¹Material and Chemical Research Laboratories, Industrial Technology Research Institute, Chutung, Hsinchu, Taiwan, R.O.C.; ²BeyondPV Co., Ltd, Tainan, Taiwan, R.O.C.; *Rm. 222, Bldg. 77, 195, Sec. 4, Chung Hsing Rd. Chutung, Hsinchu, Taiwan 31040, R. O.C.; SHChiou@itri.org.tw, mhchiueh@itri.org.tw, wujinbao@itri.org.tw, tseng@beyondpv.com, yclu@beyondpv.com

0876 16:15-16:30 S. Q. Wang

DFT Studies on Orbital Hybridization in Graphene and Silicene

S. Q. Wang^{1*}; ¹Shenyang National Laboratory for Materials Science, Institute of Metal Research, CAS, Shenyang, China; *72 Wenhua Road, Shenyang 110016; sqwang@imr.ac.cn

0866 16:30-16:45 Lin Zhang

A molecular dynamics study of thermal behavior of melting a Cu₅₄Au₁ cluster

L. Zhang^{*}; Institute of Materials Physics and Chemistry, College of Science, Northeastern University, Shenyang 110004, China; * Mailing Add.:Northeastern University P.O.Box 104, Shenyang, 110004, China; zhanglin@imp.neu.edu.cn

2011/9/22

Chair: Sinn-wen Chen

0982 09:15-09:35

Shuanglin Chen (IS)

Computational Alloy Design with Pandat

Shuanglin Chen, Fan Zhang, Weisheng Cao, Chuan Zhang; CompuTherm LLC, Madison, WI 53719, USA.

0387 09:35-09:50 Pingfang Shi

Computational Thermodynamics and Kinetics in Modeling and Simulation of Various Materials Systems and Processes

Pingfang Shi^{1*}, Anders Engström¹, Johan Bratberg¹, Qing Chen¹ and Lars Höglund^{1,2}; ¹Thermo-Calc Software AB, Norra Stationsgatan 93, SE-113 64 Stockholm, Sweden; ²Dept. of Materials Sci. & Eng., Royal Inst. of Tech. (KTH), SE-100 44 Stockholm, Sweden; *Thermo-Calc Software AB, Norra Stationsgatan 93, SE-113 64 Stockholm, Sweden; pingfang@thermocalc.se

0655 10:10-10:25 Sinn-wen Chen

Phase equilibria of Ag-In-Zn ternary system

¹Sinn-wen Chen, ²Wojciech Gierlotka, ^{1,2}Jui-shen Chang, ¹Chia-ming Hsu; ¹Department of Chemical Engineering, National Tsing Hua University, #101, Sec. 2, Kuang-Fu Road, Hsin-Chu, Taiwan 300; ²Department of Chemical Engineering and Materials Science, Yuan Ze University #135, Yuan-Tung Road, Chungli, Taoyuan, Taiwan 320

Symposium D1

Conference Room: 402b

2011/9/20

Chair: Ren-Kae, Shiue

1443 13:40-14:10 J. Lin (IS)

Hot stamping and CDM-based theories for predicting FLD

M. S. Mohamed, J. Lin*, D. S. Balint & T. A. Dean;
¹Department of Mechanical Engineering, Imperial College
 London, South Kensington, London, SW7 2AZ, UK.; *
jianguo.lin@imperial.ac.uk

0373 14:10-14:30 Kenji Higashi (IS)

Towards Innovation in Ab Initio Materials Design for Aluminum Alloys

T. Uesugi¹ and K. Higashi^{1*}; ¹Department of Materials
 Science, Graduate School of Engineering, Osaka Prefecture
 University, Sakai, JAPAN; *kshin@saturn.yzu.edu.tw

0072 14:30-14:45 S. K. Wu

Infrared Brazing Ti₅₀Ni₅₀ and CP-Ti Using Two Ag-based Fillers

R.K. Shiue¹, T.E. Yang¹, S.K. Wu^{1*}; ¹Department of Materials
 Science and Engineering, National Taiwan University, Taipei
 106, Taiwan; *Department of Materials Science and
 Engineering, National Taiwan University, Taipei 106, Taiwan;
skw@ntu.edu.tw

0450 14:45-15:00 Wen-Ta Tsai

Electrochemical Behavior of Pure Ti in ionic liquids

Jhen-Rong Chen, Ming-Tsung Lee, Wen-Ta Tsai*;
 Department of Materials science and Engineering National
 Cheng-Kung University, Tainan, Taiwan; *
wtttsai@mail.ncku.edu.tw

----- Break (15:00-15:40) -----

Chair: W. Kai

0189 15:40-16:00 Hengmei YIN (IS)

Effects of Sn addition on the microstructure and aging behavior of Mg-14Li alloy

Hengmei Yin^{1,2,a}, Bin Jiang^{1,2,b}, Fusheng Pan^{1,2,c}; ¹National
 Engineering Research Center for Magnesium Alloys,
 Chongqing University, Chongqing, 400030, China; ²College
 of Materials Science and Engineering, Chongqing University,
 Chongqing, 400030, China; ^ayinhengmei1986@gmail.com; ^b
jiangbinrong@cqu.edu.cn; ^cfspan@cqu.edu.cn

0553 16:00-16:20 Mingxing Zhang (IS)

A Novel Surface Coating Technique for Ti Alloys

Mingxing Zhang^{1*}, Shoumou Miao¹, and Yinong Shi²;
¹Division of Materials, School of Mechanical and Mining

Engineering, The University of Queensland, St
 Lucia QLD 4072, Australia; ²Shenyang National
 Laboratory for Materials Science, Institute of Metal
 Research, Chinese Academy of Sciences, Shenyang
 110016, China; *Mingxing.Zhang@uq.edu.au

0146 16:20-16:35 W. Kai

Effect of Surface Modifications on High-Temperature Oxidation Behavior of Ti-15V-3Al-3Sn-3Cr Alloy

W. Kai*, C. M. Liao, C. L. Lin, and W. S. Chen;
 Institute of Materials Engineering, National Taiwan
 Ocean University; wkai@mail.ntou.edu.tw

0218 16:35-16:50 Chi-Jen Chung
Micro-arc Oxidation Behavior of Titanium under Acidic and Alkaline NaH₂P0₄ Electrolyte

Chien-Hui Chen¹, Hou-Jen Chu¹, Chi-Jen Chung^{2*},
 Ju-Liang He¹; ¹Department of Materials Science and
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 Wenhwa Rd., Seatwen District, Taichung City
 40724, Taiwan, R.O.C.; ²Department of Dental
 Technology and Materials Science, Central Taiwan
 University of Science and Technology, No. 666,
 Buzih Rd., Beitun District, Taichung City 40601,
 Taiwan, R.O.C.

1070 16:50-17:05 M. S. Kim

Formation of porous structure in TiAl based intermetallics by reaction synthesis

J.M. Kim, S.K. Hyun, and M.S. Kim*; Division of
 Materials Science & Engineering, Inha University,
 Incheon, Korea; *mskim@inha.ac.kr

2011/9/21

Chair: Hsin-Chih Lin

0436 10:45-11:00 Kan-Lin Hsueh

Inhibiting ability of Chelating Agent on Aluminum Corrosion in Alkaline Solution

Chun-Hsing Wu, Chia-Chun Chung, Meng-Chang
 Lin, Kan-Lin Hsueh*, Wen-Chen Chang; Green
 Energy and Environmental Research Laboratories,
 Industrial Technology Research Institute, ChuTung,
 TAIWAN; *Rm 307A, Bldg. 64, 195, Sec. 4, Chung
 Hsing rd., Chutung, Hsinchu, TAIWAN;
KanLinHsueh@itri.org.tw

0430 11:00-11:15 Hsien-Ta Hsu

Improvement of Corrosion Resistance of AZ91D Magnesium Alloy by Nickel Plating

Tsong-Jen Yang*, Hsien-Ta Hsu; Department of Materials Science and Engineering, Feng Chia University, Taichung, Taiwan; * yangtj@fcu.edu.tw

0004 11:15-11:30 H. Ardelean

Corrosion processes and development of new green protection with cerium, zirconium and niobium-compounds for Mg-Y-RE-Zr alloys

H. Ardelean*; Laboratoire de Physico-Chimie des Surfaces, UMR CNRS-ENSCP 7045, Ecole Nationale Supérieure de Chimie de Paris, 11 rue P. et M. Curie, 75005 Paris, France; *helene-ardelean@chimie-paristech.fr

----- Lunch (12:00-13:40) -----

Chair: Kuen-Song Lin

0180 13:40-14:00 Xuefeng Liu (IS)

Advanced Preparing Technology and Mechanism of Black Ceramic Coating on the Surface of Magnesium Alloy

Xuefeng Liu*, Gang Liu, Jianxin Xie; Key Laboratory for Advanced Materials Processing (MOE), University of Science and Technology Beijing, Beijing, P.R. China; *Key Laboratory for Advanced Materials Processing (MOE), University of Science and Technology Beijing, Beijing 100083, P.R. China; liuxuefengbj@163.com

0910 14:00-14:15 Kuen-Song Lin

Synthesis, Characterization, and Hydrogen Adsorption-desorption Properties of Aluminum Hydrides

Wei Lu, Kuen-Song Lin*, Zong-Yan Tsai, and Chang-Shaing Hsu, and Jing-How Yang; Department of Chemical Engineering & Materials Science/Fuel Cell Center, Yuan Ze University, Chung-Li City, Tao-Yuan County, 320 Taiwan, R.O.C.; kslin@saturn.yzu.edu.tw

0405 14:15-14:30 LIU Xin-hua

The Investigation of Fabrication Processing for Lotus-type Porous Magnesium by the In-situ Reaction and Unidirectional Solidification Method

LIU Xin-hua*, LIU Xue-feng, and XIE Jian-xin; Key Laboratory for Advanced Materials Processing (MOE), University of Science and Technology Beijing, Beijing, People's Republic of China; *Xue Yuan Road No.30, Hai Dian District, Beijing, China; Liuxinhua18@163.com

----- Break (15:00-15:40) -----

Chair : L. W. Tsay

0058 15:40-16:00

ZHANG Zhi-hao (IS)

The Reconstruction Technology of Welding-plane mesh in 3D FEM Simulation of Porthole

Extrusion and Its Application

ZHANG Zhi-hao¹, XIE Jian-xin¹, HOU Wen-rong¹, HUANG Dong-nan^{1,2}; ¹Institute for Advanced Materials and Technology, University of Science and Technology Beijing, Beijing 100083, PR China; ²School of Materials Science and Engineering, Inner Mongolia University of Technology, Hob. hot 010051, PR China; *XIE Jian-xin, Institute for Advanced Materials and Technology, University of Science and Technology Beijing, Beijing 100083, PR China; jxxie@mater.ustb.edu.cn

1071 16:00-16:15 Jing Zhang

Effect of promotively-solutionizing and aging on the microstructure and mechanical properties of a Mg-Zn-Al alloy

Jing Zhang^{1,2*}, Fusheng Pan^{1,2}, Rulin Zuo¹; ¹College of Materials Science and Engineering, Chongqing University, Chongqing, China; ²National Engineering Research Center for Magnesium Alloys, Chongqing, China; *College of Materials Science and Engineering, Chongqing University, Chongqing 400044, China; jingzhang@cqu.edu.cn

0362 16:15-16:30 Chen Yun Hsieh

Copper electrodeposition on magnesium alloy (AZ 80) with a U shape surface

Chen Yun Hsieh, Ching An Huang, C K Lin; Department of Mechanical Engineering, Chang Gung University, Taoyuan, 333 Taiwan

0152 16:30-16:45 Joonsik Park
Mechanical Behaviors and Structural Evolution of the Extruded Magnesium AZ31 and AZ61 alloys

Minho Kim¹, Youngho song¹, Haerim Lee¹, Jeongmin Kim¹, Joonsik Park^{1*}, and Hyuntaek Son²; ¹Division of Advanced Materials, Hanbat National University, Daejeon, 305-719 Korea; ²Korea Institute of Industrial Technology, Gwangju, 500-480 Korea; * jsphb@hanbat.ac.kr

Symposium D2:

Conference Room: 402a

2011/9/20

Chairs: T. G. Nieh & D. H. Kim

0503 13:40-14:05 C. T. Liu (IS)

Global behavior of atomic structures and mechanical properties of Bulk Metallic Glasses (BMGs)*

C. T. Liu¹, X. J. Liu^{1,2}, G. L. Chen², and M. W. Chen³; City University of Hong Kong, Kowloon, Hong Kong; ²Beijing University of Science and Technology, Beijing, China; ³WPI-AIMR, Tohoku University, Sendai, Japan.

0467 14:05-14:30 Do Hyang Kim (IS)

Enhancement of oxidation resistance of metallic glass for electrode contact formation in Si solar cell

Se Yun Kim¹, Sang Soo Jee¹, Ka Ram Lim², Won Tae Kim³, Eun-Sung Lee¹, Do Hyang Kim^{2*}, Young Hwan Kim¹, Sang Mock Lee¹, Jun Ho Lee¹ & Jürgen Eckert⁴; ¹Materials Research Center, Samsung Advanced Institute of Technology, Yongin-si, Gyeonggi-do, Korea; ²Center for Non-crystalline Materials, Department of Materials Science and Engineering, Yonsei University, Seoul, Korea

³IT Division, Cheongju University, Cheongju, Korea; ⁴IFW Dresden, Institute for Complex Materials, Dresden, Germany;

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0323 14:30-14:50 Y.C. Chen

Evaluation of Physical and Mechanical Properties of Metallic Glasses in Micro/nano Scales

Y.C. Chen¹, J. P. Chu^{1,*}, J. S. C. Jang², T. R. Tsai³, H. Sung³, H. Kato⁴; ¹Graduate Institute of Engineering and Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei 10607, Taiwan;

²Department of Mechanical Engineering, National Central University, Chungli 32011, Taiwan; ³Institute of Optoelectronic Sciences, National Taiwan Ocean University, Keelung 20224, Taiwan; ⁴Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan; * jpchu@mail.ntust.edu.tw

0161 14:50-15:10 E-Wen Huang

In-situ Synchrotron X-ray Diffraction & Tomography Study of a Zr-based Bulk Metallic Glass Composite

E-Wen Huang^{1*}, Bartłomiej Winiarski², Richard Moat², Andrew Chuang³, Yu-lih Huang¹, Chung-Kai Chang¹, Mario Scheel⁴, Marco Di Michiel⁴, Philip Withers², Peter K. Liaw³, J.W. Qiao⁵, and Y. Zhang⁶; ¹Department of Chemical and Materials Engineering and Center for Neutron Beam Applications, National Central University, Jhongli city, Taiwan, R.O.C.; ²School of Materials, University of Manchester, Manchester, United Kingdom; ³Department of

Materials Science & Engineering, the University of Tennessee, Knoxville, United States; ⁴European Synchrotron Radiation Facility Beamline ID15, BP 220, F-38043 Grenoble, France; ⁵College of Materials Science and Engineering, Taiyuan University of Technology, Taiyuan, China; ⁶State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, Beijing 100083, China

----- Break (15:10-15:40) -----

Chairs: J. W. Yeh & S. Rangnathan

0837 15:40-16:05 S Rangnathan (IS)

Application of Pettifor Structure Maps to Multicomponent Alloys with Special Reference to High Entropy Alloys, Intermetallics, Quasicrystals and Bulk Metallic Glasses

S Rangnathan; Department of Materials Engineering, Indian Institute of Science, Bangalore 560012, India

0094 16:05-16:30 A. Takeuchi (IS)

Alloy Design for High-Entropy Bulk Glassy Alloys

A. Takeuchi^{1*}, N. Chen¹, T. Wada², Y. Yokoyama², A. Inoue¹ and J.-W. Yeh³; ¹World Premier International Research Center (WPI), Tohoku University, Sendai 980-8577, Japan; ²Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan; ³Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan; *takeuchi@wpi-aimr.tohoku.ac.jp

0049 16:30-16:55 Ki Buem Kim (IS)

Characterization of Multicomponent Alloys Developed by Equiatomic Substitution

K. B. Kim^{1*}; ¹Faculty of Nanotechnology and Advanced Materials Engineering, Sejong University, Seoul, Korea; * kbkim@sejong.ac.kr

0354 16:55-17:15 Jien-Wei Yeh (IS)

Multicomponent Diffusion in the CoCrFeMnNi High-Entropy Alloys

Jien-Wei Yeh^{1*}, Kun-Yo Tsai¹, and Ming-Hung Tsai²; ¹Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan; ²Department of Materials Science and Engineering, North Carolina State University, Raleigh, NC 27695, USA; *101, Sec. 2, Kuang-Fu Road, Hsinchu 30013, Taiwan; jwyeh@mx.nthu.edu.tw

2011/9/21

Chairs: C. T. Liu & H. Kato

0024 10:45-11:10 T. G. Nieh (IS)

Shear band propagation in Zr-based metallic glass and its implications

T.G. Nieh^{1*}, S.X. Song², and J.C. Huang³; ¹Department of Materials Science and Engineering, University of Tennessee, USA; ²Hysitron, Inc. MN, USA; ³Institute of Materials Science and Engineering, National Sun Yat-Sen University, Taiwan, ROC; tnieh@utk.edu

0134 11:10-11:35 Hidemi Kato (IS)

Anisothermal Creep Strain Recovery and Structural Inhomogeneity in Metallic Glass

Hao Wang¹, Hidemi Kato^{2*}, and Akihisa Inoue³; ¹Department of Materials Science, Graduate School of Engineering, Tohoku Univ., Sendai 980-8579, Japan; ²Institute for Materials Research, Tohoku Univ., Sendai 980-8577, Japan; ³Tohoku Univ., Sendai 980-8577, Japan; *
hikato@imr.tohoku.ac.jp

0535 11:35-12:00 B. S. Murty (IS)

Thermodynamics of Phase formation, Synthesis and Mechanical Properties of Nanocrystalline High Entropy Alloys Processed by Mechanical Alloying

S. Varalakshmi, S. Praveen, R. Sriharitha, R. Raghavan, Ravi Sankar Kottada and B.S. Murty*; Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, Chennai- 600 036, India; murty@iitm.ac.in

----- Lunch (12:00-13:40) -----

Chair: B. S. Murty

0422 13:40-14:05 P. K. Liaw (IS)

Fatigue Behavior of Al_{0.5}CoCrCuFeNi High-Entropy Alloys

P. K. Liaw¹, M. A. Hemphill¹, G. Y. Wang¹, J. W. Yeh², C. W. Tsai², R. Graves¹, and A. Chuang¹; ¹Department of Materials Science and Engineering, University of Tennessee, Knoxville TN, USA; ²Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan, Department of Materials Science and Engineering; Rm. 427-B Dougherty Eng. Bldg., University of Tennessee, Knoxville, TN 37996-2200, pliaw@utk.edu

0505 14:05-14:30 Yong Zhang (IS)

High-entropy Induced Amorphous and Solid-Solution Phase Formations for Multi-components Alloys

Yong Zhang; State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, China; drzhangy@ustb.edu.cn

0856 14:30-14:55 Yi-Zhu He (IS)

Research on the High-entropy Alloy Coatings Prepared by Laser Cladding

Hui Zhang^{1,2*}, Yi-Zhu He¹, Ye Pan², Xiao-Min Yuan¹, Song-Hua Si¹; ¹School of Materials Science and Engineering, Anhui University of Technology; ²School of Materials Science and Engineering, Southeast University; *heyizhu@ahut.edu.cn

----- Break (15:00-15:40) -----

Chairs: P. K. Liaw & H. D. Hui

0459 15:40-16:05 Peter K. Liaw (IS)

Fatigue Study on a Tough Fe-Based Bulk-Metallic Glass

Peter K. Liaw^{1*}, Gongyao Wang¹, Marios D. Demetriou², and William L. Johnson²; ¹Department of Materials Science and Engineering, The University of Tennessee, Knoxville, TN 37996, USA; ²Keck Laboratory, California Institute of Technology, Pasadena, CA 91125, USA.; *pliaw@utk.edu

0641 16:05-16:30 X. J. Liu (IS)

Composition optimization of Fe-based bulk metallic glass based on multi-scale research

X. J. Liu*, J. J. Han and C. P. Wang; Department of Materials Science and Engineering, College of Materials, and Research Center of Materials Design and Applications, Xiamen University, Xiamen, 361005, P.R. China; * lxj@xmu.edu.cn

0295 16:30-16:50 S. X. Song

Electric resistivity in metallic glasses under deformation at room temperature

S.X. Song^{1*}, Z.M Zhang², and Z.W. Shan^{1,2}; ¹Hysitron Inc., Minneapolis, MN 55344, USA; ²Department of Materials Science & Engineering, Xi'an Jiaotong University, Xi'an 710049, China.

0374 16:50-17:10 Chia-Lin Li

The effects of sputtering parameters on the mechanical and adhesion properties of Zr-based metallic-glass film deposited by pulsed DC magnetron sputtering

Jinn P. Chu^{1*}, Chia-Lin Li¹, Jyh-Wei Lee^{2,3}; ¹Graduate Institute of Materials Science and Technology, National Taiwan University of Science and Technology, Taipei, Taiwan, ROC; ²Department of Materials Engineering, Mingchi University of Technology, Taipei, Taiwan, ROC; ³Center for Thin Film Technologies and Applications, Mingchi University of Technology, Taipei, Taiwan, ROC; *jpchu@mail.ntust.edu.tw

2011/9/22**Chairs: J. C. Huang & E. S. Park****0048 09:00-09:25 Evan Ma (IS)****From hot shear banding to cold shear to “homogeneous” flow in metallic glasses**Evan Ma; Department of Materials Science and Engineering, Johns Hopkins University, Baltimore, MD 21218, USA; ema@jhu.edu**0483 09:25-09:50 Xidong Hui (IS)****Development of New Zr- and Ti-based Bulk Metallic Glasses**

Xidong Hui, Xialiang Zhou, Xiao Hua, Shengnan Liu, Yunliang Wang and Guoliang Chen; State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, Beijing 100083, China

0783 09:50-10:10 Tsung-Shune Chin (IS)**Calcium-based Bulk Metallic Glasses and Their Electrochemical Properties**Shou-Hong Wang¹, Shi-Kun Chen², and Tsung-Shune Chin^{1, 2*}; ¹Dept. of Materials Sci. & Eng, National Tsing Hua University, Hsinchu 300, Taiwan; ²Dept. of Materials Sci. & Eng., Feng Chia University, Taichung 407, Taiwan; * tschin@fcu.edu.tw**0542 10:10-10:30 Cheng-Min Lee****Zr-Based Glass-Forming Film for Fatigue-Property Improvements of 316L Stainless Steel: Annealing Effects**Jinn P. Chu¹; Cheng-Min Lee¹; R. T. Huang²; Peter. K. Liaw³; ¹Graduate Institute of Engineering and Dept. of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei 10607, Taiwan; ²Institute of Material Engineering, National Taiwan Ocean University, Keelung 20224, Taiwan; ³Department of Materials Science and Engineering, The University of Tennessee, Knoxville, TN 37996, USA----- **Break (10:30-10:45)** -----**Chairs: E. Ma & K. C. Hsieh****0025 10:45-11:10 J. C. Huang (IS)****Mechanical response of amorphous ZrCuTi/PdCuSi nanolaminates under nanoindentation**S. Y. Kuan¹, X. H. Du^{1,2}, H. S. Chou¹, J. C. Huang^{1*}; ¹Department of Materials and Optoelectronic Science, National Sun Yat-Sen University, Kaohsiung, Taiwan 804, ROC; ²School of Materials sciences and Engineering, Shenyang Aerospace University, Shenyang, 110136, PRC; * jacobc@mail.nsysu.edu.tw**0073 11:10-11:35 Z. P. Lu (IS)****Local atomic structures and global symmetry in metallic glasses**X. J. Liu^{1,2}, Z. P. Lu^{1*}, C. T. Liu², G. L. Chen¹; ¹State Key Laboratory of Advanced Metals and Materials, University of Science and Technology Beijing, Beijing 100083, China; ²Department of Mechanical Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, China; * luzp@ustb.edu.cn**0939 11:35-12:00 E. S. Park (IS)****Effects of Shear Deformed Zones on Properties of Amorphous Metals**N.Y. Kim, J.W. Kim and E.S. Park*; Research Institute of Advanced Materials, Department of Material Science and Engineering, Seoul National University, Seoul 151-744 Korea; * espark@snu.ac.kr----- **Lunch (12:00-13:40)** -----**Chairs: Z. P. Lu & J. S. C. Jang****0506 13:40-14:05 J. P. Chu (IS)****Bending-Ductility Improvements of Bulk Metallic Glass by Surface Coatings**Jinn Chu*; ¹Graduate Institute of Engineering and Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei 10607, Taiwan; jpchu@mail.ntust.edu.tw**0941 14:05-14:25 Na Young Kim****Interpretation of Shear Band Behaviors in Metallic Glass Ribbon**N.Y. Kim and E.S. Park*; Research Institute of Advanced Materials, Department of Material Science and Engineering, Seoul National University, Seoul 151-744 Korea; * espark@snu.ac.kr**0063 14:25-14:45 J. S. C. Jang (IS)****Enhanced Remarkable Plasticity of Zr-Based Bulk Metallic Glass Composites With in-situ and ex-situ Ta Dispersoids**J. S. C. Jang^{1,2*}, J. B. Li², Z. W. Hsiao³, J. C. Huang⁴; ¹Institute of Materials Science and Engineering, National Central University, Chung-Li, Taiwan 32001, ROC.; ²Department of Mechanical Engineering, National Central University, Chung-Li, Taiwan 32001, ROC.; ³Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan, ROC.; ⁴Department of Materials and Optoelectronic Science; Center for Nanoscience and Nanotechnology, National Sun Yat-Sen University, Kaohsiung, Taiwan 804, ROC; *#300, Chung-Da Road, Chung-Li, Taiwan 32001; jsclang@ncu.edu.tw

----- Break (15:00-15:40) -----

Chair: J. P. Chu

0219 15:40-16:05 Ker-Chang Hsieh (IS)

The cluster behavior of Zr-base bulk metallic glass

Min-Chi Yeh¹ and Ker-Chang Hsieh^{1,a}; ¹Department of Materials and Optoelectronic Science, National Sun Yat-Sen University, Kaohsiung 804, Taiwan; ^a

khsieh@mail.nsysu.edu.tw

0959 16:05-16:25 Chae Woo Ryu

A New Parameter for evaluating formability of Metallic Glass Wire

C.W. Ryu, H.S. Oh and E.S. Park^{*}; Research Institute of Advanced Materials, Department of Materials Science and Engineering, Seoul National University, Seoul 151-744, Republic of Korea;

[*espark@snu.ac.kr](mailto:espark@snu.ac.kr)

Conference Room: 402b

2011/9/22

Chairs: Y. Zhang & Y. Z. He

0891 09:00-09:25 Ye Pan (IS)

Effects of annealing on microstructure and hardness of FeCoNiCrAlSiB(Mn0.1Mo0.3Cu0.4Ti0.2) high-entropy alloy

First A. Hui Zhang¹, Second B. Ye Pan^{2*}, and Third C. Yi-Zhu He³; ¹School of Materials Science and Engineering, Anhui University of Technology, Maanshan, Anhui, China; ²School of Materials Science and Engineering, Southeast University, Nanjing, Jiangsu, China; ³School of Materials Science and Engineering, Anhui University of Technology, Maanshan, Anhui, China; [*panye@seu.edu.cn](mailto:panye@seu.edu.cn)

0075 09:25-09:50 Swe-Kai Chen (IS)

Physical properties of the high-entropy alloys and an introduction to “pseudo-unitary lattice”

By Dr. Prof. Swe-Kai Chen, Center for Nanotechnology, Materials Science, and Microsystems, National Tsing Hua University, Hsinchu 30013, Taiwan ROC.

0202 09:50-10:10 Shou-Yi Chang (IS)

Ultra-thin (AlCrTaTiZrRux)N_y Multi-component Films as Robust Diffusion Barrier Layers for Cu Interconnect Application

Shou-Yi Chang^{*}, Chen-En Li, Sheng-Cheng Chiang, Chen-Yuan Wang, Dao-Sheng Chen, and Ming-Ku Chen; Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; ^{*}250 Kuo Kuang Rd., Taichung 40227, Taiwan; shouyi@dragon.nchu.edu.tw

0046 10:10-10:30 Chun-Huei Tsau (IS)

The low electrical resistivities of the high-entropy alloy oxide thin films

Chun-Huei Tsau^{*}, Ya-Chu Yang, Cheng-Che Lee, Lyu-Yi Wu, and Hou-Jun Huang; Institute of Nanomaterials, Chinese Culture University, Taipei 111, Taiwan;

[*chtsau@staff.pccu.edu.tw](mailto:chtsau@staff.pccu.edu.tw)

----- Break (10:30-10:45) -----

Chairs: S. Y. Chang & T. T. Shun

0143 10:45-11:10

Tao-Tsung Shun (IS)

Microstructure and age hardening of

Al_{0.3}CoCrFeNi high-entropy alloy with secondary elemental Mo, Ti, or C addition

Tao-Tsung Shun; Department of Materials Science and Engineering, Feng Chia University, Taichung 407, Taiwan; ttshun@fcu.edu.tw

0194 11:10-11:35

Chih-Chao Yang (IS)

The Industrial Applications of High-Entropy Alloys

Chih-Chao Yang¹ and Jien-Wei Yeh²; ¹Nanopowder and Thin Film Technology Center, Industrial Technology Research Institute, Tainan, Taiwan; 31, Gongye 2nd Rd., Annan Dist., Tainan 70955, Taiwan; willycyang@itri.org.tw; ²Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 101, Sec.2, Kuang Fu Rd., Hsinchu 30013, Taiwan; jwyeh@mx.nthu.edu.tw

0350 11:35-12:00 W. Wu (IS)

In situ formation of Multicomponent Alloy cladding on Low-Carbon Steel Manufactured by Gas Tungsten Arc Welding (GTAW) Process

J.H. Chen, C.M. Chang, C.M. Lin, W. Wu^{*}; Department of Materials Science and Engineering, National Chung Hsing University, Taichung 402, Taiwan, R.O.C.; *wwu@dragon.nchu.edu.tw

----- Lunch (12:00-13:40) -----

Chair: W. Wu**0212 13:40-14:00 Sheng Guo****Effect of Valence Electron Concentration on Phase Stability of Multi-component Alloys**

Sheng Guo^{1,*}, Chun Ng², Jian Lu¹, C.T. Liu¹; ¹Department of Mechanical Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, P.R. China; csuguosheng@gmail.com; ²College of Science and Engineering, City University of Hong Kong, Kowloon, Hong Kong.

0447 14:00-14:20 Wen-Ta Tsai**Effect of Pre-oxidation on Corrosion Resistance of Multicomponent FeCrNiCoMnAl High Entropy Alloys in liquid Aluminum**

Hung-Hua Yang¹, Wen-Ta Tsai^{1*}, Jui-Chao Kuo¹ and Chih-Chao Yang²; ¹Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan; ²Industrial Technology Research Institute, Tainan, Taiwan; *wtsai@mail.ncku.edu.tw

0251 14:20-14:40 Yu-Liang Chen**Alloying behaviours of some equi-molar high-entropy alloys during mechanical alloying**

Yu-Liang Chen^{1,*}, Jien-Wei Yeh², Tsung-Shune Chin³, and Swe-Kai Chen⁴; ¹Materials and Electro-Optics Research Division, Chung-Shan Institute of Science and Technology, Armaments Bureau, MND, P.O. Box 90008-8-5, Lung-Tan, Tao-Yuan, Taiwan 32599, R. O. C.; ²Department of Materials Science and Engineering, National Tsing Hua University, 101, Sec. 2, Kuang-Fu Road, Hsinchu, Taiwan 30013, R. O. C.; ³Department of Materials Science and Engineering, Feng Chia University, 100, Wenhwa Rd., Seatwen District, Taichung, Taiwan 40724, R.O.C.; ⁴Center for Nanotechnology, Materials Science and Microsystems, National Tsing Hua University, 101, Sec. 2, Kuang-Fu Road, Hsinchu, Taiwan 30013, R. O. C.; * P.O. Box 90008-8-5, Lung-Tan, Tao-Yuan, Taiwan 32599, R. O. C., allengran@gmail.com

Symposium D3

Conference Room: 521

2011/9/20**Chairs: Jer-Ren Yang & Shyi-Chin Wang****1439 13:40-14:10 H. K. D. H.****BHADESHIA (IS)****Extraordinary Ductility in Al - Bearing - trip steel**

H. K. D. H. BHADESHIA; University of Cambridge, Dept. of Materials Science and Metallurgy, Pembroke Street, Cambridge CB2 3QZ, England, U.K.; hkdb@cam.ac.uk

0581 14:10-14:25 Dong-Woo Suh (IS)**Influence of alloying elements on thermal stability of (Ti,M)C nano-sized carbide in high strength, low-alloy steels**

Dong-Woo Suh^{1*} and Jae Hoon Jang¹; ¹ Graduate Institute of Ferrous Technology, Pohang University of Science and Technology, Pohang, Republic of Korea;

*dongwool@postech.ac.kr

0081 14:25-14:40 Hung-Wei Yen**Interphase Precipitation in Low Carbon Steels**

Hung-Wei Yen^{1*}, Po-Yu Chen¹, Ching-Yuan Huang² and Jer-Ren Yang¹; ¹Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan, R.O.C.; ²Iron and Steel R&D Department, China Steel Corporation, Kaohsiung, Taiwan, R.O.C.;

*B91507047@ntu.edu.tw

0085 14:40-14:55 H. L. Yi (IS)**Acceleration of spheroidising cementite in eutectoid steel by aluminium addition**

H. L. Yi^{1*}; ¹Technical Center, Laiwu Steel, Laiwu 271104, P.R. China

1092 14:55-15:10**Akira Kobayashi (IS)****Fe-based Metallic Glass Coatings Sprayed by Gas Tunnel Type Plasma Spraying**

Akira Kobayashi^{1*}, Hisamichi Kimura², and Akihisa Inoue²; ¹Joining & Welding Res. Inst., Osaka University, Ibaraki, Osaka 567-0047, Japan; ²Inst. for Materials Res. Tohoku University, Senda, Miyagi 980-8577, Japan;

*kobayashi@jwri.osaka-u.ac.jp

----- Break (15:10-15:40) -----

Chair: Kaiming Wu**1423 15:40-15:55 K. M. Wu (IS)****Nanostructured dual-phase steels**

F. Hu, H. Zheng and K.M. Wu*; International Research Institute for Steel Technology, Wuhan University of Science and Technology, Wuhan 430081, China.

0932 15:55-16:10 Xuejun JIN (IS)
Fine Microstructure with Enhanced Mechanical Properties of Advanced High Strength Steels through an HSQPT Treatment

X. J. Jin^{1*}, H. P. Liu¹, and R. M. Wu¹; ¹School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai 200240, China; * jin@sjtu.edu.cn

0185 16:10-16:25 Mingxin Huang (IS)
On the Mechanisms Determining the Work Hardening Behaviour of Twinning Induced Plasticity Steels
Mingxin Huang^{1*}, Olivier Bouaziz^{2,3}, David Barbier², Sebastien Allain²; ¹Department of Mechanical Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong, China; ²ArcelorMittal Research, Voie Romaine-BP30320, 57283, Maizières-lès-Metz Cedex, France; ³Centre des Matériaux/Mines Paris, Paristech, CNRS-UMR7633, BP 87, 91003, Evry cedex, France; * mxhuang@hku.hk

0435 16:25-16:40 D.-Y. Lin (IS)
The influence of Al on mechanical property in TWIP steels
D.-Y. Lin^{1,2*}, Y.C. Huang¹, L.C. Yang³, Y.C. Pan⁴, S.M. Yang²; ¹Department of Chemical and Materials Engineering, National University of Kaohsiung, Kaohsiung, Taiwan; ²Fastener & Steel Research Center, National University of Kaohsiung, Kaohsiung, Taiwan; ³Department of Material and Science Engineering, National Cheng-Kung University, Tainan, Taiwan; ⁴China Steel Corporation, Kaohsiung, Taiwan; *700, Kaohsiung University Rd., Nanzih District, 811, Kaohsiung, Taiwan, R.O.C; dylin@nuk.edu.tw

2011/9/21

Chairs: Chun-Kan Hou & Shing Hoa Wang

0207 10:45-11:00 Yafang Han (IS)
Crystal growth behavior and mechanical properties of a Ni₃Al base single crystal alloy
Liwu Jiang¹, Shusuo Li², and Yafang Han^{3*}; ¹School of Materials Science and Engineering, Beihang University, Beijing, China; ²School of Materials Science and Engineering, Beihang University, Beijing, China; ³Beijing Institute of Aeronautics Materials; yfhan@buaa.edu.cn

0778 11:00-11:15 Rudder Wu (IS)
Development and Systematic Optimization of EQ-Coatings for High Temperature Structure Materials
Rudder Wu; ¹International Center for Young Scientists (ICYS), National Institute for Materials Science (NIMS), 1-2-1 Sengen Tsukuba, Ibaraki 305-0047, Japan; Wu.Rudder@nims.go.jp

0256 11:15-11:30 Ken-Tu Hsu
Influence of Heat Treatments on Creep Behavior of Directionally Solidified CM247LC Superalloy
Hui-Yun Bor¹, Chao-Nan Wei¹, Ken-Tu Hsu^{2*}, Huei-Sen Wang², and Chen-Ming Kuo³; ¹Materials and Electro-Optics Research Division, Chun-Shan Institute of Science and Technology, Taoyuan, Taiwan; ²Department of Materials Science and Engineering, I-Shou University, Kaohsiung, Taiwan; ³Department of Mechanical and Automation Engineering, I-Shou University, Kaohsiung, Taiwan; *1, Sec. 1, Syuecheng Rd., Dashu, Kaoshiung, 84001, Taiwan; bulato1980@yahoo.com.tw

0247 11:30-11:45 Chao-Nan Wei
The Influence of Grain Boundary Strengthening Effect on Tensile Property at Elevated Temperature of Fine-Grain CM-681LC Superalloy
Chao-Nan Wei^{1*}, Hui-Yun Bor¹, Cuo-Yo Nieh¹, and Li Chang²; ¹Metallurgy Section, Materials & Electro-Optics Research Division, Chung-Shan Institute of Science and Technology, Lung Tan, 32599, Republic of China; ²Department of Materials Science and Engineering, National Chiao-Tung University, Taiwan 30050, Republic of China; chaonien@ms41.hinet.net

0540 11:45-12:00 Jinxia SONG
Effect of Re on the microstructure stability of the third directionally solidified superalloy DZ12
Jinxia SONG *, Dinggang WANG, Chengbo XIAO, Dingzhong TANG; National Key Laboratory of Science and Technology on advanced High Temperature Structural Materials, Beijing Institute of Aeronautical Materials, Beijing, PR China 100095; songjx@vip.sina.com

----- Lunch (12:00-13:40) -----

Chair: Yafang Han

0415 13:40-13:55 S.-S. Lian (IS)
Corrosion Behavior of High Nitrogen Nickel-free Stainless Steels Fe-16Cr-2Co-Mn-Mo-N alloy
K.-L. Chao, Y.-L. Ke, S.-S. Lian; Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan; lian@ntu.edu.tw

0404 13:55-14:10 A. Zargaran
Effect of Mn and Ni Additions on the Microstructure of Fe-Al Alloys
A. Zargaran^{1*}, Nack J. Kim^{1,2}; ¹Graduate Institute of Ferrous Technology, POSTECH, Pohang, 790-784, Korea; ²CAAM, POSTECH, Pohang, 790-784, Korea; * alireza@postech.ac.kr

0697 14:10-14:25 Chao-Sung Lin (IS)**Microstructure Characterization Techniques for Galvannealed Steel Sheets**

Peng-Wei Chu¹, Ko-Chun Lin¹, Chao-Sung Lin^{1*} and Hon-Bor Chen²; ¹ Department of Materials Science and Engineering, National Taiwan University, Taipei 106, Taiwan; ² Steel & Aluminum Research & Development Department, China Steel Corporation, Kaohsiung 802, Taiwan; * csclin@ntu.edu.tw

0642 14:25-14:40 Yung-Ning Pan (IS)**Study on the Microstructure Characteristics and Optimal Casting Conditions for the Production of Key Components Used in Large-scale Windmills**

Yung-Ning Pan^{1*} and Chi-Chia Lin; ¹Department of Mechanical Engineering, National Taiwan University, Taipei, Taiwan; ²Metal Industries Research and Development Center, Kaohsiung, Taiwan; * panyn@ntu.edu.tw

0267 14:40-14:55 An-Chou Yeh (IS)**Effects of Rejuvenation Heat Treatment on High Temperature Creep and Oxidation Properties of René 142 DS Superalloy**

Hui-Yun Borl, Chao-Nan Wei¹, An-Chou Yeh^{2*}, Ping Lee³, Chun-Yu Lin³, and Chen-Ming Kuo³, Kentaro Tokinaga⁴, Koji Kakehi⁴; ¹ Materials and Electro-Optics Research Division, Chung-Shan Institute of Science and Technology, Taoyuan, Taiwan (R.O.C.); ² Metal Processing R&D Department, Metal Industries Research & Development Centre, Kaohsiung, Taiwan (R.O.C.); ³ Department of Mechanical and Automation Engineering, I-Shou University, Kaohsiung, Taiwan (R.O.C.); ⁴ Department of Mechanical Engineering, Tokyo Metropolitan University, Tokyo, Japan; *Metal Processing R&D Department, Metal Industries Research & Development Centre, 1001 Kaonan Highway, Kaohsiung, Taiwan (R.O.C.) 81160; acyphd@mail.mirdc.org.tw

----- Break (15:00-15:40) -----

Chair: Chao-Sung Lin**0417 15:40-15:55 Hung-Mao Wu****A Novel Core-Shell Composite Structure for Metallurgical Filler Sand**

Hung-Mao Wu, Tzu-Tsung Tseng, Chun-Nan Chen, Chia-Chin Cheng, Jun-Yen Uan, Weite Wu, and Wenjea J. Tseng*; Department of Materials Science and Engineering, National Chung Hsing University, 250 Kuo Kuang Road, Taichung 402, Taiwan; wenjea@dragon.nchu.edu.tw

0388 15:55-16:10 Pingfang Shi**Thermodynamic Calculations and Kinetic Simulations of Solidification Processes in Steel-/Alloy-Making and Other Industries**

Pingfang Shi^{1*}, Anders Engström¹, Qing Chen¹, Johan Bratberg¹ and Lars Höglund^{1,2,1}; Thermo-Calc Software AB, Norra Stationsgatan 93, SE-113 64 Stockholm, Sweden; ² Dept. of Materials Sci. & Eng., Royal Inst. of Tech. (KTH), SE-100 44 Stockholm, Sweden; * pingfang@thermocalc.se

0160 16:10-16:25 E-Wen Huang**Three-orthogonal-direction Stress Mapping around a Fatigue-crack Tip Using Neutron Diffraction**

E-Wen Huang^{1*}, Kuan-Wei Lee¹, Yi-Shiun Ding², Leu -Wen Tsay², Soo Yeol Lee^{3,4}, and Wanchuck Woo⁵; ¹Department of Chemical & Materials Engineering and Center for Neutron Beam Applications, National Central University, Jhongli City, 32001, Taiwan (R. O. C.); ²Institute of Materials Engineering, National Taiwan Ocean University, Keelung, 20224, Taiwan (R. O. C.); ³Department of Materials Engineering, the University of British Columbia, Vancouver, B.C., V6T 1Z4, Canada; ⁴Canadian Neutron Beam Centre, National Research Council Canada, Chalk River, ON K0J 1J0, Canada; ⁵Neutron Science Division, Korea Atomic Energy Research Institute, Daejeon, 305-353, South Korea; * ewhuang@ncu.edu.tw

0564 16:25-16:40 xin-kun Zhu**The influence of Stacking Fault Energy on compression test of Cu and Cu-Al Alloys**

Yang hao¹, Wu xiao-xiang², San xing-yuan³, Shen li⁴, and Zhu xin-kun^{*5}; ¹Department of Materials Science and Engineering, Kunming University of Science and Technology, Kunming, China; ²Department of Materials Science and Engineering, Kunming University of Science and Technology, Kunming, China; ³Department of Materials Science and Engineering, Kunming University of Science and Technology, Kunming, China; ⁴Department of Materials Science and Engineering, Kunming University of Science and Technology, Kunming, China; ⁵Department of Materials Science and Engineering, Kunming University of Science and Technology, Kunming, China; * xk_zhu@hotmail.com

Symposium D4

Conference Room: 634

Chair: Nyan-Hwa Tai

2011/9/21

0433 13:40-13:58 Shao-Kuan Lee

Characterization of adhesion strength and thermal conductivity of Cu/Al₂O₃ laminates

Shao-Kuan Lee^{1*}, Wei-Hsing Tuan²; ^{1,2}Dept. of Mater. Sci. & Eng., National Taiwan University, Taipei, Taiwan; *
d98527003@ntu.edu.tw

0839 13:58-14:16 JUYING TONG

Influence of Pore-forming Agent on the Performance of Resin Bond Diamond Grinding Wheel in Back-grinding Silicon Wafers

Kehua Li^{1,2}, Qiang Guo^{1*}, Mingyao Liu², Yanjun Zhao², Dongli Shi²; ¹School of Materials Science and Engineering, Shanghai University, 201800, Shanghai, China; ²Zhengzhou Research Institute for Abrasives & Grinding, 450013, Zhengzhou, China; * guoq@shu.edu.cn

0044 14:16-14:34 Xingfa Ma

Nanocomposites of Carbon Nanotube (CNTs)/CuO with High Sensitivity to Organic Volatiles at Room Temperature

Xingfa Ma^{1,2*}, Qingqing Zhang¹, Xiaochun He¹, Mingjun Gao¹, Jing Zheng¹ and Guang Li³; ¹School of Environmental and Material Engineering, Center of Advanced Functional Materials, Yantai University, Yantai 264005, P. R. China; ²State Key Laboratory of Silicon Materials, Zhejiang University, Hangzhou 310027, P. R. China; ³National Laboratory of Industrial Control Technology, Institute of Advanced Process Control, Zhejiang University, Hangzhou 310027, P. R. China; xingfamazju@yahoo.com.cn; xingfazju@163.com

0449 14:34-14:52 Qiang Guo

Research on Friction and Wear Behaviors of PEEK/PEI/PES Plastics Alloys under Sliding Contact Condition

Jian-Bing Chen^{1,2}, Si-Gang Zhang¹, Zheng-Ping Zhao¹, Qiang Guo^{1*}, and Xian-Li Shao¹; ¹School of Materials

Science and Engineering, Shanghai University, Shanghai 201800, China; ²Department of Chemistry and Food Science, Chizhou College, Chizhou 247000, China; *Corresponding Author: 20 Chengzhong Rd., Mailbox No. 817, Shanghai University, Jia-Ding District, Shanghai, 201800, China; guoq@shu.edu.cn

----- Break (15:00-15:40) -----

0145 15:40-15:58 Yi-Han Hsu

Ag₂O-Sensitized GaOOH Nanorods with Visible-Light-Driven Photocatalytic Activity

Yi-Han Hsu and Yung-Jung Hsu^{*}; Department of Materials Science and Engineering, National Chiao Tung University Hsinchu, Taiwan 30010, Republic of China; yhsu@cc.nctu.edu.tw

0473 15:58-16:16 Nyan-Hwa Tai

Syntheses of carbon nanotubes and graphene and their application in electromagnetic interference shielding

Nyan-hwa Tai^{1*}, Ming-chuen Yip², Yin-ju Chen¹; ¹Department of Materials Science and Engineering, ²Department of Power Mechanical Engineering; National Tsing-Hua University, Hsinchu 30013, Taiwan; * nhtai@mx.nthu.edu.tw

0529 16:16-16:34 T. Ashokkumar

Processing dense mechanical alloying 50wt. % Ni-Fe nanopowder by spark plasma sintering

T.Ashokkumar^{a,*}, A.Rajadurai^b and Gouthama^c; ^aRajalakshmi Engineering College, Thandalam 602105, India; ^bMadras Institute of Technology, Chromepet 600044, India; ^cIndian Institute of Technology, Kanpur 208016, India; ntashoknt@yahoo.co.in

Symposium D5

Conference Room: 509

Chairs: Jia-Hong Huang, Fu-Hsing Lu, Yuichi Setsuhara

2011/9/20

0995 13:40-14:05 Yuichi Setsuhara (IS)

Plasma-Assisted Deposition of Functional Thin Films and Process Analyses for Development of Flexible Electronics

Yuichi Setsuhara^{1,2,*}; ¹Joining and Welding Research Institute, Osaka University, Ibaraki, Osaka, Japan; ²Core Research for Evolutional Science and Technology (JST-CREST), Japan Science and Technology Agency, Japan; *Joining and Welding Research Institute, Osaka University, 11-1 Mihogaoka, Ibaraki 567-0047, Japan; setsuhara@jwri.osaka-u.ac.jp

0444 14:05-14:20 Wen-Ta Tsai

Mechanical property and corrosion performance of Electrodeposition Ni-P Alloy Coatings Fabricated in Emulsified Supercritical CO₂ Bath

Sung-Ting Chung, Yan-Chi Chuang, Shih-Yi Chiu, Wen-Ta Tsai*; Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan; * wttsai@mail.ncku.edu.tw

0603 14:20-14:35 Wei-Ja Shong

Effects of Electroless Nickel Plating on 441 Stainless Steel as Interconnect for Solid Oxide Fuel Cells

Wei-Ja Shong*, Chien-Kuo Liu, Peng Yang, and Ruey-Yi Lee; Nuclear Fuels and Materials Division, Institute of Nuclear Energy Research, Taiwan, R.O.C.; *1000, Wunhua Rd., Jiaan Village, Longtan township, Taoyuan county 32546, Taiwan, R.O.C.; wjshong@iner.gov.tw

0605 14:35-14:50 Chien-Kuo Liu
Effects of Pre-oxidation on the Microstructural and Electrical Properties of La_{0.67}Sr_{0.33}MnO₃ Coated Ferritic Stainless Steels

Peng Yang¹, Chien-Kuo Liu^{1*}, Jin-Yu Wu², Wei-Ja Shong¹, and Ruey-Yi Lee¹; ¹ Nuclear Fuels and Materials Division, Institute of Nuclear Energy Research, Taiwan, R.O.C.; ² Physics Division, Institute of Nuclear Energy Research, Taiwan, R.O.C.; *1000, Wunhua Rd., Jiaan Village, Longtan township, Taoyuan county 32546, Taiwan, R.O.C.; ckliu2@iner.gov.tw

0132 14:50-15:05 Aki Egashira
Formation of Antireflection Coating by Hydrothermal Treatment of Al Films and Stabilization by Dehydration of Them

Aki Egashira¹, Takuji Ube¹, and Takashi Ishiguro^{1*}; ¹ Dept. of Materials Science and Technology, Faculty of Industrial

Science and Technology, Tokyo University of Science, 2641, Yamazaki, Noda, Chiba 278-8510, Japan; * ishiguro@rs.noda.tus.ac.jp

2011/9/21

0346 10:45-11:00 Chien-hung Lien
Texture Control of Bi Deposits Using Experimental Strategies

Chien-hung Lien, Yi-Da Tsai, David Shan-Hill Wang, Chi-Chang Hu*; Department of Chemical Engineering, National Tsing Hua University, Hsin-Chu, 30013 Taiwan; * cchu@che.nthu.edu.tw

0684 11:00-11:15 Hien Do
Epitaxial growth of titanium oxycarbide on MgO (001) substrates by pulsed laser deposition

Hien Do*, Tzu-Chun Yen, Chih-Sheng Tian, Yue-Han Wu, and Li Chang; Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, 1001, Tahsueh Road, Taiwan; * dohienvl@gmail.com

0999 11:15-11:30 Jung Whan Yoo
Fabrication of TiO₂@SiO₂ hybrid nanoparticles for enhancing UV-shielding and hydrophilic properties of protection film

Jung Whan Yoo^{1*}, Hyeong Seok Lee^{1,2}, Se Mi Im^{1,3}; ¹Eco-composite Materials Center, Korea Institute of Ceramic Engineering and Technology, 233-5, Gasan-Dong, Geumcheon-Gu, Seoul, Korea; ² Department of Chemical Engineering, Hanyang University, Seoul, Korea; ³Department of Chemistry, Inha University, Incheon, Korea; * jwyoo@kicet.re.kr

0259 11:30-11:45 Z. D. Feng
Vertically oriented mesoporous titania film formed via structural transformation and its surface superhydrophilicity

Z.D. Feng, H. Zhou, C. Wang, S.W. Li, B.B. Xu; College of Materials, Xiamen University, Xiamen 361005, China; * College of Materials, Xiamen University, Xiamen 361005, China; zdfeng@xmu.edu.cn

0154 11:45-12:00 Joonsik Park
Interface Reactions of Si Pack Cementation Coated Mo-Si-B Alloys

Youngho Song¹, Jeongmin Kim¹, Joonsik Park^{1*}, and Seonghoon Yi²; ¹ Division of Advanced Materials, Hanbat National University, Daejeon, 305-719 Korea; ² Department of Materials Science and Metallurgical Engineering, Daeju, Korea; * jsphb@hanbat.ac.kr

----- Lunch (12:00-13:40) -----

0897 13:40-14:05
Masahiro Yoshimura (IS)
Growing Integration Layer [GIL] Strategy for Fabrication of Compositionally, Structurally and/or Functionally Graded Ceramic Films and/or Coatings on Mother Materials in Solution

Masahiro YOSHIMURA^{1,2)*}; ¹Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, 226-8503, Japan; yoshimura@msl.titech.ac.jp; ² Materials Science and Engineering: National Cheng Kung University, Tainan, 70101 Taiwan; yoshimur@mail.ncku.edu.tw

0220 14:05-14:20 Siou Ming Hsu
Effect of Cu and Ni undercoats on the corrosion resistance of Cr-deposited steel specimens in 0.1 M H₂SO₄ solution with 1 g/L NaCl

Siou Ming Hsu^{1*}, Ching An Huang², Yu Wei Liu³; ¹ Department of Mechanical Engineering, Chang Gung University, Taoyuan, Taiwan; ² Department of Mechanical Engineering, Chang Gung University, Taoyuan, Taiwan; ³ Department of Mechanical Engineering, Chang Gung University, Taoyuan, Taiwan; *259 Wen-Hwa 1st Road, Kwei-Shan Tao-Yuan, Taiwan, 333, R.O.C.; m9822001@stmail.cgu.edu.tw

0940 14:20-14:35 Jin Woo Kim
Correlation between Metal Substrates and Properties of Yttrium Oxide Film Prepared by Aerosol Deposition Process

Jin Woo Kim¹, Dong Soo Park², Jung Hwan Lee², and Eun Soo Park^{1*}; ¹ Research Institute of Advanced Materials, Department of Material Science and Engineering, Seoul National University, 599 Gwanak-ro, Gwanak-gu, Seoul 151-744, Republic of Korea; ² Functional Ceramics Group, Korea Institute of Materials Science (KIMS), Gyeongnam 641-831, Korea; * espark@snu.ac.kr

0794 14:35-14:50 Gang Liu
Size-dependent mechanical properties of nanostructured metal multilayer films

Gang Liu* · Jun Sun⁺; State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an, 710049, China

----- Break (15:00-15:40) -----

0366 15:40-16:05
Hsin-Hsing Yin (IS)
Soda lime glass thin film on flexible stainless steel substrate by sol-gel technique

Hsin-Hsing Yin^{1*}, Jyh-Ming Ting^{1,2}; ¹ Department of material science and engineering, National Cheng Kung University, 70101 Tainan, Taiwan; ² Institute of nanotechnology and Microsystems engineering, National Cheng Kung University, 70101 Tainan, Taiwan; No.1, University Road, Tainan City 70101, Taiwan; * jting@mail.ncku.edu.tw

0524 16:05-16:20 Akira Kobayashi
Fe-based Metallic Glass Coatings Sprayed by Gas Tunnel Type Plasma Spraying

Akira Kobayashi^{1*}, Hisamichi Kimura², and Akihisa Inoue²; ¹ Joining & Welding Res. Inst., Osaka University, Ibaraki, Osaka 567-0047, Japan; ² Inst. for Materials Res. Tohoku University, Sendai, Miyagi 980-8577, Japan; * kobayashi@jwri.osaka-u.ac.jp

0780 16:20-16:35 Rudder Wu
Fundamental Mechanisms Underlying the Beneficial Effects of Platinum Modification of Thermal Barrier Coatings

Rudder Wu; ICYS, National Institute for Materials Science, 1-2-1 Sengen, Tsukuba, Ibaraki, JAPAN

0550 16:35-16:50 Limin He
Thermal cycling behavior of 8YSZ and La₂(Zr_{0.7}Ce_{0.3})₂O₇ as bilayer EB-PVD TBCs
Limin He*, Zhenhua Xu, Jianping Li, Rende Mu, Shimei He, Guanghong Huang; Beijing Institute of Aeronautical Materials, Department 5, P.O. Box 81-5, Beijing 100095, China.; * he_limin@yahoo.com

Symposium E1

Conference Room: 609

2011/9/20
Chairs: Jen-Sue Chen & Yu-Lun Chueh
0986 13:40-14:10 Dojin Kim (IS)
Highly porous oxide nanowires towards high performance gas sensors

Dojin Kim^{1*}, Nguyen Duc Hoa², Wei Li¹, Nguyen Minh Vuong¹, Hoang Nhat Hieu¹, Hyuck Jung¹, DongMi Jang¹, Se Yong An¹, Nguyen Quoc Dung¹, Dewyani Janardan Patil¹;
¹Department of Materials Science and Engineering, Chungnam National University, Daejeon, Korea; ²Int. Training Inst. for Materials Science, Hanoi University of Science and Technology, Hanoi, Vietnam; *dojin@cnu.ac.kr

0881 14:10-14:40 Hiroshi Kezuka (IS)
Characterizations of shocked Bi-superconducting crystal grains by annealing effects

Hiroshi Kezuka; Tokyo University of Technology (Computer Science, Tokyo, Hachioji, Japan); *1404-1 Katakura, Hachioji, Tokyo 192-0982 Japan; *kezuka@cs.teu.ac.jp

0609 14:40-15:00 Yi-Hsuan Lu
Fabrication of Cu²⁺-doped ZnO Nanocrystals Using a Facile Green Antisolvent Method

Yi-Hsuan Lu and Yung-Jung Hsu^{*}; Department of Materials Science and Engineering, National Chiao Tung University; Hsinchu, Taiwan 30010, Republic of China; *yhsu@cc.nctu.edu.tw

----- Break (15:00-15:40) -----

Chairs: Dojin Kim & Hiroshi Kezuka
1175 15:40-16:10 J. F. Kang (IS)
Material-Oriented Methodology for High Performance TMO-based RRAM

J.F. Kang^{*}, B. Gao, B. Chen, F.F. Zhang, L.F. Liu, X.Y. Liu; Institute of Microelectronics, Peking University, Beijing 100871, China; *kangjf@pku.edu.cn

0768 16:10-16:40 Ying-Hao Chu (IS)

Multiferroicity in strained engineered BiFeO₃ Thin Films
 Department of Materials Science and Engineering; National Chiao Tung University, Hsinchu, Taiwan 30010

0158 16:40-17:00 K. Yasui

Properties of ZnO thin films grown on glass substrates using high-energy H₂O generated by a catalytic reaction on Pt nanoparticles

S. Satomoto¹, M. Tahara¹, T. Kato¹, and K. Yasui^{*}; ¹Dep. of Electrical, Electronic, & Information Eng., Nagaoka Univ. of

Technol. 1603-1 Kamitomioka, Nagaoka 940-2188, Japan; *kyasui@vos.nagaokaut.ac.jp

2011/9/21
Chairs: J.F. Kang & Hyeongtag, Jeon
0487 10:45-11:15
Hyeongtag Jeon (IS)
High-k Oxide deposition with remote plasma atomic layer deposition

Jaesang Lee¹ and Hyeongtag Jeon^{1,2}; ¹Department of Nano-scale Semiconductor Engineering, Hanyang University, Seoul 133-791, Korea; ²Division of Materials Science & Engineering, Hanyang University, Seoul, 133-791, Korea

0101 11:15-11:35 Jian-Zhang Chen
Stability of the Thin Film Transistor with Mg_{0.05}Zn_{0.95}O Active Layer

Yi-Shiuan Tsai¹, Jian-Zhang Chen^{1*}, and I-Chun Cheng²; ¹Institute of Applied Mechanics, National Taiwan University, Taipei 10617, Taiwan; ²Department of Electrical Engineering & Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taipei 10617, Taiwan; *jchen@ntu.edu.tw

0352 11:35-11:55 Koichi Nagamoto
Bending Properties of Ga-Doped Zinc Oxide Films Deposited on PET Substrates Prepared by Ion-plating Deposition with DC Arc Discharge

Koichi Nagamoto^{1*}, Takeshi Kondo¹, Satoshi Naganawa¹, Kunihi Kato¹, Yasushi Sato², Hisao Makino², Naoki Yamamoto² and Tetsuya Yamamoto²; ¹Research Center, LINTEC Corporation, Warabi, Saitama, Japan; ²Material Design Center, Kochi University of Technology, Kami, Kochi, Japan; *k-nagamoto@post.lintec.co.jp

----- Lunch (12:00-13:40) -----

Chairs: J. B. Wang & Tetsuya Yamamoto
0713 13:40-14:10
Ping-Hung Yeh (IS)

Schottky barrier height varied by the thermal and the charged molecules adsorption effect

Ping-Hung Yeh^{*}; Department of Physics, Tamkang University, Tamsui, TAIWAN 251, Republic of China; *phyeh331@mail.tku.edu.tw

1441 14:10-14:40 J. B. Wang (IS)

Electrocaloric effect in low dimensional ferroelectrics
J. B. Wang*, B. Li, X. Zhang, X. L. Zhong and Y. C. Zhou;
Faculty of Materials, Optoelectronic and Physics, Xiangtan
University, Xiangtan, China; *Faculty of Materials,
Optoelectronic and Physics, Xiangtan University, Xiangtan
411105, China; *jbwang@xtu.edu.cn

0244 14:40-15:00 Zhe Chuan Feng
Rutherford Backscattering and Optical Investigation of
High In-Compositional InGaN Thin Films Grown on
ZnO Substrates

Yee Ling Chung¹, Lin Li², Shude Yao², Nola Li³, Ian
Ferguson⁴, Dong-Sing Wu⁵ and Zhe Chuan Feng^{1,*}; ¹
Graduate Institute of Photonics & Optoelectronics, and
Department of Electrical Engineering, National Taiwan
University, Taipei, Taiwan 106-17, ROC; ²State Key
Laboratory of Nuclear Physics & Technology, Peking
University, Beijing, 100871 China; ³School of Electrical and
Computer Engineering, Georgia Institute of Technology,
Atlanta, GA 30332-0250, USA; ⁴Department of Electrical and
Computer Engineering, University of North Carolina
Charlotte, Charlotte, NC 28223-0001, USA; ⁵Department of
Materials Science and Engineering, National Chung Hsing
University, Taichung, 402-27 Taiwan, ROC;
*fengzc@cc.ee.ntu.edu.tw

----- Break (15:00-15:40) -----

Chairs: Tamio Endo & Ping-Hung Yeh

0517 15:40-16:10 Jr-Hau He (IS)

ZnO Nanostructures for Light Harvesting
Jr-Hau He*; Institute of Photonics and Optoelectronics &
Department of Electrical Engineering, National Taiwan
University, Taipei, 10617, Taiwan; *jhhe@cc.ee.ntu.edu.tw

0002 16:10-16:30 Kuan Yew Cheong
Effects of Oxidation Temperature on Electrical and
Physical Properties of Sputtered Zr Thin Film Based on Si
in N₂O Ambient

Yew Hoong Wong¹ and Kuan Yew Cheong^{1,*}; ¹Energy
Efficient & Sustainable Semiconductor Research Group,
School of Materials and Mineral Resources Engineering,
Engineering Campus, Universiti Sains Malaysia, 14300
Nibong Tebal, Seberang Perai Selatan, Penang, Malaysia;
*cheong@eng.usm.my

0062 16:30-16:50 Sheng-Yuan Chu
Room Temperature growth Highly conductive transparent
GZO films on PES Substrates and the application of ZnO
thin film transistors

Jia-Ling Wu^{1*}, Sheng-Yuan Chu^{1*}; ¹Department of Electrical
Engineering, National Cheng Kung University, No. 1, Dasyue
Rd., East District, Tainan City 701, Taiwan;
*chusy@mail.ncku.edu.tw

2011/9/22

Chairs: Z. C. Feng & Motofumi Suzuki

1453 09:00-9:30

Tetsuya YAMAMOTO (IS)

Carrier transport through grain boundaries in
highly transparent conductive Ga-doped ZnO
films for use in LCD-TV

T. Yamamoto^{1*}, H. Song¹, H. Makino¹ and N.
Yamamoto¹; ¹ Materis Design Center, Kochi
University of Technology, Kochi, Japan;
*yamamoto.tetsuya@kochi-tech.ac.jp

0979 09:30-10:00 Zhi Chen (IS)

Origin of Tunneling Current Reduction and
Phonon-Energy Coupling Enhancement in the
SiO₂/Si System

Zhi Chen*, Pang-Leen Ong, Yichun Wang, and Lei
Han; Department of Electrical & Computer
Engineering, University of Kentucky, Lexington,
Kentucky, USA; *zhichen@engr.uky.edu

0114 10:00-10:20 Yijia J. Chen

XPS study of p-type ZnO doped with arsenic
Yijia J. Chen^{1*}, Hsin-Wei Jen¹, and Ming-Show
Wong¹; ¹Department of Materials Science and
Engineering, National Dong Hwa University,
Hualien, Taiwan; *yjchen@mail.ndhu.edu.tw

----- Break (10:30-10:45) -----

Chairs: Zhi KY Chen & Tomoaki
Terasako

1442 10:45-11:05 Joo-Hee Kang

SnO₂-Layered Titanate Nanohybrids as an
Anode Material in Lithium Ion Battery
Joo-Hee Kang, and Jin-Ho Choy*; Center for
Intelligent Nano-Bio Materials (CINBM),
Department of Chemistry and Nano Science and
Department of Bioinspired Science, Ewha Womans
University, Seoul 120-750, Korea

0144 11:05-11:25 Jing-Mei Li
Anodic deposition of Vanadium oxide thin film
with high power characteristics for the
lithium-ion supercapacitors

Jing-Mei Li, ¹ Kuo-Hsin Chang, ^{1,2,a} Chi-Chang
Hu^{1,a,*}; ¹Department of Chemical Engineering,
National Tsing Hua University, 101 Section 2,
Kuang-Fu Rd., Hsin-Chu 30013, TAIWAN;
²Department of Chemical Engineering, National
Chung Cheng University, 168 University Rd.,
Min-Hsiung, Chia-Yi 621, TAIWAN

0819 11:25-11:45 Chang-Lin Chiang
The gas discharge properties with different working gas at various pressures between planar FTO electrodes

Chang-Lin Chiang^{1,2*}, Ming-Chung Liu², Chia-Hung Li^{1,2}, Jung-Yu Li², Shih-Pu Chen², Yi-Ping Lin², Po-Hung Wang², Hao-Yu Qiu³, Guan-Jun Qiu³, Cheng-Hung Li², Hsiung-Chun Hung², Hui-Kai Zeng³, Tai-Chiung Hsieh¹, Jenh-Yih Juang¹;

¹ Department of Electrophysics (National Chiao Tung

University, 1001 Ta-Hsueh Road, Hsinchu 300, Taiwan); ² Green Energy & Environment Research Laboratories (Industrial Technology Research Institute, 195, Sec. 4, Chung-Hsin Road, Chutung 310, Taiwan); ³ Department of Electronic Engineering (Chung Yuan Christian University, Chung Li 320, Taiwan); *CLChiang@itri.org.tw

Symposium E2

Conference Room: 644

2011/9/21

0105 11:10-11:25 J.F. Peng
Enhancement on the effective piezoelectric coefficient of 0.94(Na_{0.5}Bi_{0.5})TiO₃-0.06BaTiO₃ ferroelectric thin films under moderate annealing temperature

J.F. Peng^a, X.J. Zheng^{a,b}, D.Z. Zhang^a; ^a Faculty of Materials, Optoelectronics and Physics, Xiangtan University, Xiangtan, Hunan 411105, PR China; ^b Key Laboratory of Low Dimensional Materials and Application Technology of the Ministry of Education, Xiangtan University, Xiangtan, Hunan 411105, PR China; jiuyisky@gmail.com

0461 11:25-11:45 Xuan Cheng (IS)
In-situ XRD investigations of electric-induced 90° domain switching and phase transition near morphotropic phase boundary

Xuan Cheng^{1,2}, Fengjuan Yang¹, Sa Zhang^{1,2}, Ying Liu¹, Ying Zhang^{1,2*}; ¹ Department of Materials Science and Engineering, College of Materials; ² Fujian Key Laboratory of Advanced Materials
 Xiamen University, Xiamen Fujian 361005, China;
 *yzh@xmu.edu.cn

0608 11:45-12:00 M. H. Tang
The influence of field-dependent carrier mobility and permittivity on space-charge-limited leakage current characteristics in high dielectric constant and ferroelectric thin films

Y. G. Xiao¹, M. H. Tang^{1*}, and J. C. Li²; ¹ Key Laboratory for Low Dimensional Materials and Application Technology of Ministry of Education (Xiangtan University), Xiangtan, Hunan, 411105, China; ² ASIC R&D Center, School of Electronic Science and Engineering of National University of Defense Technology, Changsha, Hunan, 410073, China;
 *mhtang@xtu.edu.cn

----- Lunch (12:00-13:40) -----

0874 13:40-14:00 Z.X. Xiong (IS)

Influence of CuO and MnCO₃ Additives on the Microwave Dielectric Properties of

Ca_{0.65}Ti_{0.65}La_{0.35}Al_{0.35}O₃ Ceramics

Z.X. Xiong^{*}, Y.X. Cai, J.S. Zheng, H. Xue, and H. Qiu; Department of Materials Science and Engineering, Xiamen University, Xiamen, China;
 *zxxiong@xmu.edu.cn

0431 14:00-14:15 Chun-Huy Wang

Effect of Bi₂O₃ addition on the physical and electrical properties of lead-free (Na_{0.5}Bi_{0.5})TiO₃-Ba(Sn_{0.08}Ti_{0.92})O₃ ceramics

Chun-Huy Wang; Department of Electronic Engineering, Nan-Jeon Institute of Technology, Tainan, Taiwan 73746; *wangch@mail.njtc.edu.tw

0689 14:15-14:30 L. Wang

Novel Incipient Ferroelectrics Based on Ba₄MNb_xTa_{10-x}O₃₀ where M = Zn, Mg, Co, Ni

L.Wang,^{1,2} Y.Sakka,^{1,2} D.A.Rusakov,³ Y.Mozharivskyj,⁴ and T.Kolodiazhnyi^{3,*}; ¹ Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; ² National Institute for Materials Science, Tsukuba, Japan; ³ National Institute for Materials Science, Tsukuba, Japan; ⁴ Department of Chemistry, McMaster University, Hamilton, Canada; *kolodiazhnyi.taras@nims.go.jp

0460 14:30-14:50 Guohong Yun
High Performance Ru₈₅Se₁₅ Catalysts for PEM Fuel Cell Applications

Qiaoming Zheng¹, Xuan Cheng^{1,2*}; ¹ Department of Materials Science and Engineering, College of Materials, ² Fujian Key Laboratory of Advanced Materials, Xiamen University, Xiamen Fujian 361005, China; Ting-Chu Jao, Fang-Bor Weng^{*}, Ay Su, Yu-Chun Chiang, Fuel Cell Center, Yuan Ze University, Zhongli Taoyuan 320, Taiwan, China; *xcheng@xmu.edu.cn, fangbor1@hotmail.com

0879 14:50-15:05 Hyun-A Song
Characterization of the Bi₂Mg_{2/3}Nb_{4/3}O₇(BMNO)-Bi Nanostructured Thin Films grown at Room Temperature by RF-Sputtering

Hyun-A Song^{1*}, Hyun-June Jung², and Soon-Gil Yoon^{3, 1*, 2}
School of Nano Science and Technology, Chungnam National University, Daeduk Science Town, 305-764, Daejeon, Korea;
³Graduate of Analytical Science and Technology (GRAST), Chungnam National University, Daeduk Science Town, 305-764, Daejeon, Korea; *sgyoon@cnu.ac.kr

----- Break (15:05-15:40) -----

1037 15:40-16:00 Jan-Chi Yang
Electronic Transport on 90 Degree Domain Walls in Multiferroic BiFeO₃

Jan-Chi Yang^{1*}, Chao-Hui Yeh², Shan-Lin Wu², Qing He³, Chun-Yen Peng¹, Carolina Adamo⁴, Li Chang¹, Darrell Schlom⁴, Ramamoorthy Ramesh³, Po-Wen Chiu² and Ying-Hao Chu^{1,3}; ¹ Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, 300, Taiwan; ² Institute of Electronics Engineering, National Tsing Hua University, HsinChu, 300, Taiwan; ³ Department of Physics, University of California, Berkeley, Berkeley, CA 94720; ⁴ Department of Materials Science and Engineering, Cornell University, Ithaca, NY 14853; *kjyang1120@gmail.com

0035 16:00-16:15 Yen-Ting Liu
Growth of BiFeO₃/LaNiO₃ artificial superlattice structures by RF sputtering
Yen-Ting Liu¹, Shang-Jui Chiu², Hsin-Yi Lee^{3,4*} and

San-Yuan Chen³; ¹Program for Science and Technology of Accelerator Light Source, National Chiao Tung University, Hsinchu, Taiwan; ²Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan; ³Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan; ⁴National Synchrotron Radiation Research Center, 101 Hsin-Ann Road, Hsinchu Science Park, Hsinchu, Taiwan; *hylee@nsrrc.org.tw

0361 16:15-16:30 W. Z. Chang
Preparation and Characterization of HoScO₃ Thin Films Applied on the Resistance Random Access Memory

W. Z. Chang¹, J. P. Chu^{1*}, and S. F. Wang²;
¹Graduate Institute of Engineering and Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei 10607, Taiwan; ²Department of Materials and Minerals Resources Engineering, National Taipei University of Technology, Taipei 10608, Taiwan; *jpchu@mail.ntust.edu.tw

0096 16:30-16:45 Jun Zhu
Integrated growth of BiFeO₃ ferroelectric films on GaN semiconductor substrates

Jun Zhu^{*}, Yanrong Li; State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronics Science and Technology of China, Chengdu 610054, People's Republic of China; *junzhu@uestc.edu.cn

Symposium E3

Conference Room: 503

2011/9/20

Chair: L. J. Chou

1019 13:40-14:00 Chongwu Zhou (IS)
Carbon Nanotube Nanoelectronics and Macroelectronics
Chongwu Zhou^{1*}; ¹ Department of Electrical Engineering, University of Southern California, Los Angeles, CA 90089, USA; *chongwuz@usc.edu

0070 14:00-14:20 Yoshiaki Nakamura (IS)
High density Iron silicide nanodots formed by ultrathin SiO₂ film technique
Yoshiaki Nakamura^{1,2*}; ¹ Graduate School of Engineering Science, Osaka University, Osaka, Japan; ²PRESTO, JST, Saitama, Japan; *nakamura@ee.es.osaka-u.ac.jp

0238 14:20-14:40 Moon-Ho Jo (IS)
Broadband Photodetection in Si:Ge Nanocrystals
Moon-Ho Jo^{1,2*}, Cheol-Joo Kim¹, and Hyun-Seung Lee¹; ¹ Department of Materials Science and Engineering, Pohang University of Science and Technology (POSTECH), Pohang, Korea; ² Division of Advanced Materials Science, Pohang University of Science and Technology (POSTECH), Pohang, Korea; *mhjo@postech.ac.kr

0133 14:40-15:00 M. Suzuki
Plasmonic Nanoheaters: Spatiotemporal Control of Heat Generation by Local Plasmon Resonators
K. Namura, M. Suzuki^{*}, K. Nakajima, and K. Kimura; ^{*} Department of Micro Engineering, Kyoto University, Kyoto 606-8501, Japan; *m-snki@me.kyoto-u.ac.jp

----- Break (15:00-15:40) -----

Chair: Chongwu Zhou**0583 15:40-16:00 Hu Junqing (IS)****Manipulation and property measurements of individual 1D nanomaterials inside a TEM**Junqing Hu; State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China; *hu.junqing@dhu.edu.cn**0607 16:00-16:20 L.-H. Peng (IS)****High speed transportation of 2DEG in GaN/Ga₂O₃ single nanowire MOSFET**J.-W. Yu¹, Y.-R. Wu,¹ C.-Y. Chen,² L.-J. Chou,² A. A. Fedyanin,³ E. D. Mishina,⁴ A. S. Sigov,⁴ and L.-H. Peng^{1*}; ¹Dept. of Elec. Eng. and Inst. of Photonics and Optoelectronics, National Taiwan University Taipei, Taiwan, R.O.C.; ²Dept of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan, R.O.C.; ³Faculty of Physics, Lomonosov Moscow State University, Moscow, Russia; ⁴Moscow State Institute of Radioengineering, Electronics, and Automation, Moscow, Russia; *peng@cc.ee.ntu.edu.tw**0686 16:20-16:40 Henry J Snaith (IS)****Enhancing the performance and our understanding device operation of polymer based solid-state dye-sensitized solar cells**Henry J. Snaith; University of Oxford, Department of Physics, Clarendon Laboratory, Parks Road, Oxford OX13PU, UK; *h.snaith1@physics.ox.ac.uk**0500 16:40-17:00 Hongjin Fan (IS)****Hetero- and Hierarchical Nanostructures of ZnO and TiO₂: Tailoring the Light Emission Properties and the Application in Water Splitting**Hongjin Fan^{*}; ¹School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore; *SPMS-PAP-02-01, Nanyang Technological University, 21 Nanyang Link, 637371 Singapore; *fanhj@ntu.edu.sg**2011/9/21****Chair: Yoshiaki Nakamura****0226 10:45-11:05 Hiroyuki Sugimura (IS)****Self-alignment of gold nanoparticles through the control of particle-substrate and particle-particle interactions**Hiroyuki Sugimura; Kyoto University (Department of Materials Science and Engineering, Kyoto, Japan) Sakyo, Kyoto 606-8501; *hiroyuki-sugimura@mtl.kyoto-u.ac.jp**0003 11:05-11:25 S. Jeon (IS)****Highly Stretchable, 3D Structures Made of Conductive Elastomers**S. Jeon^{1*}, J. Park¹; ¹Department of Materials Science and Engineering, KAIST, Daejeon, Republic of Korea; *jeon39@kaist.ac.kr**0632 11:25-11:40 Huaming Yang****Novel preparation and characterization of SrTiO₃ micro crystals**Huaming Yang^{*}, and Jing Ouyang; Department of Inorganic Materials, School of Resources Processing and Bioengineering, Central South University, Changsha 410083, P. R. China; *hmyang@csu.edu.cn**0053 11:40-11:55 Dong-Hau Kuo****Kinetic Formulation for the Growth of ZnO Nanorods**Dong-Hau Kuo^{*}, Jheng-Yu He, Jian-Fong Fang; Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan; *dhkuo@mail.ntust.edu.tw

----- Lunch (12:00-13:40) -----

Chair: Hiroyuki Sugimura**0630 13:40-14:00 Qihua Xiong (IS)****General Synthesis of Compound Semiconductor Nanowire Arrays by van der Waals Epitaxy**Muhammad Iqbal Bakti Utama,¹ Yanyuan Zhao,¹ Rui Chen,¹ Handong Sun¹ and Qihua Xiong^{1,2,*}; ¹Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore 637371; ²Division of Microelectronics, School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798; *Qihua@ntu.edu.sg**0328 14:00-14:15 Chuan-Pu Liu**
Growth and characterization of obliquely aligned InN nanorod arrayNai-Jen Ku¹, Jun-Han Huang¹, Chao-Hung Wang¹, Hsin-Chiao Fang¹ and Chuan-Pu Liu^{1,2,*}; ¹Department of Materials Science and Engineering, National Chen Kung University, Tainan, Taiwan; ²Center for Micro/Nano Science and Technology, National Chen Kung University, Tainan, Taiwan; *cpliu@mail.ncku.edu.tw**0743 14:15-14:30 Hsiu-Hsien Chen**
Observations on Growth of Ga₂O₃ Nanowires with Various CatalystsHsiu-Hsien, Chen, and Chao-hong Wang^{*}; Department of Chemical Engineering, National Chung Cheng University, Chia-yi 62102, Taiwan; *chmchw@ccu.edu.tw

----- Break (15:00-15:40) -----

Chair: Moon-Ho Jo

0382 15:40-16:00 Byungwoo Park (IS)
Semiconductor Nanoparticles with Surface Passivation and Surface Plasmon

Byungwoo Park^{*}; Dae-Ryong Jung, Jongmin Kim, Changwoo Nahm, Hongsik Choi, and Seunghoon Nam Department of Materials Science and Engineering Seoul National University Seoul 151-744, Korea; *byungwoo@snu.ac.kr; <http://bp.snu.ac.kr>

0416 16:00-16:15 Chung-Hsing Sun

Effect of annealing on the microstructure and optoelectronic properties of CuCrO₂ Thin films

Chung-Hsing Sun¹, Ruei-Sung Yu², Rong-Hsin Huang¹, Fu-Sheng Shieu^{1*}; ¹Department of Materials Science and Engineering, National Chung Hsing University, Taichung 402, Taiwan; ²Department of Photonics and Communication Engineering, Asia University Taichung 413, Taiwan; *fsshieu@dragon.nchu.edu.tw (F.S. Shieu)

0363 16:15-16:30 Yasushi Inoue
Cyclic Deterioration of Electrochromic Indium-nitride Films Deposited by Reactive Evaporation

Yasushi Inoue^{1*}, and Osamu Takai²; ¹Chiba Institute of Technology (Department of Mechanical Science and Engineering, Narashino, Japan); ²Nagoya University (Department of Materials Science and Engineering, Nagoya, Japan); *inoue.yasushi@it-chiba.ac.jp

0472 16:30-16:45 Yue-Han Wu

Structural variation of InAs quantum dots with GaAs spacer thickness in the periodically-layered structure

Yue-Han Wu^{1*}, Shu-Kai Lu², Chen-Hao Chiang², Li Chang¹, Shun-Jen Cheng², and Jenn-Fang Chen²; ¹Department of Materials Science and Engineering, National Chiao-Tung University, Hsinchu 30050, Taiwan, R.O.C.; ²Department of Electrophysics, National Chiao-Tung University, Hsinchu 30050, Taiwan, R.O.C.; *yhwu.mse91g@nctu.edu.tw

0494 11:50-12:05 Jiyang WANG

Progress in the Research of Electro-optic Crystals

Jiyang WANG; State Key Laboratory of Crystal Materials, Shandong University, Jinan, China; jywang@sdu.edu.cn

2011/9/22

Chair: Junqing Hu

0728 09:00-09:20 M. Lira-Cantu (IS)
Aligned Semiconductor Oxide Nanostructures for Dye sensitized solar cells

I. Gonzalez-Valls^a, Lola Gonzalez-Garcia^b, B. Ballesteros^a, F. Guell^c, Angel Barranco^b, Y. Yu^a, Agustin Gonzalez-Elipe^b and M. Lira-Cantu^{a*}; ^aCentre d'Investigació en Nanociència i Nanotecnologia (CIN2, CSIC), Campus UAB, Edifici ETSE, Bellaterra (SPAIN), 08193. monica.lira@cin2.es; ^bInstituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla), Avda. Americo Vespucio 49, 41092 Sevilla, Spain; ^cM-2E,

IN2UB, Departament d'Electrònica, Universitat de Barcelona, C/Martí I Franquès 1. Barcelona (SPAIN), 08028

0191 09:20-09:40 S. P. Lau (IS)
Recent progress in ZnO-based ultraviolet random laser diodes

S. P. Lau^{*} and S. F. Yu; ¹Department of Applied Physics, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong; *apsplau@polyu.edu.hk

1446 09:40-10:00

Edward Yi Chang (IS)

Growth of InGaN Film on Si by MOCVD for Photovoltaic Applications

Edward Yi Chang^{1,2*}, Binh-Tinh Tran¹, Hai-Dang Trinh¹ and Wong Yuen Yee¹; ¹Department of Materials Science and Engineering, National Chiao Tung University, Taiwan; ²Department of Electronics, National Chiao Tung University, Taiwan; *edc@mail.nctu.edu.tw

0123 10:00-10:15 Yao-De Chiou
Ternary Selenide Nanorods with Improved Thermoelectric Properties Obtained from a Cation Inserting Process

Yao-De Chiou and Yung-Jung Hsu^{*}; Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan 30010, Republic of China; *yhsu@cc.nctu.edu.tw

0336 10:15-10:30 Y. Komori
The Luminescence Property of SiO₂ Thin Films Doped with Rare Earth and Nanocrystalline Si

Y. Komori^{*}, S. Ouchi, H. Katsumata and S. Uekusa; Department of Electronics and Bioinformatics, School of Science and Technology, Meiji University, 1-1-1 Higashimita, Tama-ku, Kawasaki, Kanagawa 214-8571, Japan; *ce01040@meiji.ac.jp

----- Break (10:30-10:45) -----

0894 10:45-11:05

Zhiyong Fan (IS)

Three-dimensional Nanostructures for Cost-effective Solar Cells

Zhiyong Fan^{*}; Department of Electronic and Computer Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong; *eezf@ust.hk

0126 11:05-11:20 Yin-Kai Lin
Highly Symmetrical Cu₂O Nanocrystals: Comparative Photocatalytic Efficiency

Yin-Kai Lin and Yung-Jung Hsu^{*}; Department of Materials Science and Engineering, National Chiao

Tung University, Hsinchu, Taiwan 30010, R.O.C.;
*yhsu@cc.nctu.edu.tw

0401 11:20-11:35 K. Toda

Preparation of Silicate Phosphors by Novel Solid-Vapor Hybrid Method

K. Toda^{1,2*}, K. Uematsu³, T. Ishigaki², T. Sakamoto¹ and M. Sato^{2,3}; ¹ Graduate School of Science and Technology, Niigata University; ² Center for Transdisciplinary Research, Niigata University; ³ Department of Chemistry and Chemical Engineering, Niigata University; *8050 Ikarashi 2-nocho, Niigata, 950-2181, Japan; *ktoda@eng.niigata-u.ac.jp

0129 11:35-11:50 S. C. Tseng

The strategy of a permanent optical storage system exhibiting extremely high optical contrast over broadband range

S. C. Tseng¹, H. L. Chen^{1*}, C. C. Yu¹, H. W. Liu¹ and G. S. Lai²; ¹Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan; ²National Nano Device Laboratory, Hsinchu, Taiwan; * No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan; *huenlichen@ntu.edu.tw

Symposium E4

Conference Room: 449

2011/9/22

0923 09:00-09:25 I-Chun Cheng (IS)

A hybrid SiO₂-silicone dielectric for flexible amorphous silicon transistors

Sigurd Wagner^{*}, Lin Han, Katherine W. Song, Bhadri Visweswaran, Prashant Mandlik, Yifei Huang, Bahman Hekmatshoar, and James C. Sturm; Department of Electrical Engineering and Princeton Institute for the Science and Technology of Materials Princeton University, Princeton, New Jersey 08544, USA; *Princeton University, Department of Electrical Engineering, B-422 Engineering Quadrangle, Olden Street Princeton, New Jersey 08544, USA; *wagner@princeton.edu

0887 09:25-09:50 Chung-Chih Wu (IS)
Polarized Phosphorescent Organic Light-Emitting Devices Adopting Mesogenic Host-Guest Systems

Chung-Chih Wu^{1*}, Su-Hao Liu¹, Yu-Tang Tsai¹, Ming-Shiang Lin¹, Li-Yin Chen¹, Chih-Hung Tsai¹, You-Heng Lin¹, Anurach Poloe², Yun Chi², Chien-An Chen³, Shaw H. Chen³, Hsiu-Fu Hsu⁴; ¹ Department of Electrical Engineering, Graduate Institute of Electronics Engineering, and Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taipei, Taiwan 10617, Republic of China; ² Chemistry Department, National Tsing-Hua University, Hsin-Chu, Taiwan 30013, Republic of China; ³ Chemical Engineering Department, Rochester University, Rochester, New York, USA; ⁴ Chemistry Department, Tamkang University, Taipei, Taiwan 25137, Republic of China; *chungwu@cc.ee.ntu.edu.tw

0880 09:50-10:15 Mei-Hsin Chen
Energy Band Diagrams and Open Circuit Voltages in Organic Solar Cells

Mei-Hsin Chen^{1*}, Wei-Hsuan Tseng², Jeng-Yu Wang², Chun-Tse Tseng², and Chih-I Wu^{2*}; ¹Department of Opto-Electronic Engineering, National Dong Hwa University, Hualien 974, Taiwan; ²Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taipei 106, Taiwan; *meihsinchen@mail.ndhu.edu.tw; chihiwu@cc.ee.ntu.edu.tw

0543 10:15-10:30 I-Chun Cheng
Flexible Nanocrystalline Silicon Thin-Film Transistors

I-Chun Cheng^{1*}, I-Chung Chiu¹, Jian Z. Chen², Jung-Jie Huang³, and Yung-Pei Chen⁴; ¹ Graduate Institute of Photonics and Optoelectronics, National Taiwan University, Taipei, Taiwan; ² Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan; ³ Department of Materials Science and Engineering, MingDao University, Changhua, Taiwan; ⁴ Display Technology Center, Industrial Technology Research Institute, Hsinchu, Taiwan; *No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan; *ichuncheng@cc.ee.ntu.edu.tw

----- Break (10:30-10:45) -----

0570 10:45-11:10 Hsin-Fei Meng (IS)
Multilayer blade coating and cathode printing for large-area efficient organic light-emitting diodes

Hsin-Fei Meng; Institute of Physics, National Chiao Tung University, Hsinchu, Taiwan

0924 11:10-11:25 Hsiao Wen Zan
Vertical Polymer Nanorod Transistors Based on Air-Stable Conjugated Polymer
Y. C. Chao¹, C. H. Chung¹, H. W. Zan^{2*}, H. F. Meng^{1*}, and M. C. Ku²; ¹ Institute of Physics, National Chiao Tung University, HsinChu 300, Taiwan; ² Department of Photonics and Institute of Electro-Optics, National Chiao Tung University, HsinChu 300, Taiwan; *hswaowen@mail.nctu.edu.tw, meng@mail.nctu.edu.tw

1051 11:25-11:50
Sue-Lein Wang (IS)
Metal-Activator-Free Nanoporous Metal Phosphorous Oxides as A New Class of Intrinsic Phosphors for White Color LEDs
Sue-Lein Wang; Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan 30013; *slwang@mx.nthu.edu.tw

Symposium E5

Conference Room: 630

2011/9/21

0951 10:45-11:15 Jen-Inn Chyi (IS)
Growth of Semi-Polar GaN and InGaN on (100) Si Substrates by Metal-Organic Chemical Vapor Deposition
Jen-Inn Chyi^{1,2,3*}, Hsueh-Hsing Liu¹, and Hsien-Yu Lin¹; ¹ Department of Electrical Engineering, National Central University, Jhongli, Taiwan, R.O.C.; ² Department of Optics and Photonics, National Central University, Jhongli, Taiwan, R.O.C.; ³ Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan, R.O.C.; * chyj@ee.ncu.edu.tw

0969 11:15-11:45 Dongjin Byun (IS)
Epitaxial lateral overgrowth of GaN on sapphire substrates using carbonized photoresist mask
Dongjin Byun^{1*}; ¹ Department of Materials Science and Engineering, Korea University, Anam-dong, Seongbuk-gu, Seoul 136-713, Republic of Korea; * Anam-dong, Seongbuk-gu, Seoul 136-713, Republic of Korea; * dbyun@korea.ac.kr

0742 11:45-12:00 Jheng-Ming Huang
Growth of High Quality of Epitaxial ZnO thin films on Sapphire by Atomic Layer Deposition
Jheng-Ming Huang¹, Ching-Shun Ku², Chih-Ming Lin³, Hsin-Yi Lee^{2,4*} and San-Yuan Chen; ¹ Program for Science and Technology of Accelerator Light Source, National Chiao Tung University, Hsinchu, Taiwan; ² National Synchrotron Radiation Research Center, 101 Hsin-Ann Road, Hsinchu Science Park, Hsinchu 30076, Taiwan; ³ Department of Applied Science, National Hsinchu University of Education, Hsinchu 30076, Taiwan; ⁴ Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu 300, Taiwan; * hylee@nsrrc.org.tw

0950 13:40-14:05 Hyunhyub Ko (IS)
III-V nanoribbons on silicon for high performance transistors
Hyunhyub Ko; ¹ School of Nano-Bioscience and Chemical Engineering, Ulsan National Institute of Science and Technology, Ulsan 689-798, Korea; * hyunhko@unist.ac.kr

0865 14:05-14:30
Edward Yi Chang (IS)
The Integration of Ge and In_xGa_{1-x}As Materials with Si for Next Generation CMOS Applications
Edward Yi Chang^{1,2*}, Shih-Hsuan Tang¹, Yueh-Chin Lin¹; ¹ Department of Materials Science and Engineering, National Chiao Tung University, 1001 Ta-Hsueh Rd., Hsin-chu 300, Taiwan, R.O.C; ² Department of Electronics Engineering, National Chiao Tung University, 1001 Ta-Hsueh Rd., Hsin-chu 300, Taiwan, R.O.C; * edc@mail.nctu.edu.tw

0511 14:30-14:55 Johnny C. Ho (IS)
Enhanced synthesis and growth mechanism of Ni-catalyzed GaAs nanowires on amorphous substrates
Ning Han^{1,§}, Fengyun Wang^{2,§}, Alvin T. Hui¹, Jared J. Hou¹, Guangcun Shan¹, Fei Xiu¹, Tak F. Hung¹, Johnny C. Ho^{1,*}; ¹ Department of Physics and Materials Science, City University of Hong Kong, 83 Tat Chee Ave., H.K. SAR, China; ² Department of Biology and Chemistry, City University of Hong Kong, 83 Tat Chee Ave., H.K. SAR, China; * johnnyho@cityu.edu.hk

----- Break (15:00-15:40) -----

0365 15:40-15:55 I-Li Chen
Preparation and Characterization of Nanocrystalline
Ti_{0.1}Sn_{0.9}O₂ Solid Solutions via a Microwave-Assisted
Hydrothermal Process

I-Li Chen¹, Kuo-Hsin Chang^{1,2}, Yi-Lin Yang², and Chi-Chang Hu^{1,*}; ¹Department of Chemical Engineering, National Tsing Hua University, Hsin-Chu, 30013, Taiwan; ²Department of Chemical Engineering, National Chung Cheng University, Chia-Yi, 62102, Taiwan; *cchu@che.nthu.edu.tw

0378 15:55-16:10 Chien-Hsuan Yeh
Different Fabricated Methods Effect on Thermoelectric
Properties of Nanostructured Bismuth Antimony
Tellurium Alloys by SPS

Chien-Hsuan Yeh^{1*}, Chia-Hung Kuo¹, Ya-Wen Chou¹, Yi-Ray Chen¹, and Jun-Kai Lin²; ¹Green Energy and Environment Research Laboratories, Industrial Technology Research

Institute, Hsinchu city, Taiwan, R.O.C.; ²Department of Materials Science and Engineering, National Chung Hsing University, Taichung city, Taiwan, R.O.C.; * chien-hsuan@itri.org.tw

1444 16:10-16:25 Zhe Chuan Feng
Confocal Raman depth profile for
hetero-structural SiC structures

Hua Yang Zhang¹, Zhi Ren Qiu^{1*}, Chee Wee Liu², and Zhe Chuan Feng^{2#}; ¹State Key Laboratory of Optoelectronic Materials and Technologies and School of Physics and Engineering, Sun Yat-Sen University, Guangzhou 510275, China; ²Institute of Photonics and Optoelectronics & Department of Electrical Engineering, National Taiwan University, Taipei, 106-17 Taiwan; *stsqzr@mail.sysu.edu.cn; #fengzc@cc.ee.ntu.edu.tw

Symposium E6

Conference Room: 449

2011/9/20

0956 13:40-14:00 T. Fukushima (IS)
Development of Wafer-Level 3D System Integration
Technologies

T. Fukushima^{1*}, K.-W. Lee¹, T. Tanaka^{2,3}, and M. Koyanagi¹; ¹New Industry Creation Hatchery Center (NICHe), Tohoku University, Sendai, Japan; ²Dept. of Bioengineering and Robotics, Graduate School of Engineering, Tohoku University, Sendai, Japan; ³Dept. of Biomedical Engineering, Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan; *fukushima@bmi.niche.tohoku.ac.jp

1125 14:00-14:20 Kuan-Neng Chen (IS)
Wafer-Level Hybrid Bonding for 3D Integration
Kuan-Neng Chen*; Department of Electronics Engineering, National Chiao Tung University, Hsinchu, Taiwan; *knchen@mail.nctu.edu.tw

0888 14:20-14:40 Chee Lip Gan (IS)
Impact of Pre-Existing Voids on Electromigration in
Copper Interconnects
 Chee Lip Gan^{1*}, Meng Keong Lim¹, Hendro Mario¹, Zung-Sun Choi², Carl V. Thompson²; ¹School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798; ²Dept. of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139 USA; *clgan@ntu.edu.sg

0151 14:40-14:55

Kazuyuki Kohama
Effects of Cu Film Texture Related with Barrier
Structures on Cu Grain Growth
 K. Kohama^{1*}, T. Matsumoto¹, K. Ito¹, Y. Shirai¹ and M. Murakami²; ¹Department of Materials Science and Engineering, Kyoto University, Kyoto, Japan; ²The Ritsumeikan Trust, Kyoto, Japan; *Yoshida-Honmachi, Sakyo-ku, Kyoto 606-8501, Japan; *k.kohama@eng.mbox.media.kyoto-u.ac.jp

----- Break (15:00-15:40) -----

0616 15:40-16:00

Pooi See LEE (IS)
Spontaneous Growth and Phase Transformation
of Nickel Germanide Nanowires
 Pooi See LEE^{1*}, Chaoyi Yan¹, and Jeremy M. Higgins², Matthew S. Faber², Song Jin²; ¹School of Materials Science and Engineering, Nanyang Technological University, Singapore; ²Department of Chemistry, University of Wisconsin-Madison, USA; * School of Materials Science and Engineering, NTU, 50 Nanyang Avenue, Singapore 639798; *pslee@ntu.edu.sg

1106 16:00-16:20 Kuo-Chang Lu (IS)
Growth of Silicide/Si Nanowire Heterostructures through Point and Line Contact Reactions

Kuo-Chang Lu^{1*}, Wen-Wei Wu², Lih J. Chen³, and K. N. Tu⁴;
¹ Department of Materials Science and Engineering, National Cheng Kung University, Tainan 701, Taiwan; ²Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu 300, Taiwan; ³Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan; ⁴Department of Materials Science and Engineering, University of California, Los Angeles, Los Angeles, California 90095, USA; * gkclu@mail.ncku.edu.tw
No.1, University Rd., Tainan 701, Taiwan

0228 16:20-16:35 Hsun-Feng Hsu
Electrical and Structural properties of NiSi nanowires on Silicon-on-Insulator substrates

Ting-Hsuan Chen, Hsun-Feng Hsu*, and Hwang-Yuan Wu;
Department of materials science and engineering, National Chung Hsing University, Taichung 402, Taiwan, R.O.C.; * hfhhsu@dragon.nchu.edu.tw

0565 16:35-16:55 C. N. Liao (IS)
In-situ TEM study of Atomic-scale Microstructural Evolution in Cu under Electric Current Stressing
C. N. Liao^{1*}, K. C. Chen², W. W. Wu³, H. P. Chen⁴, L. J. Chen¹, and K. N. Tu⁴; ¹Department of Material Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; ²Taiwan Semiconductor Manufacturing Company, Hsinchu, Taiwan; ³Department of Material Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan; ⁴Department of Material Science and Engineering, University of California, Los Angeles, USA; *101 Sec. 2 Kuang-Fu Road, Hsinchu 30013, Taiwan, cnliao@mx.nthu.edu.tw

2011/9/21

0551 10:45-11:05 Zuimin Jiang (IS)
Controllable growth of self-assembled GeSi quantum dots on Si(001) substrates

Zhenyang Zhong, Yingjie Ma, Yongliang Fan, and Zuimin Jiang*; State Key Laboratory of Surface Physics and Department of Physics, Fudan University, Shanghai, China; *Handan str. 220, Shanghai 200433, China, zmjiang@fudan.edu.cn

0080 11:05-11:25 Motofumi Suzuki (IS)
Growth of Ge nanowires by high temperature glancing angle deposition
Motofumi Suzuki*; Department of Micro Engineering, Kyoto University, Kyoto 606-8501, Japan;
*m-snki@me.kyoto-u.ac.jp

0408 11:25-11:45 Cheng-Yen Wen (IS)
Fabrication of Si/Ge and Si/Ge/Si heterojunction nanowires
Cheng-Yen Wen^{1*}, Jerry Tersoff², Mark C. Reuter², Eric A. Stach³, and Frances M. Ross²; ¹Department of Materials

Science and Engineering, National Taiwan University, Taipei, Taiwan; ²IBM Research Center, Yorktown Heights, NY, USA; ³Brookhaven National Laboratory, Upton, NY, USA; *cwen@ntu.edu.tw

0241 11:45-12:00 Atsushi Oda
Growth of Si_{0.5}Ge_{0.5} single crystals by the traveling liquidus-zone method and their structural characterization
Atsushi Oda^{1,2*}, Kyoichi Kinoshita², Shin-ichi Yoda², Hiroshi Katsumata¹ and Shin-ichiro Uekusa¹;
¹Department of Electronics and Bioinformatics, School of Science and Technology, Meiji University, 1-1-1 Higashimita, Tama-ku, Kawasaki, Kanagawa 214-8571, Japan; ²Institute of Space and Astronautical Science Japan Aerospace Exploration Agency, 2-1-1 Sengen Tsukuba, 305-8505, Japan; *ce01020@meiji.ac.jp

----- Lunch (12:00-13:40) -----

0692 13:40-14:00 Y. Suda (IS)
SiGe Sputter Epitaxy Technique and Its Application to SiGe Devices
Y. Suda*, H. Hanafusa, M. Yoshikawa and M. Kanazawa; Graduate School of Engineering, Tokyo University of Agriculture and Technology, Tokyo, Japan; *sudayos@cc.tuat.ac.jp

0633 14:00-14:20 Cheng Li (IS)
Epitaxy of Si-based Ge materials with UHV/CVD and modulation of Schottky barrier height in metal/n-Ge contacts
Cheng Li*, Chengzhao Chen, Zheng Wu, Yuanyu Zheng, Shihao Huang, Hongkai Lai and Songyan Chen; Department of Physics, Semiconductor photonics research center, Xiamen University, Xiamen Fujian, 361005, China; *422 Siming South Road, Xiamen Fujian 361005, China, lich@xmu.edu.cn

0799 14:20-14:35 H. T. Chang
Vertical self-alignment of Ge/SiGe composite nanolenses on Si(001)
H. T. Chang and S. W. Lee*; Institute of Materials Science and Engineering, National Central University, Jhong-Li, Taiwan; swlee@ncu.edu.tw

0750 14:35-14:50 S. Maikap
Germanium-selenide as a green material for nano-ampere switches
S. Maikap and S. Z. Rahaman; Thin Film Nano Tech. Lab., Department of Electronic Engineering, Chang Gung University, Tao-Yuan, Taiwan; *sidhu@mail.cgu.edu.tw

Symposium E7

Conference Room: 504b

2011/9/20
0598 13:40-14:05 Katsuaki Suganuma (IS)
Effect of thermal cycling on Sn whiskers growth

Jung-Lae Jo^{*} and Katsuaki Suganuma; Institute of Scientific and Industrial Research, Osaka University, Mihogaoka 8-1, Ibaraki, Osaka 567-0047, Japan;

*suganuma@sanken.osaka-u.ac.jp

0793 14:05-14:20 Albert T. Wu
The Effect of Residual Stresses on the Growth of Tin Whiskers

Chien-Hao Su, Hao Chen and Albert T. Wu^{*}; Department of Chemical and Materials Engineering, National Central University, Zhongli City 320, Taiwan; *atwu@ncu.edu.tw

0741 14:20-14:35 Po-Hsun Lee
Solid-state aging of the solder joints with Au/Pd/Ni, Au/Ni, and Pd surface finish metallizations on the Cu substrate

Po-Hsun Lee¹, Chi-Pu Lin¹, Chih-Ming Chen^{1*}; ¹Department of Chemical Engineering, National Chung Hsing University, Taichung 402, Taiwan; *chenm@nchu.edu.tw

0827 14:35-14:50 Chi-Pu Lin
Intermetallic compound formation and morphology evolution in the high-lead solder joint with Ag-based under bump metallization during reflow soldering

Chi-Pu Lin and Chih-Ming Chen; Department of Chemical Engineering, National Chung Hsing University, Taichung 402, Taiwan

----- Break (15:00-15:40) -----

0857 15:40-16:05 Tae-Kyu Lee (IS)
The impact of microstructure evolution and Sn grain orientation on Lead-free solder interconnect long-term reliability

Tae-Kyu Lee^{1*}, Thomas Bieler² and Kuo-Chuan Liu¹; ¹Component Quality and Technology Group, Cisco Systems, Inc., San Jose, CA, United States; ²Michigan State University, East Lansing, MI, United States; *taeklee@cisco.com

0457 16:05-16:20 Jenn-Ming Song
Crystal Orientation and Metallurgical Effects on Nanomechanical Responses of Intermetallic Phase at the Interface of Solder Joints

Jenn-Ming Song^{1*}, Bo-Ron Huang¹, Cheng-Yi Liu², Yi-Shao Lai³, Ying-Ta Chiu³ and Tzu-Wen Huang⁴; ¹Department of Materials Science and Engineering and Nanotechnology Research Center, National Dong Hwa University, Hualien 974, Taiwan; ²Department of Chemical and Materials Engineering, National Central University, Taoyuan 320, Taiwan; ³Central

Labs, Advanced Semiconductor Engineering, Inc., Kaohsiung 811, Taiwan; ⁴Institute of Physics, Academia Sinica, Taipei 115, Taiwan; *samsong@mail.ndhu.edu.tw

0631 16:20-16:35 Wei-Cheng Jhu
Thermomigration of Sn in 96.5Sn-3Ag-0.5Cu flip chip solder joints

Fan-Yi Ouyang¹, Wei-Cheng Jhu^{1*}, Yi-Shao Lai² and C.-L. Kao²; ¹Dept. of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan 300, ROC; ²Advanced Semiconductor Engineering, Kaohsiung, Taiwan 811, ROC; *101, Sec. 2, Kuang Fu Road, Hsinchu, Taiwan, 30013, R.O.C., hsmk1018@gmail.com

0773 16:35-16:50 Wei-han Lai
Thermomigration in Sn/Cu Interfacial Reactions

Wei-han Lai, Po-yen Chu, and Chao-hong Wang^{*}; Department of Chemical Engineering, National Chung Cheng University, Chia-yi 62102, Taiwan; *chmchw@ccu.edu.tw

2011/9/21
0637 10:45-11:10
Sinn-wen Chen (IS)
Isothermal section and liquidus projection of the Sn-Zn-Ni ternary system

Sinn-wen Chen, Yuan-chun Chien, Chin-yi Chou, Chia-ming Hsu and Che-wei Hsu; Department of Chemical Engineering, National Tsing Hua University #101, Sec. 2, Kuang-Fu Road, Hsin-Chu, Taiwan

0393 11:10-11:25 Pingfang Shi
Thermodynamic Calculations and Kinetic Simulations of Au-/Ag-/Cu-/Sn-based Solder Systems and Processes

Pingfang Shi^{1*}, Johan Bratberg¹, Anders Engström¹ and Yuashan Liu²; ¹Thermo-Calc Software AB, Norra Stationsgatan 93, SE-113 64 Stockholm, Sweden; ²School of Materials Science & Engineering, Central-South University, Changsha, Hunan 410083, China; *Thermo-Calc Software AB, Norra Stationsgatan 93, SE-113 64 Stockholm, Sweden; *pingfang@thermocalc.se

0289 11:25-11:40 Cheng-En Ho
Theoretical and Experimental Determination of the Cu Diffusivity in the Molten Eutectic Sn-Ag System
Chao-Sheng Liu, Ling-Huang Hsu, and Cheng-En Ho^{*};
Department of Chemical Engineering & Materials Science,
Yuan Ze University, Taiwan, R.O.C.; ^{*}
ceho1975@hotmail.com

----- Lunch (12:00-13:40) -----

1428 13:40-14:05 Won Sik Hong (IS)
Mean-Time-To-Failure (MTTF) Comparisons with Eutectic and Pb-free Solder Joints of Active and Passive Components
Won Sik Hong^{1*}, Chul-Min Oh¹; ¹ Components & Materials Physics Research Center, Korea Electronics Technology Institute, Gyeonggi-do, South Korea; ^{*}wshong@keti.re.kr

0423 14:05-14:20 C. K. Lin
The different failure mechanism of the Ni UBM in the lead-free solder joints under constant current stressing at various temperatures
C. K. Lin¹, Wei An Tsao¹, Chih Chen^{1*}; ¹National Chiao Tung University, Department of Material Science and Engineering, Hsin-chu 30050, Taiwan, Republic of China; ^{*}
chih@mail.nctu.edu.tw

0782 14:20-14:35 Jia-Hong Ke
Irregular Cu Cathode Dissolution in Cu/Sn/Cu Solder Joints under Electron Current Stressing
^{*}Jia-Hong Ke¹, Ting-Jia Huang¹, C. Robert Kao¹; ¹Department of Materials Science & Engineering Department, National Taiwan University; ^{*} r96527009@ntu.edu.tw

0727 14:35-14:50 Hao Hsu
Effect of entropy production on microstructure change in flip chip solder joints by joule heating in electromigration
Fan-Yi Ouyang¹, Hao Hsu^{2*}, K. N. Tu³, and Yi-Shao Lai⁴;
^{1,2}Dept. of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan 300, ROC; ³Dept. of Materials Science and Engineering, University of California, Los Angeles, CA 90095-1595, USA; ⁴Advanced Semiconductor Engineering, Kaohsiung, Taiwan 811, ROC

----- Break (15:00-15:40) -----

0871 15:40-16:05 Kwang-Lung Lin (IS)
Nucleation of Interfacial IMC Formed between Solder and Metal Substrate
Chang-Ho Yu, Chien-Cheng Pan, Yu-Wei Lin and Kwang-Lung Lin^{*}; Department of Materials Science and Engineering, National Cheng Kung University; ^{*}¹ University Road, Tainan, Taiwan 70101, R. O. C.,
matkllin@mail.ncku.edu.tw

0428 16:05-16:20 Yi-Sa Huang
Metallurgical reaction in solid aging of the Cu/SnAg_{2.3}/Cu and Cu/SnAg_{2.3}/Ni micro-bumps
Yi-Sa Huang^{1*} and Chih Chen^{1*}; ¹Department of Materials Science and Engineering, National Chiao Tung University; ^{*}Department of Materials Science and Engineering, National Chiao Tung University, Hsin-chu 30010, Taiwan

0569 16:20-16:35 C. E. Ho
Gold and Palladium Induced Embrittlement in Microbumps on Au/Pd/Ni(P) Metallization
W. H. Wu, Y. C. Lin, and C. E. Ho^{*}; Department of Chemical Engineering & Materials Science, Yuan Ze University, Taiwan, R.O.C.; ^{*}
ceho1975@hotmail.com

0625 16:35-16:50 H. Y. Chuang
Solid State Interfacial Reactions of the Ni Substrate with Sn and Sn-Ag solders for 3D IC Chip Stacking Application
H.Y. Chuang, M.S. Kuo, J.J. Yu, W. L. Shih and C.R. Kao^{1*}; ¹Department of Materials Science & Engineering, National Taiwan University, Taipei, Taiwan; ^{*}crkao@ntu.edu.tw

2011/9/22

0541 09:00-09:25 W.-P. Dow (IS)
Wet Processes for Through Silicon Via and Hole Metallization
Wei-Ping Dow^{1*}, Shao-Ping Shen¹, Chun-Wei Lu¹, Yiu-Hsiang Chang¹, Chia-Pei Chou¹, Motonobu Kubo², Tohru Kamitani³, Eric Cheng³, Jing-Yuan Lin⁴, Fu-Chiang Hsu⁴, An-Hong Liu⁵, and David W. Wang⁵; ¹Department of Chemical Engineering, National Chung Hsing University, Taichung 402227, Taiwan; ²Central Research Lab., C. Uyemura & Co., Ltd., Osaka 5730065, Japan; ³Taiwan Research Lab., Taiwan Uyemura & Co., Ltd., Taoyuan 33759, Taiwan; ⁴Microsystems Technology Center, Industrial Technology Research Institute, Hsinchu 310, Taiwan; ⁵Research & Strategy Development Center, ChipMOS Tech. Inc., Science-Based Industrial Park, Tainan, Taiwan;
^{*}dowwp@dragon.nchu.edu.tw

1438 09:25-09:50 Tao-Chih Chang (IS)
Reliability Characteristics of Various Microjoints for Chip Stacking
Tao-Chih Chang, Shin-Yi Huang, Ren-Shin Cheng, Kuo-Shu Kao, Jing-Yao Chang, Chau-Jie Zhan, Tsung-Fu Yang, Su-Ching Chung and Tai-Hong Chen; Industrial Technology Research Institute, Hsinchu, Taiwan; ^{*}TaoChih@itri.org.tw

0807 09:50-10:05 Sarah Eunkyung Kim
Fabrication and reliability of wafer level Cu-to-Cu bonding for 3D Integration

Sung-Keun Kang¹, Youngra Kim¹, Jieun Lee², Eun-Sol Kim², Sung-Dong Kim², Sarah Eunkyung Kim^{3*}; ¹Microsystem Packaging Center, Seoul Technopark, Seoul, Korea; ²School of Mechanical Design and Automation Engineering, Seoul National University of Science and Technology, Seoul, Korea; ³Graduate School of NID Fusion Technology, Seoul National University of Science and Technology, Seoul, Korea; *eunkyung@seoultech.ac.kr

0327 10:05-10:20 Yu-Chun Liang
Joule heating effect in microbumps for 3D IC Packaging
Yu-Chun Liang¹, Chih Chen^{1*}, D. J. Yao², T. C. Chang³, C. J. Zhan³, and J. Y. Juang³; ¹Department of Material Science & Engineering, National Chiao Tung University, Hsin-chu 30010, Taiwan, R.O.C.; ²Institute of Microelectromechanical System National Tsing Hua University, Hsinchu 30013, Taiwan, R.O.C.; ³Institute of Electronics & Optoelectronics Research Laboratories, Industrial Technology Research Institute, Hsin-chu 31040, Taiwan, R.O.C.; *chih@faculty.nctu.edu.tw

----- Break (10:30-10:45) -----

0720 10:45-11:10 Jenq-Gong Duh (IS)
Phase Evolution and Microstructural Variation in Solder/Cu-xZn joints under Liquid and Solid Reactions
Chi-Yang Yu¹, and Jenq-Gong Duh^{1*}; ¹Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; *jgd@mx.nthu.edu.tw**0278 11:10-11:25 Truan-Sheng Lui**
Effect of Zinc Content on Electrification-Fusion Mechanism of Sn-xZn alloys

Gong-An Lan¹, Chung-Wei Yang², Truan-Sheng Lui^{3*} and Li-Hui Chen⁴; ¹Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan, R. O. C.; ²Department of Materials Science and Engineering, National Formosa University, Huwei, Yunlin, Taiwan, R. O. C.; ³Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan, R. O. C.; ⁴Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan, R. O. C.; *z7408020@email.ncku.edu.tw

0691 11:25-11:40 Muhammad Firdaus Mohd Nazeri
Galvanic corrosion study of Sn-9Zn lead-free solder in KOH electrolytes

Muhammad Firdaus Mohd Nazeri¹ and Ahmad Azmin Mohamad^{2*}; ^{1,2} School of Materials and Mineral Resources Engineering, Engineering Campus, Universiti Sains Malaysia, 14300, Penang, Malaysia; *azmin@eng.usm.my

0792 11:40-11:55 Albert T. Wu
Formation of Intermetallic Compounds in Lead-free Solder System and Thermoelectric Materials
Tai-Yin Lin¹, C. N. Liao² and Albert T. Wu^{1*}; ¹Department of Chemical and Materials Engineering, National Central University, Jhongli City 320, Taiwan; ²Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan; *atwu@ncu.edu.tw

Symposium F1

Conference Room: 616

2011/9/20

0285 13:40-14:10 Jen-Hwa Hsu
Crystallographic and X-ray magnetic circular dichroism studies of Al, L1₁, and L1₀ CoPt thin films grown on MgO (111) substrates

Jen-Hwa Hsu^{1*}, Fu-Te Yuan¹, S. N. Hsiao², and H. C. Hsu²;
¹Dept. of Physics, National Taiwan University, Taipei, Taiwan;
²National Synchrotron Radiation Research Center, Hsinchu, Taiwan; *Dept. Of Physics, National Taiwan University, Taipei, Taiwan 106; jhsu@phys.ntu.edu.tw

0041 14:10-14:40 J. L. Tsai
Magnetic properties of exchange coupled Fe/FePt graded films

J. L. Tsai*, H. T. Tzeng, B. F. Liu; Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; tsaijl@dragon.nchu.edu.tw

0128 14:40-15:10 D. L. Peng (IS)
Preparation and high-frequency magnetic properties of Fe-based alloy cluster-assembled films prepared by energetic cluster deposition

D. L. Peng^{1*}, Y. Wang², H. Geng², K. Kumagai², T. Hihara², and K. Sumiyama²; ¹Department of Materials Science and Engineering, College of Materials, Xiamen University, Xiamen, P.R. China; ²Department of Materials Science and Engineering, Nagoya Institute of Technology, Nagoya 466-8555, Japan; *College of Materials, Xiamen University, Xiamen 361005, China; dlpeng@xmu.edu.cn

----- Break (15:10-15:40) -----

0761 15:40-16:10 Noboru Miura (IS)
Investigation of new physical phenomena and materials characteristics by means of very high magnetic fields
Noboru Miura*; National Institute for Materials Science, Tsukuba, Japan

0532 16:10-16:40 J. C. A. Huang (IS)
High-temperature Ferromagnetism of PbPd_{1-x}Co_xO₂ Nanograin Film
H. L. Su¹ and J. C. A. Huang^{2*}; ¹School of Materials Science and Engineering, Hefei University of Technology, Hefei 230009, People's Republic of China; ²Department of Physics, National Cheng Kung University, Tainan 701, Taiwan

0242 16:40-17:10 K.-W. Lin (IS)
The effects of single crystalline substrates and ion-beam bombardment of exchange-biased NiO/NiFe bilayers
Ko-Wei Lin^{1*}, Bo-Cheng Lai¹, Y.-T. Luo², T.-H. Wu², and Johan van Lierop³; ¹Department of Materials Science and

Engineering, National Chung Hsing University, Taichung 402, Taiwan; ²Graduate School of Material Science, National Yunlin University of Science and Technology, Douliu 640, Taiwan; ³Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, R3T 2N2, Canada; kwlin@dragon.nchu.edu.tw

2011/9/21

0288 10:45-11:15 Hao-Cheng Hou (IS)
Direct probing magnetization reversal of exchange-coupled-composite media by x-ray magnetic circular dichroism

Hao-Cheng Hou¹, Dieter Suess², Jung-Wei Liao¹, Meng-Shian Lin¹, Hong-Ji Lin³, Fan-Hsiu Chang³, and Chih-Huang Lai^{1*};
¹Department of Materials Science and Engineering, National Tsing Hua University, 30013 Hsinchu, Taiwan; ²Institute of Solid State Physics, Vienna University of Technology, 1040 Vienna, Austria; ³National Synchrotron Radiation Research Center, 30076 Hsinchu, Taiwan; chilai@mx.nthu.edu.tw

0270 11:15-11:45 Y.K. Takahashi (IS)
L1₀-ordered FePtAg-C granular films for thermally assisted magnetic recording media
L. Zhang^{1*}, B. Varaprasad¹, Y.K. Takahashi^{1*}, and K. Hono¹; B.C. Stipe², J.-Y. Juang² and M. Grobis²; ¹National Institute for Materials Science (Magnetic Materials Center, Tsukuba, Japan); ²Hitachi Global Storage Technologies (San Jose Research Center, San Jose, USA); takahashi.yukiko@nims.go.jp

0606 11:45-12:00 S. N. Hsiao
Preparation of (001)-textured FePt single-layered films on glass substrates
S. N. Hsiao^{1*}, S. H. Liu², S. K. Chen², F. T. Yuan³ and H. Y. Lee^{1*}; ¹National Synchrotron Radiation Research Center, Hsinchu, Taiwan; ²Department of Materials and Engineering, Feng Chia University, Taichung, Taiwan; ³Institute of Applied Physics & Center for Nano storage Research, National Taiwan University, Taipei, Taiwan; No. 101 Hsin-Ann Rd., Hsinchu Science Park, Hsinchu, 30076, Taiwan; Hsiao.sn@nsrrc.org.tw (S. N. Hsiao); hylee@nsrrc.org.tw (H. Y. Lee)

----- Lunch (12:00-13:40) -----

0479 13:40-14:10 K. Takanashi (IS)**L1₀-ordered alloy as a spintronic material**

K. Takanashi* and T. Seki Institute for Materials Research, Tohoku University, Sendai, Japan ; koki@imr.tohoku.ac.jp

0509 14:10-14:40 J. S. Chen (IS)**Giant Magnetoresistance and Magnetization Reversal of Perpendicularly Magnetized L1₀-FePt/Ag/L1₀-FePt**

Pseudo Spin Valves; J. S. Chen^{1*}, P. Ho,¹ G. C. Han,² G. M. Chow,¹

¹ Department of Materials Science and Engineering, National University of Singapore, 117576, Singapore; ² A*STAR Data Storage Institute, Singapore, Singapore; msecj@nus.edu.sg

0245 14:40-15:10 Masaaki Futamoto (IS)**Preparation of 3d Ferromagnetic Transition Metal Thin Films with Metastable Crystal Structures**

Mitsuru Ohtake and Masaaki Futamoto* Faculty of Science and Engineering, Chuo University, Tokyo, Japan; futamoto@elect.chuo-u.ac.jp

----- Break (15:10-15:40) -----

0501 15:40-16:10 Jun Ding (IS)**Multiferroics in Cu-doped ZnO**

Jun Ding*; Department of Materials Science & Engineering National University of Singapore, Singapore 119260; Department of Materials Science & Engineering, National University of Singapore, Singapore 119260; msedingj@nus.edu.sg

0892 16:10-16:40 Kathryn Krycka (IS)**Disruption of Interparticle Magnetic Cross-Talk within Fe₃O₄ Nanocubes Using FePt Inclusions**

K. L. Krycka^{1*}, C. H. Lai², and B. J. Kirby¹; ¹ NIST Center for Neutron Research (Gaithersburg, MD, USA); ² National Tsing Hua University (Department of Materials Science and Engineering, Hsinchu, Taiwan); kathryn.krycka@nist.gov

0549 16:40-17:10 Frank Klose (IS)**Neutron Scattering and its Application to Investigate Magnetic Thin Film Structures**

Frank Klose^{1*}; ¹ Bragg Institute, Australian Nuclear Science and Technology Organisation, Kirrawee, Australia; Frank.Klose@ansto.gov.au

2011/9/22

1065 09:00-09:30 Minn-Tsong Lin (IS)**Transport Mechanism and Spin-Coupling in Organic Spin-Valves**

Minn-Tsong Lin^{1,2,*}; ¹ Department of Physics, National Taiwan University, Taipei, Taiwan; ² Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan; mtlin@phys.ntu.edu.tw

0864 09:30-10:00**Philip W. T. Pong (IS)****Magnetoresistive sensors and their application**

Philip W. T. Pong*; ¹ Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong; Room 601, Chow Yei Ching Building, Department of Electrical and Electronic Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong; ppong@eee.hku.hk

1452 10:00-10:30 M. J. Tung (IS)**Mn-Zn Power ferrites and its high frequency iron loss model**

M. J. Tung, S. Y. Tong and Ming-Da Yang; Dept. of Electromagnetic Materials and Devices, Material and Chemical Research Laboratories, ITRI, Taiwan

----- Break (10:30-10:45) -----

0833 10:45-11:00**Katsuyoshi Oh-ishi****Oxygen defect, Superconductivity, and Site Potential Calculation for Oxygen Sites of**

Ce_{0.15}Nd_{1.85}CuO_{4-y}

Daijyu Hirakawa¹, Syuichirou Hamanaka¹, Ryota Kobayashi¹, and Katsuyoshi Oh-ishi^{1*}; ¹ Department of Applied Chemistry, Faculty of Science and Engineering, Chuo University, Tokyo, JAPAN; * Kasuga 1-13-27, Bunkyo-ku, 112-8551 Tokyo, JAPAN; oh-ishi@kc.chuo-u.ac.jp

0926 11:00-11:15 Jong-Gu Yun**Tunable magnetism by magnetic phase and ZnO thickness in Fe₃O₄/ZnO multilayer**

Jong-Gu Yun^{1*}, Chang-Yup Park², and Soon-Gil Yoon^{1,3}; ¹ School of Nano Science and Technology, Chungnam National University, Daeduk Science Town, 305-764, Daejeon; ² Department of Physics and Center for Nanospinics of Spintronic Materials, Korea Advanced Institute of Science and Technology, Daejeon 305-701, Republic of Korea; ³ Graduate of Analytical Science and Technology (GRAT), Chungnam National University, Daeduk Science Town, 305-764, Daejeon, Republic of Korea; sgyoon@cnu.ac.kr

0740 11:15-11:30 Y. Y. Zhao**Processing and cryogenic resistivities of ZrCu-based amorphous microwires**

Y.Y.Zhao¹, J.M.Hu¹, W.B.Liao¹, and Y.Zhang^{1*}; ¹ State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, Beijing 100083, China; drzhangy@skl.ustb.edu.cn

Symposium F2

Conference Room: 644

2011/9/20

Chair: Tseung-Yuen Tseng

0164 13:40-14:05 Tadashi Takenaka (IS)

**Current Developments and Future Prospective of
Perovskite-type Lead-free Piezoelectric Ceramics**

Tadashi Takenaka and Hajime Nagata; Tokyo University of
Science Faculty of Science and Technology, Noda, Japan;
tadashi@ee.noda.tus.ac.jp

0171 14:05-14:20 Kai-An Tsai

**Au-CuO Heterodimer Nanostructures for Highly Efficient
Photoelectrochemical Water Splitting**

Kai-An Tsai and Yung-Jung Hsu*; Department of Materials
Science and Engineering, National Chiao Tung University
Hsinchu, Taiwan 30010, Republic of China;
yhsu@cc.nctu.edu.tw

0138 14:20-14:35 Yuanchun Pan

**First principles investigation on Si doped Sb₂Te₃ phase
change material**

Yuanchun Pan, and Zhimei Sun*; Department of Materials
Science and Engineering, College of Materials, Xiamen
University, Xiamen, China; * No. 422 Siming South Road,

Department of materials science and engineering,
science building room 310, Xiamen University,
361005 Xiamen, China; zmsun@xmu.edu.cn;
zhmsun2@yahoo.com

----- Break (15:00-15:40) -----

Chair: Tseung-Yuen Tseng

0047 15:40-16:05 Evan Ma (IS)

**A structural perspective of the fast phase
transition and large property contrast of**

Ge-Sb-Te chalcogenide phase-change alloys

Evan Ma; Department of Materials Science and
Engineering, Johns Hopkins University, Baltimore,
MD 21218, USA

0590 16:05-16:30

Tseung-Yuen Tseng (IS)

**Role of Interface Layer on Resistive Switching
Characteristics of Oxide Film Memory Devices**

Tseung-Yuen Tseng; Department of Electronics
Engineering, National Chiao Tung University,
Hsinchu 300, Taiwan; tseng@cc.nctu.edu.tw

Symposium F3

Conference Room: 622

2011/9/20

0957 13:40-14:10 Kuei-Hsien Chen (IS)

**CNTs and Graphene as Ingenious Support for
Electrocatalysts**

Kuei-Hsien Chen^{1,2*}, Ming-Shen Hu¹, Hsiang-Feng Yen³,
Yen Tai³, and Li-Chyong Chen²; ¹Institute of Atomic and
Molecular Sciences, Academia Sinica, Taipei 106, Taiwan;
²Center for Condensed Matter Sciences, National Taiwan
University, Taipei 106, Taiwan; ³Department of Chemical
Engineering, National Taiwan University of Science and
Technology, Taipei, Taiwan; chenkh@pub.iams.sinica.edu.tw

1045 14:10-14:30 Ting YU

Raman Spectroscopy and Imaging of Graphene

Ting YU^{1,2*}, Chunxiao Cong¹, Riichiro Saito³, Mildred
Dresselhaus^{4,5}; ¹Division of Physics and Applied, School of
Physical and Mathematical Sciences, Nanyang Technological
University, Singapore; ²Graphene Centre, National University

of Singapore, Singapore; ³Department of Physics,
Tohoku University, Sendai, Miyagi 9808578, Japan;
⁴Department of Electrical Engineering and
Computer Science; ⁵Department of Physics,
Massachusetts Institute of Technology, Cambridge,
Massachusetts United States; yuting@ntu.edu.sg

0097 14:30-14:50 Toyoko Imae

**Immobilization of Pt Nanoparticles-
Encapsulated Dendrimers on Multiwalled
Carbon Nanotubes and Carbon Micro Coils**

Ampornphan Siriviriyannun¹, Toyoko Imae^{1,2*}; ¹
Graduate Institute of Engineering and ²Department
of Chemical Engineering, National Taiwan
University of Science and Technology, Taipei,
Taiwan; *43 Keelung Road, Section 4, Taipei 10607,
Taiwan; imae@mail.ntust.edu.tw

----- Break (15:00-15:40) -----

0870 15:40-16:10 Yongsheng Chen (IS)**Graphene: Properties, Preparation and Application Perspective**

Yongsheng Chen; State Key Laboratory for Functional Polymer Materials and Center for Nanoscale Science & Technology, Institute of Polymer Chemistry, College of Chemistry

Nankai University, Tianjin 300071, China;

yschen99@nankai.edu.cn

0612 16:10-16:30 Chien-Hung Chen**Synthesis and Characterization of Pt-doped Nanostructured Carbon**

Chien-Hung Chen^{1*}, Ming-Sheng Yu¹, Cheng-Si Tsao¹, Haw-Yeu Chuang¹, Huan-Hsiung Tseng¹, and Tsui-Yun Chung¹; ¹ Institute of Nuclear Energy Research, Longtan, Taoyuan, 32546, Taiwan; chchen1120@iner.gov.tw

0508 16:30-16:50 Chunxu Pan**Graphene and Nitrogen-doped graphene from flames**

Cao B.¹, Zhang B.¹, Qi X.¹, Zhang Y.¹, Pan C.^{1*}; ¹ School of Physics and Technology and Key Laboratory of Artificial Micro- and Nano-structures of Ministry of Education, Wuhan University, Wuhan, P R China; cxpan@whu.edu.cn

2011/9/21**0421 10:45-11:05 Tzu-Ching Lin****Enhancement field emission property of diamond cathode by O₂ plasma post-treatment**

Tzu-Ching Lin^{1*} and Bohr-Ran Huang¹; ¹ Graduate Institute of Electro-Optical Engineering and Department of Electronic Engineering, National Taiwan University of Science and Technology, Taipei 106, Taiwan, R.O.C.;

d9702308@mail.ntust.edu.tw

0830 11:05-11:25 Tsui-Yun Chung**The Effect of Surface Oxygen Species on Hydrogen Spillover in Pt-doped Activated Carbon**

Tsui-Yun Chung^{1*}, Chien-Hung Chen¹, Ming-Sheng Yu¹, Cheng-Si Tsao¹, Haw-Yeu Chuang¹, Hua-Wen Chang¹ and Huan-Hsiung Tseng¹; ¹ Institute of Nuclear Energy Research, Longtan, Taoyuan, 32546, Taiwan; tychung@iner.gov.tw

----- Lunch (12:00-13:40) -----

0230 13:40-14:00 Jia Xun Du**Reduce contact resistance by grafting CNTs onto activated carbon cloth using microwave plasma chemical vapor deposition**

Jia Xun Du¹, and Jyh-Ming Ting^{1,2,*}; ¹ Department of Materials Science and Engineering, National Cheng Kung University, Tainan 70101, Taiwan; ² Institute of Nanotechnology and Microsystems Engineering, National Cheng Kung University, Tainan 70101, Taiwan; * No.1, University Road, Tainan City 701, Taiwan (R.O.C.);

jting@mail.ncku.edu.tw

0168 14:00-14:20 Hsin-Ying Chou**One-Step Photosynthetic Route to Cu₂O-Decorated Graphene Sheets**

Hsin-Ying Chou and Yung-Jung Hsu^{*}; Department of Materials Science and Engineering, National Chiao Tung University Hsinchu, Taiwan 30010, Republic of China yhsu@cc.nctu.edu.tw

0413 14:20-14:40 Ying-Hui Lee**N-doped carbon from collagen: Interactions among the carbonization temperature, the pH of electrolyte, and the reaction mechanism for oxygen reduction reaction**

Ying-Hui Lee¹, Feng Li², Kuo-Hsin Chang³, Takeo Ohsaka² and Chi-Chang Hu^{1*}; ¹ Department of Chemical Engineering, National Tsing Hua University, Hsin-Chu 30013, Taiwan; ² Department of Electronic Chemistry, Tokyo Institute of Technology, Kanagawa 226-8503, Japan; ³ Department of Chemical Engineering, National Chung Cheng University, Chia-Yi 62101, Taiwan; cchu@che.nthu.edu.tw

Symposium F4

Conference Room: 502

2011/9/20

1445 13:40-14:10 M. Shiojiri (IS)

Structural Investigation of ZnO-Based Ultraviolet Light-Emitting Diodes Fabricated by Atomic Layer Deposition

M.J. Chen¹, J.R. Yang¹, and M. Shiojiri^{2*}; ¹Institute of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan 106, ROC; ²Professor Emeritus of Kyoto Institute of Technology, Kyoto, Japan; *1-297 Wakiyama, Kyoto 618-0091, Japan; shiojiri@pc4.so-net.ne.jp

0801 14:10-14:20 Hsueh-Shih Chen

Catalyst-loaded membrane tubular nanoreactors prepared by atomic layer deposition

Hsueh-Shih Chen¹, Yang-Chih Hsueh¹, Sheng-Hsin Huang¹, Chi-Chung Kei^{1,2}, and Tsong-Pyng Perng^{1,3,*}; ¹Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan; ²Instrument Technology Research Center, National Applied Research Laboratories, Hsinchu 300, Taiwan; ³Department of Chemical Engineering and Materials Science, Yuan Ze University, Chungli 320, Taiwan; tpperng@mx.nthu.edu.tw

0836 14:20-14:30 Chih-Chieh Yu

Conductive Gas Barriers Prepared by Using Atomic Layer Deposition Technique

Chih-Chieh Yu^{1*}, Meng-Yen Tsai¹, Chi-Chung Kei¹, Chien-Nan Hsiao; ¹Instrument Technology Research Center, National Applied Research Laboratories, Hsinchu 300, Taiwan; 0809535@itrc.narl.org.tw

0656 14:30-14:40 M.-C. Lin

Characteristics of Zr-doped ZnO thin films grown by Atomic Layer Deposition

M.-C. Lin^a, Y.-J. Chang^a, J.-F. Chien^a, M.-J. Chen^{a*}, C.-J. Chu^b; ^aDepartment of materials science and Engineering, National Taiwan University, Taipei, Taiwan, 106, Republic of China; ^bNanmat Technology Co Ltd., Kaoshiung, Taiwan, 811, Republic of China; mjchen@ntu.edu.tw

0798 14:40-14:50 Chung-Yi Su

Fabrication of high-activity Pt-ZnO catalysts by atomic layer deposition for photo-assisted electro-oxidation of methanol

Chung-Yi Su¹, Yang-Chih Hsueh¹, Chi-Chung Kei^{1,2}, Chun-Ting Lin² and Tsong-Pyng Perng^{1,3,4,*}; ¹Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan; ²Instrument Technology Research Center, National Applied Research Laboratories, Hsinchu 300, Taiwan; ³Department of Chemical Engineering and Materials Science, Yuan Ze University,

Chungli 320, Taiwan; ⁴Fuel Cell Center, Yuan Ze University, Chungli 320, Taiwan; tpperng@mx.nthu.edu.tw

----- Break (15:00-15:40) -----

0766 15:40-15:50

Yang-Chih Hsueh

Fabrication of Pt nanoparticle catalysts by atomic layer deposition on Ni nano-honeycomb support for application in PEMFC

Yang-Chih Hsueh^{1*}, Sheng-Hsin Huang¹, and Tsong-Pyng Perng^{1,2,3}; ¹Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan; ²Department of Chemical Engineering and Materials Science, Yuan Ze University, Chungli 320, Taiwan; ³Fuel Cell Center, Yuan Ze University, Chungli 320, Taiwan; * d9631807@oz.nthu.edu.tw

0806 15:50-16:00 Kuang-I Liu

Photoelectrochemical application of Pt-deposited TiO₂/WO₃ film

Kuang-I Liu^{1*}, Yang-Chih Hsueh¹, Sheng-Hsin Huang¹, Hsueh-Shih Chen¹ and Tsong-Pyng Perng^{1,2}; ¹Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan; ²Department of Chemical Engineering and Materials Science, Yuan Ze University, Chungli 320, Taiwan; * richard_sone@yahoo.com.tw

0653 16:00-16:10 Chien-Nan Hsiao

Nanolaminate Barrier for Dual Damascene Cu Interconnect by PEALD

Chien-Nan Hsiao*, Bo-Heng Liu, Chi-Chung Kei; Instrument Technology Research Center, National Applied Research Laboratories 20 R&D Rd. VI, Hsinchu Science Park Hsinchu 300, Taiwan; cnhsiao@itrc.narl.org.tw

0647 16:10-16:20 Chien-Nan Hsiao
Nanolaminates Transparent Electrode for Solar Cell by Atomic Layer Deposition

Chien-Nan Hsiao*, Chih-Chieh Yu, Po-Kai Chiu, Chi-Chung Kei; Instrument Technology Research Center, National Applied Research Laboratories 20 R&D Rd. VI, Hsinchu Science Park Hsinchu 300, Taiwan; * cnhsiao@itrc.narl.org.tw

0192 16:20-16:30 M. C. Lin**Characterization of ZnO films grown on 6H-SiC substrates by low-temperature atomic layer deposition**

M. C. Lin¹, M. K. Wu¹, M. J. Chen^{1a)}, J. R. Yanga¹ and M. Shiojiri²; ¹Department of materials science and Engineering, National Taiwan University, Taipei, Taiwan, 106, Republic of China; ² Professor Emeritus of Kyoto Institute of Technology, 1-297 Wakiyama, Kyoto 618-0091, Japan; mjchen@ntu.edu.tw

0802 16:30-16:40 Sheng-Hsin Huang**Preparation of Zn₂GeO₄/TiO₂ Core-Shell Structure by Atomic Layer Deposition and Characterization of Photocatalytic Properties**

Sheng-Hsin Huang^{1*}, Meng-Yen Tsai², and Tsong-Pyng Perng^{1,3}; ¹Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan.; ²Instrument Technology Research Center, National Applied Research Laboratories, Hsinchu 300, Taiwan.; ³Department of Chemical Engineering and Materials Science, Yuan Ze University, Chungli 320, Taiwan.; * s9931839@m99.nthu.edu.tw huang.sheng.sin@gmail.com

0651 16:40-16:50 Chi-Chung Kei**Photocatalysis of Porous TiO₂ Hollow Nanospheres by Using Atomic Layer Deposition**

Chi-Chung Kei*, Bo-Heng Liu, Nien-Nan Chu, Chih-Chieh Yu, Chao-Te Lee and Chien-Nan Hsiao; Instrument Technology Research Center, National Applied Research Laboratories *20, R&D Rd. VI, Hsinchu Science Park, Hsinchu 300, Taiwan, Republic of China; g893552@itrc.narl.org.tw

0737 16:50-17:00 Ching-Shun Ku
Characterization of epitaxial Ga-doped ZnO thin films on (10-10) m-plane sapphire growth by instantaneous doping atomic layer deposition method

Ching-Shun Ku^{1*}, Ching-Yu Chiang¹, Jheng-Ming Huang², Chia-Hsin Wang¹, Jyh-Fu Lee¹, Chih-Wen Pao¹, Chih-Ming Lin³, and Hsin-Yi Lee^{1,4*}; ¹ National Synchrotron Radiation Research Center, 101 Hsin-Ann Road, Hsinchu Science Park, Hsinchu 30076, Taiwan; ² Program for Science and Technology of Accelerator Light Source, National Chiao-Tung University, Hsinchu 30010, Taiwan; ³ Department of Applied Science, National Hsinchu University of Education, Hsinchu 30014, Taiwan; ⁴ Department of Materials Science and Engineering, National Chiao-Tung University, Hsinchu 30010, Taiwan

Symposium F5

Conference Room: 610

2011/9/21**0465 13:00-13:30 Andreas Roosen (IS)****Printing of Particulate Structures in the Micrometer Range for Microelectronic Applications**

Roosen University of Erlangen-Nuremberg, Department of Materials Science, Glass and Ceramics Martensstr. 5, 91054 Erlangen, Germany; andreas.roosen@ww.uni-erlangen.de

0896 13:30-13:50 C. W. Huang**Finite Element Analysis for Thermal-Mechanical Stresses of Multilayer Ceramic Capacitors**

C. W. Huang^{1*}, C. H. Hsueh², B. T. Chen¹, and W. J. Wei²; ¹ Department of Civil Engineering, Chung Yuan Christian University, Chung Li, Taiwan; ² Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan; cwhuang@cycu.edu.tw

0427 13:50-14:10**Sheng-Chang Wang****Fabrication of Insulating Micropatterns for Inner Electrode of Multilayer Ceramic Capacitor by Electrophoretic Deposition base on SiO₂ Nanopowder**

Sheng-Chang Wang^{1*}, Ya-Hwang Cheng², and Jow-Lay Huang²; ¹ Department of Mechanical Engineering, Southern Taiwan University, Tainan, 710, TAIWAN, ROC; ² Department of Materials Science and Engineering, National Cheng Kung University, Tainan, 701, TAIWAN, ROC; *No.1, Nan-Tai Street, Yung Kang, Tainan; scwang@mail.stut.edu.tw

0246 14:10-14:30 Che Yuan Chang
Microstructure, crystal structure, and dielectric property of (Ba, Ca)(Ti, Zr)O₃ solid solution system synthesized with excess Ba²⁺

Che-Yuan Chang*, Hsin-I Ho, Tsung-Yu Hsieh and Chi-Yuen Huang; Department of Resources Engineering, National Cheng Kung University, Tainan City, Taiwan; *
a9007046@gmail.com

----- Break (15:00-15:40) -----

0482 15:40-16:10 Y. C. Zhou (IS)
High-κ Insulator Thin Films and Retention Properties of MFIS Diodes

Y. C. Zhou*, Y. Zhang, X. L. Zhong, M. H. Tang; Key Laboratory of Low Dimensional Materials and Application Technology of Ministry of Education, Xiangtan University, Xiangtan 411105, Hunan, China; * zhouyc@xtu.edu.cn

0165 16:10-16:30 W.-C. Wei
A Highly Conductive CMC with -Bi₂O₃ as Network Matrix

L.-D. Liu¹ and W.-C. Wei^{1*}; ¹ Department of Material Science and Engineering, National Taiwan University, Taipei, Taiwan;

*No. 1 Roosevelt Rd. Sec. 4, Taipei, Taiwan 10617;
wjwei@ntu.edu.tw

0006 16:30-16:50 Ying-Chieh Lee
Effect of Microwave Sintering on the Microstructure and Electric Properties of (Zn,Mg)TiO₃-based Multilayer Ceramic Capacitors

Ying-Chieh Lee*, Yu-Hung Chen, Pei-Rong Tsai; Department of Materials Engineering, National Pingtung University of Science & Technology, Pingtung 91201, Taiwan;
YCLee@mail.npust.edu.tw

0468 16:50-17:10 Sung-En Lin
Study on Composite Bi₂O₃-8YSZ Electrolyte on Anode Supported SOFC

Sung-En Lin, Wen-Cheng J. Wei; Institute of Materials Science and Engineering, National Taiwan University No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan

Symposium F6

Conference Room: 404

2011/9/20

1028 13:40-14:10 Her-Hsiung Huang (IS)
Biological Responses to TiO₂ Nano-network Structure on Titanium Surface for Implant Application

Her-Hsiung Huang^{1*}, Wei-En Yang², and Ya-Ken Chen²; ¹Department of Dentistry, National Yang-Ming University, Taiwan; ² Institute of Oral Biology, National Yang-Ming University, Taiwan; *No. 155, Sec. 2, Li-Nong Street, Taipei 112, Taiwan; hhuang@ym.edu.tw

0489 14:10-14:22 Sue-min Chang
Preparation of Pore-size-tailored TiO₂ using an Ionic-Liquid-Templated Sol-Gel Method - Effects of Salts
Sue-min Chang^{1*}, Chung-yu Lee²; Institute of environmental engineering, National Chiao Tung University, 1001, University Road, Hsinchu, 30068, Taiwan;
chang@mail.nctu.edu.tw

0076 14:22-14:34 Sho-Hsun Wang
Carboxylic acid modified ZrO₂ and high refractive index acrylate nanocomposite

Sho-Hsun Wang¹, A.S.T. Chiang^{1*}, Y.S. Sun¹, A.T. Wu¹, Shinn-Jen Chang², Kuen-Yi Wu²; ¹Department of Chemical

and Materials Engineering, National Central University, Chung-Li, Taiwan; ²Department of Digital Image Material, Division of Applied Chemistry, MCRC, ITRI, Hsinchu, Taiwan;
stchiang@cc.ncu.edu.tw

0112 14:34-14:46 Wei-Hao Lin
Preparation of Metal-Decorated ZnO Nanocrystals Using a Facile Green Antisolvent Method

Wei-Hao Lin and Yung-Jung Hsu^{*}; Department of Materials Science and Engineering, National Chiao Tung University Hsinchu, Taiwan 30010, Republic of China * yhsu@cc.nctu.edu.tw

0166 14:46-14:58 Ying-Chih Pu
A Progressively-Alloying Route to Cd_xZn_{1-x}Se Quantum Dots with Tunable Emissions

Ying-Chih Pu and Yung-Jung Hsu^{*}; Department of Materials Science and Engineering, National Chiao Tung University Hsinchu, Taiwan 30010, Republic of China; * yhsu@cc.nctu.edu.tw

0116 14:58-15:10 Huizhang Guo**Preparation of bimetallic core-shell nanoparticles with magnetically recyclable and high catalytic abilities**

Huizhang Guo, Yuanzhi Chen, Xiaozhen Chen, Laisen Wang and Dong-Liang Peng*; Department of Materials Science and Engineering, College of Materials, Xiamen University, Xiamen 361005, China; * dlpeng@xmu.edu.cn

----- Break (15:10-15:35) -----

0568 15:35-16:00 Lei Li (IS)**A versatile route to patterned carbon nanotubes with adjustable array using breath figure method**

Lei Li; College of Materials, Xiamen University, Xiamen, 361005, P. R. China; Siming South Road 422#, Xiamen, China, 361005; lilei@xmu.edu.cn Mailing

0895 16:00-16:12 Masakazu Yoshikawa
Molecularly Imprinted Nanofiber Membranes for Chiral Separation

Masakazu Yoshikawa^{1*}, Yuuki Sueyoshi¹, Akira Utsunomiya¹, Michael D. Guiver², Gilles P. Robertson²; ¹ Department of Biomolecular Engineering, Kyoto Institute of Technology, Matsugasaki, Kyoto 606-8585, Japan; ² Institute for Chemical Process and Environmental Technology, National Research Council of Canada, Ottawa, Ontario, Canada K1A 0R6; * masahiro@kit.ac.jp

0159 16:12-16:24 Haitao Zhu**Thermal Conductivities, Rheological Behaviors and Photo-thermal Properties of Glycol -based Nanofluids Containing carbon black nanoparticles**

Zhaoguo Meng, Dongxiao Han, Daxiong Wu, Haitao Zhu*, Qingling Li; College of Materials Science & Engineering, Qingdao University of Science & Technology, Qingdao, 266042, China; * htzhu1970@163.com

0368 16:24-16:36 Hiroshi Endo
Toward Soft-Brain Materials with Topological Colloidal Array in Wrinkle Space

Hiroshi Endo^{a,b*}, Masahiro Tamura^a, Takeshi Kawai^{a,b}; ^aDepartment of Industrial Chemistry, Tokyo University of Science, 1-3 Kagurazaka, Shinjuku-ku, Tokyo 162-8601, Japan; ^bCenter for Colloid and Interface Science in Tokyo University of Science; endo@ci.kagu.tus.ac.jp

0586 16:36-16:48 Dongxia Hao

The heterogeneous structures induced by phase separation in synthesis of uniform PolyDVB microspheres
Dongxia Hao^{1*}, Fangling Gong¹, Guohua Hu², Guanghui Ma¹, and Zhiguo Su¹; ¹ Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China; ² Institut Universitaire De France, Maison Des Universite's, 103 Boulevard Saint-Michel, 75005 Paris, France; * zhong guan cun bei er tiao #1, Institute of Process Engineering, Beijing, China, 100190; dxhao@home.ipe.ac.cn

0504 16:48-17:00 Yukishige Kondo
Gold-Colored Organic Crystals Formed from Azobenzene Compounds

Yukishige Kondo^{1,3*}, Akiko Matsumoto¹, Kengo Fukuyasu¹, Takeshi Kawai^{1,3}, and Makoto Tadokoro^{2,3}; ¹Department of Industrial Chemistry, Faculty of Engineering, Tokyo University of Science, 1-3 Kagurazaka, Shinjuku, Tokyo 162-8601, JAPAN; ²Department of Chemistry, Faculty of Science, Tokyo University of Science, 1-3 Kagurazaka, Shinjuku, Tokyo 162-8601, JAPAN; ³Center for Colloid and Interface Science (CCIS), Tokyo University of Science, 1-3 Kagurazaka, Shinjuku, Tokyo 162-8601, JAPAN; * ykondo@rs.tus.ac.jp

2011/9/21

0971 10:45-11:10**Jen-Chang Yang (IS)****Translational researches for injectable polyelectrolyte complex (PEC) based tissue engineering scaffolds**

Jen-Chang Yang^{1,2*}, Hong-Da Wu³, and Sheng-Yang Lee^{2,3}; ¹ School of Dental Technology, College of Oral Medicine, Taipei Medical University, Taipei, ROC.; ² Center for Teeth Bank and Dental Stem Cell Technology, Taipei Medical University, Taipei, ROC.; ³ School of Dentistry, College of Oral Medicine, Taipei Medical University, Taipei, ROC.; * School of Dental Technology, College of Oral Medicine, Taipei Medical University, 250 Wu-Hsing Street, Taipei, Taiwan 110, ROC; Yang820065@tmu.edu.tw

0694 11:10-11:22 A.Venault**Preparation of PEGylated polysulfone membranes for the inhibition of protein adsorption and bacterial adhesion**

A. Venault¹, Y. Chang^{1,2*}, D. Bouyer³, D.M. Wang^{1,4,5}, J.Y. Lai¹; ¹R&D Center for Membrane Technology, Chung Yuan Christian University, Chung-Li 32023, Taiwan; ²Department of Chemical Engineering, Chung Yuan Christian University, Chung-Li 32023, Taiwan; ³Institut Européen des Membranes, UMR 5635-CNRS, ENSCM, UM II, CC047, Place E. Bataillon, 34095 Montpellier, France; ⁴Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan; ⁵Institute of Polymer Science and Engineering, National Taiwan University, Taipei 10617, Taiwan; * ychang@cycu.edu.tw

0595 11:22-11:47 Keiji Terao (IS)
A New Generation of Nutra-ceuticals and Cosme-ceuticals
Complexing lipophilic bioactives with γ -Cyclodextrin
Keiji Terao, Ayako Jo, Yukiko Uekaji, Mayu Ohnishi and
Daisuke Nakata; CycloChem Co., Ltd. Kobe, Japan;
keiji.terao@cyclochem.com

0009 11:47-11:59 Akon Higuchi
Preservation of Hematopoietic Stem Cells from Umbilical
Cord Blood Stored in a Surface Derivatized with Polymer
Nanosegments
A. Higuchi^{1*}; ¹Department of Chemical and Materials
Engineering, National Central University, Zhongli, Taoyuan,
32001 Taiwan; ²Department of Reproductive Biology,
National Research Institute for Child Health and
Development, Okura, Setagaya-ku, Tokyo 157-8535, Japan ;
³Cathay Medical Research Institute, Cathay General Hospital,
Hsi-Chi City, Taipei, 221, Taiwan; *Department of Chemical
and Materials Engineering, National Central University, No.
300, Zhongda Rd., Zhongli, Taoyuan, 32001 Taiwan;
higuchi@ncu.edu.tw

----- Lunch (12:00-13:40) -----

0071 13:40-14:10 Guoping Chen (IS)
Hydrogel-Micropatterned Surfaces for Cell Function
Manipulation
Guoping Chen*, Wei Song, Naoki Kawazoe; Tissue
Regeneration Materials Unit, International Center for
Materials Nanoarchitectonics (MANA), National Institute for
Materials Science, 1-1 Namiki, Tsukuba, Ibaraki, 305-0044,
Japan; Guoping.CHEN@nims.go.jp

0109 14:10-14:22 Norihiro Kato
Interaction of Bacterial Communication Signals with
Immobilized Receptors on Polymer Matrices
Norihiro Kato^{1,2*}, Marina Arai^{1,2}, Takuto Umemura¹,
Chigusa Okano^{1,2}, Tomohiro Morohoshi^{2,3}, Tsukasa Ikeda^{2,3};
¹ Department of Advanced Interdisciplinary Sciences,
Graduate School of Engineering, Utsunomiya University,
Japan; ²JST, CREST, Japan; ³Department of Material and
Environmental Chemistry, Graduate School of Engineering,
Utsunomiya University, Japan;
* katon@cc.utsunomiya-u.ac.jp

0389 14:22-14:34 Kiminori Ushida
Jellyfish Mucin as a Messenger Molecule in
Biomaterialization
Kiminori Ushida^{1*}, Aiko Nakao²; ¹School of Science,
Kitasato University, Sagami-hara, Kanagawa, 252-0373 Japan;
²Advanced Science Institute, Riken, Wako, Saitama,
351-0198 Japan; * ushidak@kitasato-u.ac.jp

0490 14:34-14:59 Noriko Fujii (IS)
Abnormal protein aggregation due to the presence of
D-aspartyl residues in cataractous lenses.
Noriko Fujii*, Norihiko Fujii and Masaaki Sugiyama

Research Reactor Institute, Kyoto University, Osaka
Japan nfujii@rri.kyoto-u.ac.jp

----- Break (15:00-15:35) -----

1032 15:35-16:00
Shu-Hwa Lin (IS)
PCM Application in Clothing industry Phase
Change Materials' Application in Clothing
Design
Shu-Hwa Lin; ¹University of Hawaii at Manoa
(Department of Family & Consumer Sciences,
Honolulu, HI USA) ; *2515 Campus Rd. Miller 201,
Honolulu HI 96822; shulin@hawaii.edu

0611 16:00-16:12 Nobuhiro Sato
Radiation Synthesis of Binary Hydrogels with
Thermoresponsive Pores
Nobuhiro Sato*, Manabu Ueda, Tomochika
Matsuyama, and Masaaki Sugiyama Research
Reactor Institute, Kyoto University, Osaka, Japan ; *
sato-n@rri.kyoto-u.ac.jp

0261 16:12-16:24 Kuan-Wen Yeh
Release of vapor from capsules
Kuan-Wen Yeh^{1,a}, Chih Pong Chang^{2,b}, Takao
Yamamoto^{1,c} and Toshiaki Dobashi^{1,d}; ¹Department
of Chemistry and Chemical Biology, Graduate
School of Engineering, Gunma University, Kiryu,
Gunma 376-8515, Japan; ²Department of Textile
Engineering, Faculty of Engineering, Chinese
Culture University, Taipei, 11114, Taiwan; ^a
scorpio.judyeh@msa.hinet.net; ^b
cpchang@staff.pccu.edu.tw; ^c
yamamoto@phys.sci.gunma-u.ac.jp; ^d
dobashi@gunma-u.ac.jp

0338 16:24-16:36 Naoko Tomita
Adsorption of Acridine Orange by DNA
Hydrogel
Naoko Tomita^{1*}, Daisuke Naito¹, Isamu Rokugawa¹,
Takao Yamamoto¹ and Toshiaki Dobashi¹; ¹
Department of Chemistry and Chemical Biology,
Graduate School of Engineering, Gunma University,
Kiryu, Gunma 376-8515 Japan ; *
dobashi@gunma-u.ac.jp

0353 16:36-16:48 T. Dobashi
Adsorption and absorption of DNA-based gel
T. Dobashi¹, K. Furusawa², T. Yamamoto¹, N.
Nagasawa³ and Y. Maki¹; ¹Department of Chemistry
and Chemical Biology, Graduate School of
Engineering, Gunma University; ²Faculty of
Advanced Life Science, Hokkaido University;
³Environment and Industrial Materials Research
Division, QuBS, JAEA; Kiryu, Gunma 376-8515,
Japan; dobashi@gunma-u.ac.jp

0300 16:48-17:00 Atsushi Suzuki**Swelling Behavior of Physical and Chemical Poly(vinyl alcohol) Gels**

Atsushi Suzuki* and Emiko Otsuka; Graduate School of Environment and Information Sciences, Yokohama National University Yokohama, Japan.; * asuzuki@ynu.ac.jp

2011/9/22**0262 10:45-11:10 Naoki Sasaki (IS)****Naoki Sasaki, Hideki Shirakawa, Kazuya Furusawa, and Akimasa Fukui**

Kita-ku Sapporo; Graduate School of Life Science, Hokkaido University, Sapporo, JAPAN; Kita 10 Nishi 8 060-0810 JAPAN; nasa5131@sci.hokudai.ac.jp

0099 11:10-11:22 Yutaka Tanaka**Viscoelastic Properties of Sol-Gel Transition For Aqueous Sodium Polyacrylate cross-linked by Aluminum Ions: Derivation of Gel Strength for Aqueous Solution**

Yutaka Tanaka, Jiao Xin Yue; Department of Materials Science and Eng., Faculty of Eng., University of Fukui, Fukui, Japan; Fukui-shi, 910-8507, Japan; tanaka@matse.u-fukui.ac.jp

0375 11:22-11:34 Koji Mitamura**Characterization of Interfacial Diffusion of Deuterated Polystyrene Chains into Polystyrene Brush Using Neutron Reflectometry**

K. Mitamura¹, H. Arita², M. Terada¹, M. Kobayashi¹, N. L. Yamada³, M. Hino⁴, A. Takahara^{1,2,5*}; ¹ JST, ERATO, 744 Motooka, Nishi-ku, Fukuoka 819-0395, Japan; ² Department of Applied Chemistry, Graduate School of Engineering, Kyushu University, Fukuoka, Japan; ³ High Energy Accelerator Research Organization, Tsukuba Japan; ⁴ Kyoto University Reactor Research Institute, Kumatori, Osaka; ⁵ Institute for Materials Chemistry and Engineering, Kyushu University, Fukuoka, Japan; * takahara@cstf.kyushu-u.ac.jp

0148 11:34-11:46 S. Yagihara**Broadband Dynamics of Water Structure in Various Materials**

S. Yagihara^{1*}, Y. Maruyama², H. Saito², Y. Watanabe², Y. Hosoi², R. Kita¹, N. Shinyashiki¹, and M. Fukuzaki³; ¹ Department of Physics, School of Science, Tokai University, Hiratsuka, Japan; ² Course of Physics, Graduate School of Science, Tokai University, Hiratsuka, Japan; ³ Liberal Arts Education Center, School of Information and Telecommunication Engineering, Tokai University, Tokyo, Japan; *4-1-1 Kitakaname, Hiratsuka, Kanagawa 259-1292, Japan; yagihara@keyaki.cc.u-tokai.ac.jp

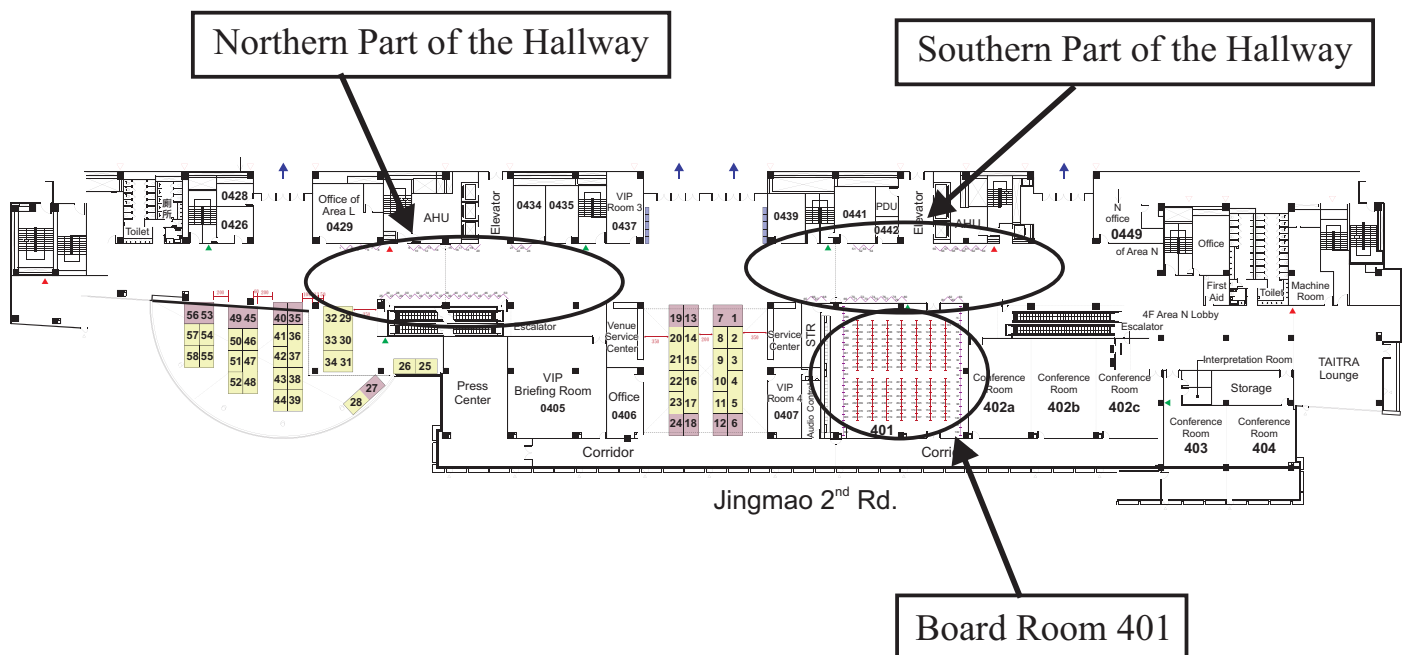
0172 11:46-11:58 Shinya Nakano**Molecular Dynamics of Polymer in Poly (N-isopropylacrylamide) Solutions Studied by Dielectric Relaxation Spectroscopy**

S. Nakano, A. Torigaki, K. Suzuki, R. Kita^{*}, N. Shinyashiki and S. Yagihara; Graduate School of Science and Technology, Tokai University, Hiratsuka, Japan; * rkita@keyaki.cc.u-tokai.ac.jp

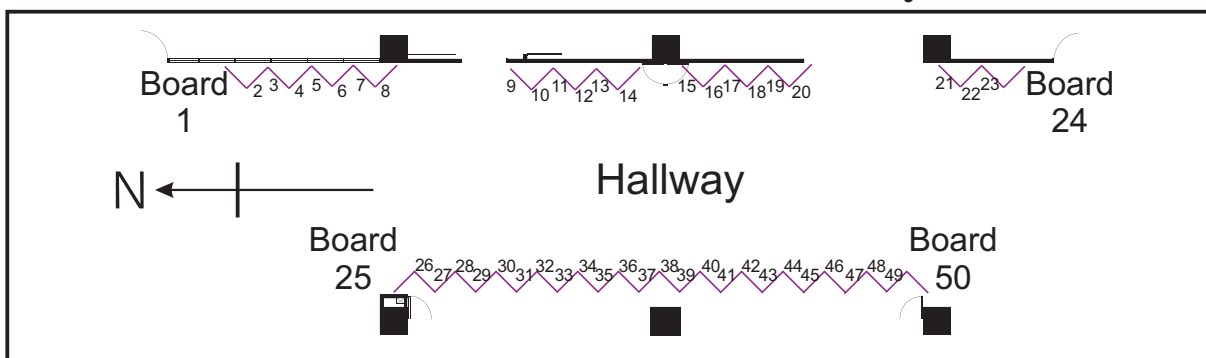
Poster

	Sept. 20(Tue)	Sept. 21(Wed)
9:00-10:30 (90 min.)	P1 posting (Symposium A+B)	P3 posting (Symposium C+E)
10:30-10:45 (15 min.)	P1 posting	P3 posting
10:45-12:00 (75 min.)	P1 posting	P3 posting
12:00-13:40 (100 min.)	13:00-13:40 pm (personnel station) Remove P1 poster 13:40-14:00	13:00-13:40 pm (personnel station) Remove P1 poster 13:40-14:00
14:00-15:00 (60 min.)	P2 posting (Symposium D+F)	
15:00-15:40 (40 min.)	15:00-15:40 pm (personnel station)	
15:40-16:40 (60 min.)	P2 posting Remove poster 16:40-17:00	

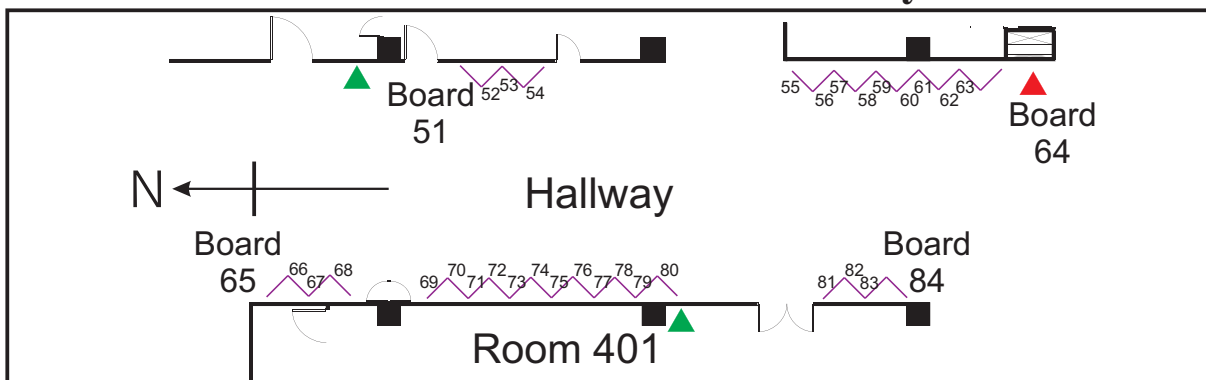
Board # arrangement



Northern Part of the Hallway



Southern Part of the Hallway



Board 285	Board Number in Room 401																Board 85
286																	86
287	272	259	246	233	220	207	194	181	168	155	142	129	116	103			87
288	273	260	247	234	221	208	195	182	169	156	143	130	117	104			88
289	274	261	248	235	222	209	196	183	170	157	144	131	118	105			89
290	275	262	249	236	223	210	197	184	171	158	145	132	119	106			90
291	276	263	250	237	224	211	198	185	172	159	146	133	120	107			91
292	277	264	251	238	225	212	199	186	173	160	147	134	121	108			92
293	278	265	252	239	226	213	200	187	174	161	148	135	122	109			93
294																	94
295	279	266	253	240	227	214	201	188	175	162	149	136	123	110			95
296	280	267	254	241	228	215	202	189	176	163	150	137	124	111			96
297	281	268	255	242	229	216	203	190	177	164	151	138	125	112			97
298	282	269	256	243	230	217	204	191	178	165	152	139	126	113			98
299	283	270	257	244	231	218	205	192	179	166	153	140	127	114			99
300	284	271	258	245	232	219	206	193	180	167	154	141	128	115			100
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Board 302																	Board 102

Paper ID	Board #	Title of the poster	Authors
Symposium A1: Inorganic Solar Cells 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0091	50	Fabrication and Photoelectrochemical Property of Metal Nanoparticle modified Silicon Nanowire Arrays	Yu-Lun Hsieh, Wei-Long Liu, et al.
0092	51	Properties of ZnS thin films deposited by using chemical bath method	Chang-Siao Yang, Wei-Long Liu, et al.
0364	52	Selenization of CIGS Films with Different Cu-In-Ga Alloy Precursors	Wei-Ting Lin, Sheng-Hui Chen, et al.
0396	53	Chemically Grown Multifunctional ZnO nanostructures	R. S. Patil, R.C. Pawar, et. al.
0425	54	Growth behavior of nanocrystalline ZnS thin films for solar cell using CBD technique	Jen-Hua Yu, Wen- Jauh Chen, et al.
0426	55	Synthesis of ZnO:Al transparent conductive thin films using sol-gel method	You-Gang Hsu , Wen-Jauh Chen, et al.
0429	56	The characteristics of Mo bilayer back contact with different residual stress of Mo bottom layers prepared by DC magnetron sputtering	Hsiao-Min Wu, Shih-Chang Liang, et al.
0515	57	Efficiency Enhancement of Silicon Solar Cell Using ZnO Nanorod Arrays as Antireflection Coatings	Chin-An Lin, K. Y. Lai, et al.
0544	210	Efficiency Enhancement of InGaN-based Multiple Quantum Well Solar Cells via antireflective ZnO Nanorod Arrays	G. J. Lin, K. Y. Lai, et al.
0555	58	Synthesis and Characterization of Chalcopyrite Quaternary Semiconductor Nanocrystals with Tunable Band Gaps by a Self-Assembly	Lin-Jer Chen, Jiunn-Der Liao, et al.
0556	59	Chalcopyrite Ternary Semiconductor CuBSe ₂ Nanocrystals by Solvothermal: Its preparation and characterization	Lin-Jer Chen, Jiunn-Der Liao, et al.
0557	211	Polyvinylbutyral assisted synthesis and characterization of chalcopyrite quaternary semiconductor Cu(In _x Ga _{1-x})Se ₂ nanofibers by electrospinning route	Yu-Ju Chuang, Jiunn-Der Liao, et al.
0558	212	Synthesis and Characterization of Chalcopyrite Quaternary Semiconductor Cu (In _x Ga _{1-x}) S ₂ Nanowires by Electrospun Route	Yu-Ju Chuang, Jiunn-Der Liao, et al.
0574	213	Efficiency Enhancement of Silicon Solar Cells Using Self-assembled Nanospheres	G. J. Lin, K. Y. Lai, et al.
0585	204	Research on Phosphorus Removal by Induction Vacuum Refining and Its Thermodynamics-kinetics Mechanism	LUO Xue-tao, ZHENG Song-sheng, et al.
0624	214	Efficiency Enhancement of GaN-based Solar Cells with Light-Trapping Nanospheres	P. H. Fu, K. Y. Lai, et al.
0884	60	Improvement of Ga distribution and enhancement of grain growth of CuInGaSe ₂ solar cells	Hung Ru Hsu , Wei Chien Chen , et al.
0978	215	Study and Optimization of Polycrystalline Silicon Layers for Solar Cell Applications	Chia-Hsin Chou, Tsung-Che Tsai, et al.
1007	216	Study of characteristics and microstructure on Cu-15%In and Cu-15%Ga alloy fabricated by cross roll rolling using copper can	Dae-Won Kim, Hyeon-Taek Son
1024	61	Amorphous silicon thin film solar cells with silicon nanowire arrays	Jung-Kuei Tseng, Chuan-Ping Juan, et al.
1030	62	Various Morphologies of Silicon Nanostructures Solar Cells	Kuen-Heng Chen, Chuan-Ping Juan, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium A1: Inorganic Solar Cells 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
1118	63	The structural characterization during the formation of $\text{Cu}_2\text{ZnSnS}_4$	Chia-Ying Su, Chiu-Yen Chiu, et al.
1119	64	Electrodeposition of CIS Films for Solar Cells	Li-Ju Chen, Chia-Ying Su, et al.
1122	65	Effect of TiO_2 Surface Modification on the DSSC	Kuo-Tong Lee, Jia-Rong Zhang, et al.
1173	66	Optical Properties and Durability of the lackened Al_2O_3 -NiP/Al Absorbers	T.K.Tsai*, C.Y.Hsu, et al.
1224	67	Photosensitive layers growth on buffer layer/ TiO_2 nanotube arrays structure by solvothermal and ion compounds lamination reaction process	Wei-Jei Tzeng, Horng-Yi Chang
1228	68	Characterizations of CuInS_2 Thin Films Synthesized by Hot-Injection Process	Po-Hsuang Huang, Chun-Chieh Lo, et al.
1287	69	The properties of high performance n-type PbTe based materials for thermoelectric generators	Tse-Hsiao Lee*, Jenn-Dong Hwang, et al.
1308	70	Preparation of $\text{Cu}_2\text{ZnSnS}_4$ solar cell materials by electrodeposition	Min Yen Yeh, Jing Yi Wang, et al.
1335	205	Synthesis of CuInSe_2 via a non-vacuum process using alloy particles as the precursors	Fu-Shan Chen, Shih-Hsien Liu, and Chung-Hsin Lu
1336	206	Influence of deposition conditions on the selenization of CBD-derived CdS films	Jeng-Shin Ma, Hao-Yu Cheng, and Chung-Hsin Lu*
1346	71	Fabrication of (Cd,Zn)S Buffer Layers for CIGS Thin Film Solar Cells by Low-temperature Wet Chemical Synthesis Route	Jean Liu, Ray Chang, Lander Ho, and R.F. Louh
1393	207	Preparation and formation process and Cu(In,Ga)Se_2 films via using the sputtering method	Shin-Hom Lin, Chung-Hsien Wu, Chung-Hsin Lu
1410	72	Investigation into the influence of different stack structure on sputtered $(\text{Cu,Ga})\text{InSe}_2$ thin film	Shang-i Tsai, Yu-Ting Hsu, et al.
1411	73	Fabrication of CISe_2 Nanorod Arrays by Mechanical Approach for Low Cost Solar Cells	Manisha Kondiba Date, Chin-Hung Liu, et al.
1415	74	Investigation of the Selenium process on sputtered $(\text{Cu,Ga})\text{InSe}_2$ thin film	Shang-i Tsai, Wei-Min Chao, Wen-How Lan

Paper ID	Board #	Title of the poster	Authors
Symposium A2: Organic Solar Cells 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0155	75	Environmentally-friendly Materials as Photosensitizers for Dye-sensitized Solar Cell	Hiroki Takano, Seiji Isoda, et. al.
0214	76	2-Dimensional Optoelectronic Simulation for Nanostructured Organic-Inorganic Hybrid Solar Cells	Yu-Chih Cheng, Min-Hsiang Hsu, et al.
0221	208	Improved performance of hybrid polymer/ZnO solar cell by introducing dye molecules	Yun-Ming Sung , Fang-Chi Hsu , Yang-Fang Chen
0358	77	Enhanced Photoelectrochemical Performance of TiO ₂ Photoanode with Micro-Cavities for Dye-Sensitized Solar Cells	Da-Wei Liu, I-Chun Cheng, Jian Z. Chen
0392	78	Enhancing Performance of ZnO Dye-sensitized Solar Cells by Incorporation of Gold Nanoparticles	Yen-Ming Peng , Wei-Chen Chang, et al.
0512	217	Effect of solar radiation on photovoltaic characteristics of Si-P3HT core-shell nanowire solar cells	S. H. Tsai, H. C. Chang, et al.
0872	79	Effect of TiO ₂ nanoparticles in ionic gel electrolytes on the performance of quasi-solid-state dye-sensitized solar cells	Hsin-Fang Lee, Po-Ya Hsu., et al.
0960	80	Highly Stable Dye-sensitized Quasi-solid State Solar Cell with Solvent-free Binary Ionic Electrolytes Solidified by SiO ₂ Nanoparticles	Hsin-Fang Lee, Chih-Lin Wu, et al.
0996	81	Synthesis and the structure-property of transparent polyimide films prepared by fluorinated monomers for flexible substrates applications	Sheng-Hsiang Hu, Hsin-Ling Hsu, Jihperng Leu
1091	82	Nano-Colloid Treatment for High Efficiency Dye-Sensitized Solar Cell	Tae-Yeon Cho, Soon-Gil Yoon, Chi-Hwan Han
1102	83	Transfer sintered TiO ₂ film onto ITO/PET substrate for flexible gel type dye sensitized solar cells	Yung-Hsi chuang, Nyan-Hwa Tai, Chi-Young Lee
1144	84	Dye-sensitized solar cells based on double nano-particle TiO ₂ layers	Yi-Lun Wung, Ming-Jer Jeng* , Liann-Be Chang
1176	85	Quantitative Analysis Study for Improved Efficiency of Bulk Heterojunction P3HT:PCBM Photovoltaic Devices by Incorporating Nanoparticles	Tsung-Han Lin, Hsueh-Chung Liao, et al.
1188	86	Study of Dye Sensitized Solar Cell Application of TiO ₂ and ZnO Composite Films by Atmospheric Pressure Plasma Jet Deposition System	Kuo-kai Lu, Yu-Rune Wu, et al.
1189	87	Study of Dye Sensitized Solar Cell Application of Porous TiO ₂ Films by Atmospheric Pressure Plasma Jet Deposition System	Kuo-kai Lu, Yu-Rune Wu, et al.
1198	88	Room-Temperature Synthesis of Hierarchical Nanostructures on ZnO Nanowire Anode for Dye-sensitized Solar Cells	Wei-Ting Jiang, Chun-Te Wu, Jih-Jen Wu
1205	89	Study of Dye Sensitized Solar Cell Application of ZnO electrode to Improve Photovoltaic Efficiency by Atmospheric Pressure Plasma Jet Deposition System	Chung-Yuan Juan, Yu-Rune Wu, et al.
1249	90	Development of Inverted P3HT:TiO ₂ Bulk Heterojunction Hybrid Solar Cell Using (4,5-Diaza-9,9'-spirobifluorene) Functionalized Donor/Acceptor Conjugated Oligomer as Interface Modifier	Yi-Chen Ho, Chia-Hsin Lee, et al.
1282	91	Interfacial Modification of TiO ₂ Nanodendrite Array - P3HT Heterojunction Solar Cells	Wen-Pin Liao, Shu-Chien Hsu, Jih-Jen Wu
1293	92	Influence of Various Template Bent Angles to Photoelectrode by Electrochemical Processes	Chin-Kuo Kuo, Tong Chan, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium A2: Organic Solar Cells 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
1299	93	Efficiency of Ultrasonic Cleaning Time for the Tube Condition in Photoelectrode of Dye Sensitized Solar Cells	Chin-Guo Kuo, Wei-Ming Yang, et al.
1302	94	Effect of TiCl_4 treatment on the photoelectrode of TiO_2 nanotubes for dye sensitized solar cells	Teen-Hang Meen, Nung-Yi Lin, et al.
1303	95	An Analysis and Research of Deference Thickness Dye Sensitized Solar Cells Photoelectrodes on Transmission.	Chin-Guo Kuo, Jian-Lan Ni, et al.
1337	96	Top Laminated Graphene Electrode in an Air- Stable Semitransparent Polymer Solar Cell by Simultaneous Thermal Annealing/Releasing Method	Ya-Ting Yang, Yu-Ying Lee, et al.
1358	97	Enhance Organic Photovoltaics Performance by Using Titanium Oxide as Electron Transport Layer	Teng-Wei Shao, Yun-Chieh Yeh, et al.
1374	98	Influence of Solvents on Organic Photovoltaics	Hsuan-Ta Wu, Chu-Yun Hsiao, et al.
1383	99	In situ monitoring of the photovoltaic and transport properties of organic solar cells during thermal annealing	Kuang-Teng Hung, Chu-Yun Hsiao, et al.
1399	100	$\text{Cu}(\text{In}_x\text{Ga}_{1-x})\text{Se}_2$ Nanocrystals/P3HT Hybrid Solar Cell	Yi-Kai Lin, Shu-Hao Chang, et al.
1405	101	Study of Interfacial Sodium Doping in CuPc/C60-Based Heterojunction Organic Solar Cells	Hui-Ju Chen, Kuang-Teng Hung, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium A3: Materials for Energy Storage/Supercapacitor 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0316	102	$\text{Ag}@\text{TiO}_2$ core-shell nanowires : anode material for lithium-ion secondary battery	Yi-Cheng Kao, Li-Jen Chou
0469	218	Synthesis of Mesoporous Iron Phosphate Nanoparticles via a Solvent Extraction Route for Li-Ion Batteries	Junmei Zhao, Zelang Jian, et al.
0474	103	Microwave hydrothermal synthesis of iron oxide nanoparticles and their electrochemical performances	Hiroki Kimura, Kazuyoshi Uematsu, et al.
0592	104	Long-Term Cycling Stability of Manganese Oxide Electrochemical Capacitors	F. Ataherian, K. T. Lee, N. L. Wu
0599	105	Electrochemical Hydrogen Storage Properties of Composite Metal Hydride Alloy of Mg_2Ni and Mg_3AlNi_2	Fu-Kai Hsu, Sheng-Long Lee, Jain-Long Horng
0666	219	Design and tailoring tunable microstructures of Mn_3O_4 nanocrystals using self-assembled triblock copolymer	Ying-Feng Lee, Kuo-Hsin Chang, and Chi-Chang Hu
0667	220	Microwave-Assisted Hydrothermal/Solvothermal Synthesis of Tungsten Oxide for Electrochemical Capacitors	Ya-Ling Liu, Kuo-Hsin Chang, Chi-Chang Hu
0695	106	Deep eutectic solvent-based ionic liquid electrolytes for electrical double-layer capacitors	Yi-Jen Ju, Kuo-Hsin Chang, et al.
0718	221	Poly(3,4-ethylenedioxythiophene) on lithium iron phosphate for lithium ion battery	Jiun-Hung Li, Ding-De He, Chia-Chin Chang

Paper ID	Board #	Title of the poster	Authors
Symposium A3: Materials for Energy Storage/Supercapacitor 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0722	107	Anodic composite deposition of RuO ₂ xH ₂ O-GS/CNT for electrochemical supercapacitors	Chia-Wei Wang, Kuo-Hsin Chang, et al.
0744	108	Fabrication of 3-Dimensional Structure to Improve Cycle Performance of Sn-based Alloys in Lithium-Ion Batteries	Po-yen Chu, Wei-han Lai, Chao-hong Wang
0749	109	The effect of anions in electrolytes for the enhancement of MnO _x capacitive performance	Chi-Chang Hu
0759	222	The effect of lithium diffusion into Nano-Tin/TiO ₂ composite negative electrodes for Lithium-ion battery	Po Hsien Ko, Jun Wei Huang, et al.
0784	110	The effect of ionic liquid electrolytes on the cathode materials for Lithium ion battery	Chun-Yun Lin, Hui-Ju Kao, Chia-Chin Chang
0785	111	Improved electrolytes for Li-ion battery: Mixtures of ionic liquid and organic electrolytes	Hui-Ju Kao, Chun-Yun Lin, Chia-Chin Chang
0907	112	Preparation and Characterization of Metal Hydride Composites for Hydrogen Storages	Kuen-Song Lin*, Su-Wei Chiu, et al.
0914	113	Preparation, Characterization, and Hydrogen Storage Capacity of MIL-53 Metal-organic Frameworks	Mu-Ting Tu, Kuen-Song Lin*, et al.
1000	114	Crystal structure and electrochemical properties of the LiFeBO ₃ cathode materials synthesized by solid-state reaction	Hang-Chul Jung, Young-Dae Ko, et al.
1132	115	Effects of Reduction Processes on Characteristics of Graphene-based Anode for Lithium-ion Batteries	Shin-Liang Kuo, Wei-Ren Liu, et al.
1179	116	Silicon/graphene/graphite Composite Anode for Li-ion Batteries	Wei-Ren Liu, Shin-Liang Kuo, et al.
1184	117	Preparation of multi-modal nanoporous carbons for high-performance supercapacitor.	Yu-Ming Lin*, Li-key Chen, et al.
1192	118	Effects of the acetate concentration on the microstructures and electrochemical properties of NiCo ₂ O ₄ prepared by microwave-assisted hydrothermal synthesis	Hsiang-Yu Hsu, Kuo-Hsin Chang, Chi-Chang Hu
1257	119	The dehydrogenation properties of LiBH ₄ modified by CeCl ₃ mixtures	Zhe-Yuan Hu*, Yi-Ting Cheng, and Kuan-Wen Wang
1288	120	Nafion as a ion conducting binder of LiMn ₂ O ₄ powder cathodes for lithium ion batteries	Y.S.Chen, H.A.Peng, et al.
1290	121	Effect of Inductively Coupled Plasma Irradiation on Sputter Deposited TiO ₂ Films	C.C. Lin, P.Y. Liao, et al.
1295	122	Novel approaches to enhance electronic conductivity of LiFePO ₄ cathode materials	M. Wasiucionek, M. Aksienionek, et al.
1329	123	An Indole Derivative Polymer: Poly(5,6-dimethoxyindole-2-carboxylic acid) (PDMICA) as a Capacitor Material	Chen-Ya Tseng, Li-Chi Chang, et al.
1355	124	Fabrication of (DBSA) 3Fe secondarily doped polyaniline composite nanotubes for supercapacitors	Ming-Yi Chien, Sheng-Yen Shen, et al.
1390	125	Preparation of LiFePO ₄ Composite Cathode Material and Performance Analysis	Pao-Chia Chung, Hui-Jean Chiang, Yung-Fang Chen

Paper ID	Board #	Title of the poster	Authors
Symposium A4: Fuel Cells 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0051	126	Diagnosis and Accelerated Test of Composite Membrane Degradation in High Temperature PEM Fuel Cell	Fang-Bor Weng, Ay Su, et al.
0060	127	In Situ Measurement of the Inner Temperature of a Lithium Battery by Using a Flexible Micro Temperature Sensor	Chi-Yuan Lee*, Shuo-Jen Lee, et al.
0671	128	Effects of different solid rate and sintering temperature on performance of an water-based Anode film by tape casting	Hung-Yi Yen, Wen-Pin Weng, et al.
0675	129	Structure transformation between perovskite-type and B-type rare earth structures	N. Okita, A. Higashide, et al.
0676	130	Electrical properties of new brownmillerite-type $\text{Ba}_2\text{In}_{2-x}(\text{ZnZr})_x\text{O}_5$ system	S. Ito, M. Watanabe, et al.
0677	131	Relationship between oxide-ion conduction and dielectric properties of $(\text{Zr}_{0.82}\text{Ce}_{0.18})_{1-x}\text{Y}_x\text{O}_{2-\delta}$ ($0.0 \leq x \leq 0.20$)	K. Suzuki, M. Saito, H. Yamamura
0680	132	Electrical conductivity and dielectric constant of novel proton conductor $\text{Ba}_2(\text{Zn}, \text{M})_2\text{O}_{6-\delta}$ ($\text{M}=\text{W}, \text{Nb}$) having oxygen deficient perovskite structure	Miwa Saito, Tohru Sakurai, Hiroshi Yamamura
0707	133	High Power Plasma Sprayed Intermediate Temperature Solid Oxide Fuel Cells with SSC Cathode	Chang-sing Hwang, Chun-Huang Tsai, et al.
0758	134	Constructing a graphene-based support for enhancing the electrochemical properties and tolerance of Pt-Ru catalysts	Yu-Sheng Wang, Shin-Yi Yang, et al.
0848	135	Pd nanocatalysts on graphene composite electrodes in PEMFCs	Chien-Te Hsieh, Yung-Ying Liu, and Wei-Yu Chen
0902	136	Different parameters of carbonization temperature of the gas diffusion layer of fuel cell performance	Chien-Hsun Wang*, Tse-Hao Ko, et al.
0913	137	Promotion of Copper-Zinc Washcoat Catalyst Doped with Sm and Gd for a Steam Reforming of Methanol in a Microchannel Reactor	Wan-Ting Hong, Kuen-Song Lin*, et al.
0967	138	Hydrogen Generation from Aluminum and Aluminum Alloys Powder	Cheng-Chuan Wang, Ya-Ching Chou, et al.
1047	139	PAN Carbon Fiber used in fuel cell gas diffusion layer of the feasibility study	Wan-Shu Chen, Shu-Hui Cheng, et al.
1100	223	Two-Phase Approach for the Cathode Gas Diffusion Layer of Proton Exchange Membrane Fuel Cells	Chih-Hsuan Hsu, Ken-Ming Yin, Hsiao-Kuo Hsuen
1101	224	Pulse plating technique for the preparation of cathode catalyst layer of proton exchange membrane fuel cells	Ken-Ming Yin
1103	225	Hydrophilic treatment of the proton exchange membrane fuel cells	Ken-Ming Yin
1204	140	A Highly Active Cobalt Catalyst Supported on Titanium Oxide for Hydrogen Generation from Ammonia Borane	Huei-Mei Tsai*, Jung-He Kuo, et al.
1208	141	The investigation of Pt/C catalysts as the active layer of positive electrode for Vanadium Redox Flow Battery	Tseng-Tung Mo, Rong-Hsin Huang, et al.
1218	142	Preparation of Pt-Ru/CNT/Carbon Cloth catalysts by pulsed electrodeposition method for use in proton exchange membrane fuel cell	Yen-Yu Lin*, Tsung-Kuang Yeh, and Ming-Chi Tsai

Paper ID	Board #	Title of the poster	Authors
Symposium A4: Fuel Cells			
2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
1245	143	Evaluation of composite anode on doped CeO ₂ electrolyte prepared by microwave sintering	Yao-Ming Wang, Chien Wei Lai, Horng-Yi Chang
1271	144	Surface characteristics of the aluminum bipolar plates modified by chemical and displacement deposition methods	Sung-Ying Tsai, Ching-Yuan Bai, et al.
1286	145	Hydrogen Production over Cu Thin Films Electrodeposited on TiO ₂ /CNTs Nanocomposites	Ming-Chi Tsai, Kuo-Yang Huang, et al.
1341	146	Reaction between Strontium-Doped Lanthanum Vanadate and electrolyte material YSZ in reducing atmosphere	Chi-Yang Liu, Kuan-Zong Fung
1342	147	Fabrication of NiO-YSZ porous substrate by gelcasting and the capability in SOFC anode application	Hao-Wei Wu, Hsien-Chieh Chiu, Kuan-Zong Fung
1350	148	Design and Manufacturing of Microporous Layers for Direct Methanol Fuel Cells by Electrophoretic Deposition (EPD)	Barry Lin*, Jocelyn Hung, Rong-Fuh Louh
1354	149	Development of High Reliability Electrolyte-Supported Micro Tubular SOFC	Wen-Shuo Hsieh, Pang Lin, and Sea-Fue Wang
1376	150	Synthesis of a nanofibrous conducting polyaniline composite on the applications of a hydrogen fuel cell electrode material	Jing-Ping Chen, Ming-Je Tsai, et al.
1381	151	Characteristics of 10cmx10cm planar anode-supported SOFCs based on samaria-doped ceria electrolyte	Hsi-Chuan Lu, Sea-Fue Wang

Paper ID	Board #	Title of the poster	Authors
Symposium A5: Photo Catalytic Materials and Applications on Energy and Environment			
2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0093	226	Fabrication of PANI/TiO ₂ Nanotube Arrays by Cyclic Voltammetry Method	Wei Teng, Xinyong Li, Wei Xiong
0200	152	Synthesis of Three-Dimensional TiO ₂ /ZnO Arrayed Heterostructure as Supporting Platform for Nanoparticle Deposition	Yi-Ching Huang, Shou-Yi Chang
0208	153	Uniform 3D Flowerlike Copper Sulfide Nanostructures Synthesized From Copper (I) oxide Hollow Microspheres	Daxiong Wu, Yuejiao Wang, et al.
0215	227	Synthesis and activity of NaTaO ₃ photocatalyst for water splitting	Yuma Matsumoto, Koji Tomita, et al.
0272	154	Preparation of Nano Cerium Oxide Powder By Using Rapid Supercritical Solution Expansion Method	Pao-Chi Chen, M. S. Lin
0333	228	Facile synthesis and characterization of CaFe ₂ O ₄ /α-Fe ₂ O ₃ porous nanospheres	Yu Shen, Xinyong Li, et al.
0439	229	Characteristics of ZnO/Al/ZnO multilayers on glass with different ZnO film thicknesses prepared by cathodic vacuum arc deposition	Ru-Yuan Yang, Chien-Wei Huang, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium A5: Photo Catalytic Materials and Applications on Energy and Environment 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0440	230	Optimization of the cathode arc plasma technique processing parameters of ZnO film using the Taguchi method	Shuo-Fu Hsu, Jyh-Horng Chou, et al.
0441	231	Electric field on microstructure and optical properties of nano-Aluminum induced polycrystalline silicon thin films	Ru-Yuan Yang, Yu-jar Wang*, et al.
0493	155	Preparation of Modified TiO ₂ Films by Micro-arc Oxidation	WANG Yongqian, JIANG Xudong, PAN Chunxu
0523	232	Preparation and Photocatalytic Properties of La ₂ Ti ₂ O ₇ Based Nanocomposites	ChunHui Wu, Rui Wang, YongZheng Zhang, Hao Wang
0545	156	Syntheses and Growth of BiFeO ₃ and Bi ₂ Fe ₄ O ₉ by Hydrothermal Method	Ching-Yu Yang, Ying-Chan Liao, Cho-Jen Tsai
0572	157	Visible light photocatalysis of doped titanium oxide on buffer degradation and inhibiting E. coli bacteria	Kan-Hung Hu, Shing-Hoa Wang, et al.
0578	158	Zeta Potential and Hydrogen Production of Mesoporous Titanium Oxide	Koichi Niwa, Kouichi Tamura, et al.
0696	233	The Growth Mechanism and Morphology Control of Cathodically Deposited TiO ₂ Films	Huan-Ching Hsu, Kuo-Hsin Chang, and Chi-Chang Hu
0901	159	Photocatalytic Behavior of Single-Crystalline ZnO Nanowires on Fluorine-Doped Tin Oxide and Quartz	Jan-Hau Chang, Heh-Nan Lin
1009	234	Synthesis and Characterization of Nanocomposites of CdO/ZnO Metal Oxides by Electrochemical Method and its Application for Photodegradation of Eosin Yellow	S. Ananda*, G. Chaitanya Lakshmi, et al.
1033	160	Theoretical study of Chromium-doped SrTiO ₃ photocatalyst	Pakpoom Reunchan, Naoto Umezawa, et al.
1038	235	Fenton-enhanced and solar -driving microbial fuel cell system	Chun Cheng Tsai, Li Jen Chou
1044	161	Anti-fouling Fluorocarbon Paint Prepare and Test	Wang Wei-Hong, Huang Jia-Chi
1105	162	Visible Light Photocatalytic Oxidation of Gas-Phase Toluene with Spray-Coated C-Doped TiO ₂ on Polyester Filters	Li Zhang, Man Siu Tse, and Ooi Kiang Tan
1133	163	Au nanoparticle catalyst prepared by photoreduction on CuCrO ₂ nanopowder	Yu-te Lin, Te-wei Chiu, et al.
1138	164	Photocatalytic oxidization of the ammonia in water by a spin disc reactor	H. J. Huang, C. -T. Lin, et al.
1170	165	Pd Oxidation State Effect on Photocatalytic Activity of TiO ₂ Nanoparticles	Ming-Chung Wu, Min-Ping Lin, et al.
1229	166	Preparation and characterization of Printed CuIn(S ₂ S) ₂ thin films	C. Y. Lin, B. S. Sung, et al.
1230	167	Preparation of Light Absorber CuGaS ₂ Thin Films by Non-vacuum Processes	B. S. Sung, C. Y. Lin, et al.
1231	168	CuGaSe ₂ thin films prepared by particles-based printing processes	S. Y. Liao, J. Y. Gan, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium A5: Photo Catalytic Materials and Applications on Energy and Environment 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
1250	169	H ₂ O ₂ modified surface of nano-composite Ag-TiO ₂ -SiO ₂ -MWNT and enhanced photocatalytic activity on methylene blue	Chao-Chen Yang, Hsin-Yi Hsu*, and Sung-Ping Tsai
1285	170	The study on the preparation of LiFePO ₄ as cathode material for secondary lithium ion batteries by solid state method	Chao-Chen Yang, Hsin-Yi Hsu, Bo-Qing Huang
1370	171	Evaluation of the photochemical stability of silver indium sulfide photocatalyst thin film modified with zinc sulfide protective layer	Yu-Lin Kuo, Yi-Hsuan Peng, et al.
1408	172	On the structure and photo-electrochemical character of the array of TiO ₂ nanotubes prepared by electrochemical anodization	Y. W. Shih, Y. T. Tseng, et al.
1455	209	Microwave Assisted Hydrothermal Synthesis and Characterization of WO ₃ Nanopowder	Rajesh Adhikari ^{1*} , Tae- Ho Kim ² , et al.

Paper ID	Board #	Title of the poster	Authors
Symposium A6: Eco-materials and Technology on Climate Change (Greenhouse Gas Adsorbing Materials) 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0499	173	Development of CaO-based mesoporous silica as high-temperature CO ₂ sorbents	Chih-Hung Huang, Kai-Ping Chang, et al.
0644	174	Evaluation of Fe ₂ TiO ₅ as Oxygen Carriers for Chemical Looping Process	Yu-Cheng Liu, Young Ku, et al.
0663	175	Development of Multi-channel Cermet Membrane for Hydrogen Purification	Chih-Fang Tsai, Wan-Ying Chen, et al.
0664	176	Preparation of Composite Ni-Fe Oxide as Oxygen Carrier for Chemical Looping	Yao-Hsuan Tseng, Jia-Long Ma, et al.
1001	177	Plasma Catalytic Decomposition of VOCs using Non-thermal Plasma	Jin Guk Jeong, Hyeong Seok Lee, et al.
1012	178	Preparation and Sintering Behavior of Mullite-Alumina composite Ceramic via Shell Coating of Nanometer Amorphous SiO ₂ on Al ₂ O ₃ powders	Chih-Cheng Chen, Chun-Liang Chen, et al.
1174	179	Hydrogen Permeation and Separation of PdCuP/Al ₂ O ₃ Composite Membranes Prepared by Electroless Co-deposition	T. K. Tsai, Y. C. Lin, et al.
1185	180	Using Chemical Modified Bamboo Powder to Improve the Plant Germination Rate in Clay-enriched Soil	Y.-J. Liou, Y.-C. Yeah, et al.
1266	181	A comparative study of NO gas sensor performance of ZnO hollow half-sphere and urchin-like structures	Hoang Nhat Hieu, Nguyen Minh Vuong, et al.
1449	182	Lipids extraction from microalgae by supercritical carbon dioxide	Jhih-Hong Chen*, Tz-Bang Du, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium A7: Materials for Nuclear Power Applications 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0239	183	Stress Corrosion Cracking in Dissimilar Metal Welds of 304L Stainless Steel and Alloy 82 in High Temperature Pure Water	Tsung-Kuang Yeh, Guan-Ru Huang, et al.
0962	184	Oxidation Mechanism of Inconel 625 Alloy in Various Temperatures Supercritical Water Environments	Kai-Hsiang Chang, Cun-Bin Yan, et al.
0963	185	Corrosion of Ni-based Alloys in High Temperature Molten Salt Environments	Chi-Hung Chang, Kai-Hsiang Chang, et al.
0964	186	Atomic scale investigation and Structural Evolution for 3-D C-C composite under ion irradiation	Shuo-Cheng Tsai, Han-Ya Jen, Ji-Jung Kai
1097	187	Tensile flow behavior in Inconel 600 superalloy at elevated temperatures	Horng-Yu Wu, Pin-Hou Sun, et al.
1217	188	Using an oxidation kinetic model to evaluate the lifetime of steel containers for low level radioactive waste storage	Li Chung, Yee-Ping Chia, Mao-Hua Teng
1284	189	The Influence of ZrO ₂ Coating on the Corrosion Behavior of Type 304 Stainless Steels in High Temperature Pure Water	C. Y. Li ¹ , T. K. Yeh, M. Y. Wang
1297	190	A New Novel Anode Material Li ₃ Fe ₂ (PO ₄) ₃ for Lithium-ion Battery	Chun-Peng Lin, Yi-Ting Li, et al.
1298	191	Synthesis and Characterization of TiO ₂ for Anode Material Lithium-ion Battery	Hong-Yi Lin, Pin-Shiuan Li, et al.
1404	192	Stress Corrosion Cracking of 304SS-Alloy82 Dissimilar Weld Metal in simulated environment BWR	C. H. Tsai, T. K. Yeh and M. Y. Wang
1409	193	An investigation into stress corrosion cracking of dissimilar metal welds of 304 stainless steel and alloy 82 applying crevice bent beam method in high temperature water	T.K. Yeh, M.Y. Wang
1424	194	An Investigation into SCC of 316L SS - Alloy52 Dissimilar Metal Weld in Simulated BWR Environment	W. Y. Chen*, T. K. Yeh, M. Y. Wang

Paper ID	Board #	Title of the poster	Authors
Symposium B1: Bio-medical Materials (Materials Science in Regenerative Medicine) 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0258	196	Electrochemically Induced Deposition of Enamel-Like Coating for Tooth Repair	Z.D. Feng, Y.M. Liao
0308	1	Fabrication of Chelate-setting Cements from Hydroxyapatite Powders Surface-modified with Various Sodium Inositol Hexaphosphate Concentrations and Their Mechanical Properties	T. Konishi, M. Mizumoto, M. Honda, M. Aizawa
0674	2	A Pilot Study of the Thermo-Gel Composite Applies to Bone Tissue Repair	Carl Tsai-Yu Lin, Po-Liang Lai, et al.
0838	3	Ultrastructural Observation of Hydroxyapatite Ceramics with Preferred Orientation to a-plane using High-resolution Transmission Electron Microscopy	Z. Zhuang, T. Miki, M. Yumoto, M. Aizawa
0955	4	Ultrasonic assisted drug control release system consist of thermal sensitive polymer	Kuo Feng Chou, Yu Zhen Yang, et al.
1186	5	Analyzing of Major Active Components in Pteris multifida Poiret Using Supercritical Carbon Dioxide Extraction	Hsu-Yu Yu , Chiao-Song Wu
1324	6	The Effects of Heat Treatment Atmosphere on the Bone-Like Apatite Inducement on the Alkali Treated Ti-6Al-4V Surfaces	Chi-Fen Lu, Hsin-Ming Huang, et al.
1352	7	Enhanced Photocatalytic Performance of Highly Dispersed Ag/TiO ₂ Nanoparticles	Simon Han*, Alex Liu, et al.
1394	8	Zirconia coating on 316L stainless steel for corrosion protection in chloride ion-containing media	Tai-Chen Chen, Kuan-Zong Fung

Paper ID	Board #	Title of the poster	Authors
Symposium B2: Biocompatible and Biodegradable Materials 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0210	197	Molecular Dynamics Simulation study of water adsorption on the rutile (TiO ₂) (110) surface	Chunming Sun, Qiaosong Huang, et al.
0317	9	Study of Tricalcium Silicate Doped with Strontium Prepared through a Sol-gel Process	Ren-Jei Chung, and Sheng-Kuei Fan
0678	10	Toxicity assessment of Fe, Cr and Ni cations selectively leached from 316L stainless steel	Shih-Hang Chang, Yung-Chih Lin, et al.
0816	11	Thermosensitive Hydrogels For Biomedical Application	Meng-Yow Hsieh, Wen-Fu Lee, et al.
0845	12	Computational Modeling of Intravascular Stent Mechanical Behavior	Yi-Hsiang Chiu, Hao-Ming Hsiao, et al.
0882	198	Electrospun nanofibrous membrane as wound dressing scaffolds for loading and controlled drug release	Wei Li, Huacong Zhou, et al.
0954	13	The Effect of Microwave Treatment on Mechanical Properties of Gelatin	Kuo Feng Chou, Han Sheng Chiu, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium B2: Biocompatible and Biodegradable Materials 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0970	14	Release Kinetics of Drug in Poly(L-lactide)/Poly(ethylene glycol) Triblock Copolymers: Effect of Hard Segment Length and Intermolecular Force	Chiu-Jung Chen, Shiao-Guang Hu
1059	15	Chitosan-alginate hollow hydrogel beads for controlled release of Bitter melon	Hong-Ru Lin*, Yu-Chiao Chen, et al.
1127	16	Preparation and application of chitosan-oxalic acid gel beads	Fu-Ming Lin, Tsung-kuan Lin, et al.
1142	17	In situ formation of biphasic calcium phosphates and their biological performance in vivo	Tae-Wan Kim, Dong-Hyun Kim, et al.
1146	18	Nanoscale characterization of the biodegradable behavior for biphasic calcium phosphates using X-ray diffraction and lattice parameter	Dong-Hyun Kim, Bong-Seok Choi, et al.
1151	19	Nanostructure characterization of ibuprofen/clay nanocomposites as drug release system	Bong-Seok Choi, Dong-Hyun Kim, et al.
1152	20	Suitability evaluation of magnesium substituted biphasic calcium phosphates prepared by co-precipitation method	Hyoung-Sin Lee, Tae-Wan Kim, et al.
1265	21	The Epoxidized Soybean Acrylate Derivatives for Reworkable and UV curable Coating	Chun-Yao Ou, Chi-Shen Tuan, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium B3: Nanotechnology for Bio/Medical Materials 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0136	22	Transmission Electron Microscopy Observation of Antibody	Marina Kamogawa, Junichi Shimanuki, Takashi Ishiguro
0233	23	Fabrication of LSPR Sensor Using Porous Titania-Glass Composite Loading Au Nanoparticles by Photocatalytic Deposition Method	Makoto Akagi, Sayaka Yanagida, Atsuo yasumori
0290	199	Ammonia Sensitivity Enhancement of Poly-Silicon Nanowire Gas Sensor	Y-R. Lo, H-M. P. Chen, et al.
0329	24	One-Pot Synthesis of Confeito-Like Au Nanoparticles and Their Biomedical Applications	Masaki Ujihara, Toyoko Imae
0407	25	Study of Water-Soluble Iron-Gold Alloy Nanoparticles for Biomedical Applications	Ren-Jei Chung, and Kou-Ting Wu
0528	26	Evolution of Morphology of Nano-scaled CuO Growth on Copper Metal Sheet in Salt Spray Fog Environment	Hao-Long Chen, Tsung-Hsun Chiang, et al.
0623	27	An in vivo and in vitro investigation of nano-sized materials: Their biodistribution and biocompatibility	Nobuki Iwadera, Shigeaki Abe, et al.
0709	28	Preparation of metal nanoparticles by femtosecond laser irradiation method	Joseph Lik Hang Chau, Chun-Yen Chen, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium B3: Nanotechnology for Bio/Medical Materials 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0753	29	Biocompatibility and biodistribution of poly (lactic acid)-coated micro/nano particles	Shigeaki Abe, Akiko Sasaki, et al.
0878	30	Preservation and cultivation of stem cells on the surface having nano-segments	Ching-Wen Chen, Akon Higuchi
0917	31	Synthesis and Characterization of the Co-57 contained CoO@SiO ₂ Nanoshell Aqueous Colloids for Positron Emission Tomographic (PET) Imaging Agent	Min-Jae Kwon, A-Ran Kim, et al.
0919	32	A Novel Synthetic Route for the Layered Zinc Hydroxide by Electron Beam Irradiation	Hyo-Sun Bae, Hyun Jung
1058	33	Physicochemical characterization of novel Pluronic-Chitosan micelle as an ocular delivery system	Hong-Ru Lin, Pei-Csang Chang, et al.
1107	34	One-Step Growth of SiNWs/ Ag Nanodendrites via EMD Method for Water Sterilization of E. coli Inactivation	Cheng-Wei Chang, Po-Jung Huang, et al.
1165	35	Synthesis of Different Amount Au and Ag Nanoparticles on SiO ₂	Yu-Han Wu, Kuo-Chuang Chiu, Ren-Der Jean
1259	36	Synthesis of bioactive NaHTi ₃ O ₇ films on Ti/Si substrates by a hydrothermal-galvanic couple technique	Chia-Jung Yang, Ling-Su Chao, et al.
1359	37	Synthesis and in vitro Biocompatibility Assay of Fe ₃ O ₄ Nanoparticles	L. Li, K. Y. Mak, et al.
1398	38	Improvement in Hydrophilic Characteristics of Oxide Layer on Ti Substrates With Different Surface Treatment Methods	Yu-Cheng Su, Kuan-Zong Fung

Paper ID	Board #	Title of the poster	Authors
Symposium B4: Biosensors and Bio-imaging 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0260	200	Influence of Water Content on Pyroelectric Properties of Human Dentin	Z.D. Feng, T. Wang
0817	39	The fabrication of CMOS FET bio sensor for the detection of E-coli	Ji-Hyoung Roh, Kyu-Sik Shin, et al.
1240	40	A study of the practicability of using disposable electrochemical biosensor to detect alpha-methylacyl-CoA racemase	Po-Yuan Lin, Kai-Lun Cheng, et al.
1260	41	Highly Porous Tungsten Oxide Nanowires as Resistive Sensor for Reducing Gases	Nguyen Minh Vuong, Hoang Nhat Hieu, et al.
1264	42	Highly sensitive hydrogen peroxide amperometric sensor based on TiO ₂ /SWCNTs composite	Nguyen Quoc Dung, Dewyani Patial, et al.
1332	43	Graphene modified PVA nanofiber Membranes via Electrospinning for Glucose Oxidase immobilization	C.M. Wu, S.L. Lin, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium B6: Materials for Implant 2011/9/20 09:00-14:00 Main activity: 13:00-13:40			
0252	195	Mechanical Properties of Porous Ti-Mo and Ti-Nb Alloys for Biomedical Application by Glecasting	Donghua Yang, Huiping Shao, et al.
0706	44	Hardening Process of Bio-cements Mixtures - Calcium Phosphate and Calcium Sulfate	L.H. Huang, S. B. Chou, W.C. Say
0708	45	Calcium Contained Bio-ceramics for the Implanted Materials	L.H. Huang, S.J. Yu, C. C. Chang, et al.
0886	46	Mineralization of progenitor cells with different implant topographies	Wen-Cheng Chen, Yang Lo, et al.
0899	201	Defect induced ferromagnetism in 4H-SiC single crystals	Lin Li, Wei Hua, et al.
0900	202	Visible Light Photocatalytic Activity of Micro-Arc Oxidized Titanium for Implant Applications	Dan-Jae Lin*, Heng-Li Huang, et al.
1005	203	Hydrothermal Synthesis and Mechanical Characterization of the Yttria-Stabilized Zirconia by Urea content	Lee Hak-Joo*, Yoon Ji-Young, et al.
1076	47	In Vitro Evaluation of Osteoblast-like Cell Adhesion and Proliferation on Bioactive-treated Titanium Dental Implants	Yi Lin, Tzu-Huang Kuo, et al.
1414	48	Corrosion Resistance and Biocompatibility of Electrochemically Anodized New Ti Alloy (Ti-Nb-Zr-Sn) with Low Elastic Modulus	Chia-Fei Liu, Shu-Jun Li, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium C: Materials Modeling, Simulation, and Characterization 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0007	179	First-principle theory study on Misfit Layered Cobaltite and Doped Series	MIN Xinmin, ZHU Lei, LIU Hongfei
0121	180	Optimization Design of Motor Block Resistor for High Speed Train Through Component Analysis	Keun-Seok Park, Jae-Myung Shim, et al.
0124	181	Surface and Component Analysis of ACSR Transmission Line Due to a Flame	Dae-Dong Lee, Jae-Myung Shim, and Young-Dal Kim
0466	1	Phase-field simulation of grain growth in anisotropic systems	Dan Cai, Lijun Zhang, Yong Du
0566	182	Surface Optical Phonon of Single ZnS Nanobelt	Hsin-Hua Wang, Cheng-Ying Chen, et al.
0594	183	First-Principles Study of Mn Impurities in GeSbTe Phase-Change Materials	Baisheng Sa, Zhimei Sun
0756	2	Influence of extrapolation method on thermodynamic properties of the ternary system.	Md. Azizul Haque, Wojciech Gierlotka
0775	3	Microstructural Characterization of Ni ₅ Zn ₂₁ at Sn-9Zn/Ni Interface	Po-yi Li, Hsien-hsin, Chen, et al.
0824	184	The gas discharge characteristics between parallel plate electrodes at low pressure	Guan-Jun Qiu, Ming-Chung Liu, et al.
0997	185	Hydrothermal Synthesis and Morphology of Layer-curling Kaolinite	Yang-Yang Zhang, Ya-Xi Huang, Jin-Xiao Mi
1072	4	Effect of casting parameters on microstructure and casting quality of Si-Al target for NCM process	In-Ting Hong, Hung-Shang Huang, et al.
1099	5	Simulation of residual thermal stress distribution for multi-crystalline silicon casting and its experimental verification by numerical system	Jing-Wei Huang, Weng-Sing Hwang, Ya-Wen Chang
1116	177	Fracture-induced concentric semi-circular patterns on the surface of polymer films	Pei-Yu Liang, Sanboh Lee
1117	6	Simulation of Phase Change Memory for Heat Transfer	Yin-Hsien Huang, Tsung-Eong Hsieh
1147	7	Modeling Phase Transformation in Hot Rolled Low Carbon Steel	Brmi Su, Sin-Jie Luo, et al.
1150	8	Comparing mechanical properties of crystalline and amorphous metal by molecular dynamics simulation	Wei-ting Liu, Wen-dung Hsu*
1153	9	First-principles study of the liquid Li-Si alloys: Structures and Dynamics	Han-Hsin Chiang, Chin-Lung Kuo
1166	10	Exchange bias in epitaxial NiO/Ni ₈₀ Fe ₂₀ bilayers	Young-Ching Tai, Ching-Hung Hsiao, et al.
1178	11	Structural Deformation of Nickel Nanopillar and of Iron Nanopillar Under Tensile Loading Through Molecular Dynamics Simulation	Ping-yu Chuang, Wei-cheng Hung, Wen-dung Hsu*
1201	12	First-principles Analyses of Unusual Ferromagnetism Observed in CrSi ₂ (core)/SiO ₂ (shell) Nanocables	Cheng-Tse Lee, Shian-Hao Chiou, et al.
1216	13	High temperature corrosion behaviors of the superheater materials	Wenwen Luo, Zongde Liu, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium C: Materials Modeling, Simulation, and Characterization 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
1222	14	Preparation and Characterization on the Synthesis of Cubic MCM-48 Mesoporous Molecular Sieves	Tzong-Horng Liou, Liang Chu, Bo-Chen Lai
1223	15	Synthesis and Surface Characterization of Silica with Well-ordered Mesostructure Controlled at Acidic and Alkaline Environments	Tzong-Horng Liou, Jheng-Jhe Lee, et al.
1235	16	First Principles Study of the Structure and Electronic Properties of Amorphous HfO ₂	Tsung-Ju Chen and Chin-Lung Kuo*
1236	17	Heat treatment of the high conductivity copper alloy	Teng Mao-ying, Shieh Shao-Tung
1237	186	The Corrosion Behavior of Brass	Teng Mao-ying, Liu Hsu-Cheng
1239	178	Chlorophyll extraction from herbaceous plants at elevated temperatures	Shu-Mei Hung, Ban-Dar Hsu, Sanboh Lee*
1270	18	Structural and Electronic Properties of Graphene on SiO ₂ Substrates	Chi-Jen Yang, Chin-Lung Kuo
1276	19	The influence of third doping elements V/Nb on microstructure and coercivity enhancement for SmCo ₅ /SmCo ₇ /SmCo _{6.7} V _{0.3} /SmCo _{6.7} Nb _{0.3}	Y. W. Hsu, Y. Y. Chen, et al.
1304	20	Using Master Kinetics Curve Model on the Thermal Decomposition of Kyanite	Shang-Ting Wu, Mao-Hua Teng
1339	21	Molecular Dynamics Study of Nanoclusters' Role in Mesoplasma Epitaxy	L.W. Chen, Y. Shibuta, et al.
1347	22	Effect of tip shape in the nanoindentation of Cu substrate	Shin-Yu Tseng, I-Hsien Chen, Wen-Dung Hsu*
1348	23	Electrophoretically Self-Assembled Monolayers of Polystyrene Microspheres on ITO Glass Substrates	Andy Hong, Peggy Shih and R.F. Louh
1366	24	A novel vehicle probe design for better SThM performance	Fang-Yi Liao, Jian-Hong Chen, et al.
1367	25	Electrostatic manipulation of nanoparticles with a crater-shaped AFM tip	Kun-Lin Li, Bernard Haochih Liu
1377	26	Studies of Polyaniline Nanorods prepared with cetyltrimethylammonium bromide and its salts	Hsin-Yu Pu, Sheng-Yen Shen, et al.
1392	27	Investigation of the optimal design of Torsional Resonance mode AFM cantilevers operated in fluids	Sheng-Kai Chuang, Bernard Haochih Liu
1426	28	Computer simulation of nanocluster formation by ion beam implantation	Kun-Dar Li
1427	29	Preparation and properties of Ni/NiO core-shell nanoparticles with a surfactant-mediated method	Lay Gaik Teoh, Kun-Dar Li, Yi Hsuan Liu
1448	30	Influence of Nitrogen Partial Pressure and Substrate bias on the Mechanical Properties of VN Coatings	Yuexiu Qiu, Sam Zhang*, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium D1: Light Metals (Magnesium, Aluminum, Titanium) 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0069	145	Fatigue Crack Growth of Ti-15V-3Cr-3Sn-3Al Alloy	S. T. Chang, L. W. Tsay*
0119	273	Deterioration Degree Estimation through Tension Load Analysis of ACSR Due to a Flame	Dae-Dong Lee, Young-Dal Kim, et al.
0360	146	Suzuki Segregation and Stacking Fault Energies in Mg Based Binary Alloys Using First-Principles Results	Tokuteru Uesugi, Kenji Higashi
0561	147	Effects of pre-sputtered Al interlayer on the atomic layer deposition of Al ₂ O ₃ films on Mg-10Li-0.5Zn alloy	P.C. Wang, M.L. Chang, et al.
0563	148	Improvement of hydrogen absorption properties of Mg-Zn-Zr alloy by additions of activated carbon and vanadium	K.M. Lin, K.C. Hu, C.Y. Lin, H.C. Lin
0672	274	Effect of cold-rolling and aging treatment on mechanical properties of magnesium alloy with minor Sc addition	C.Y. Fan, Y.T. Chen, T.W. Guo, J.Y. Wang
0673	275	Research on wear resistance properties of the eutectic Al-12%Si alloy by different MAO treatments	J. T. Chen*, J. F. Du, J.Y. Wang
0687	276	The Effects of Minor Addition of Sc on Microstructure Variation and Properties and Fracture Models of High Cu/Li Ratio Al-Li-Cu-Mg-Ag-Zr-Ti Alloys	YIN Dengfeng , YU Zhiming, et al.
0746	149	The preparation of aluminum alloy carburetor shell by pore-free die casting	Y. H. Chou, C. C. Yang, et al.
0781	150	The effect of grain refinement on oxide layer evolution and its corrosion resistance of T-6Al-4V by using Thermal Hydrogenation Processing (THP)	L.M. Wang, C.C. Shen, et al.
0796	277	Effects of Y on Microstructure and Mechanical Properties of hot-extruded Mg-Zn-Mn Alloys	Fu-Gang Qi, Ding-Fei Zhang, et al.
0820	151	Microstructure and mechanical properties of Mg-14Li-1Al-(0, 0.3) La alloys	Li ruihong, Pan fusheng, Jiang bin
0842	152	The studying of heat dissipation of aluminium plane with array convection pores	Jenn-Shing Wang*, Yu-Ching Wang , et al.
0921	153	Synthesizing 6061 Aluminum Powder by Rapid-Solidifying Atomization and its Thermal and Mechanical Properties	Yi-Chuan Chen, Chi-Yuan A. Tsao*, et al.
0922	278	Study on Critical Damage Factor and the Phenomenological Constitutive Model including Dynamic Recrystallization Softening of AZ80 Magnesium Alloy	Yong Xue, Zhimin Zhang, et al.
0938	154	Fabrication and characteristics of extrusion tube on high-strength magnesium alloy using high-temperature seamless extrusion	Yong-Ho Kim, Hyeon-Taek Son
0972	155	Effects of Nd and Dy Addition on Microstructure and Mechanical Properties of Mg-5Al-3Ca Based Alloy	Hyeon-Taek Son and Dae-Won Kim
0992	266	Effect of lubrication on microstructure and textures in AZ31 Mg alloy during warm-rolling	Dae-Guen Kim, Hyeon-Taek Son, et al.
1004	156	Ageing behavior of AZ61-xPd(x=0, 1, 2, 3wt.%) alloys	Sang Hyun Kim, Byeong Ho Kim, et al.
1073	157	The development of high-purity aluminum target for LCD	In-Ting Hong*, Hung-Shang Huang, et al.
1086	158	Joining Magnesium by In/Zn Laminated Foils	Ssu-Hao Chen, Jyun - An Fang, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium D1: Light Metals (Magnesium, Aluminum, Titanium) 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
1098	159	Tensile properties and shallow pan rapid gas blow forming of commercial fine-grained Mg alloy AZ31B thin sheet	Horng Yu Wu, Pin Hou Sun, et al.
1114	160	The Effect of the Twined-Columnar Structure on the Tensile Property of Commercial purity Aluminium	Chung-Yi Yu, Han-Cheng Shih, Pei-Ling Sun
1140	161	Influence of Pd on Mechanical Properties of Mg-4Al-2Sn alloy	Byoung Soo Kang, Byeong Ho Kim, et al.
1183	162	Microstructure and properties of Ti-8Mo-12Fe and Ti-8Mo-8Cu alloys with Cr ₃ C ₂ additives produced in the powder metallurgy processes	Jung-Ting Tsai, Cheng-Yu Han, et al.
1196	279	Development of high strength and high-extrusion-rate Mg alloys	Wei-lun Chang, and Jien-Wei Yeh
1278	163	Microstructural and Properties Study of The Friction-Stir Welding of 6061-O Aluminum	Y.L. Lin, Y.T. Lin
1320	164	Reheating characteristics of Al-6Zn-2.5Mg-0.5Cu alloy for Thixo-extrusion	Seung-Hwa Choi*, Bong-Hak Seong, et al.
1321	165	The study on hot tensile properties of hot extruded semi-solid Mg-10Al-Mn alloy	Dae-Hwan Kim*, Hee-Kyung Kim, et al.
1450	166	Fabrication and Morphological Behavior of Electrospun 3 mol.% YSZ-doped with 5 mol.% YNbO ₄ Nano-fiber	Firman Mangasa, Tsung-Her Yeh and Chen-Chia Chou

Paper ID	Board #	Title of the poster	Authors
Symposium D2: Bulk Metallic Glasses and High-entropy Alloys 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0394	167	Microstructure Evolution of Ni-free Zr base BMG	K. C. Wu, P. J. Hsieh, et al.
0397	168	Zr Based Bulk Metallic Glass as Surgical Blade	Y. Z. Lin, P. H. Tsai, et al.
0711	169	Novel WC/multi-element alloy cermets material	Chi-San Chen, Chih-Chao Yang, et al.
0712	170	The cobalt free binder metals of WC super hard composite	Chi-San Chen, Chih-Chao Yang, et al.
0942	171	Enhanced Plasticity of Ti-based Bulk Metallic Glass Composite with Different Secondary Phases	W.H. Ryu, C.W. Ryu, and E.S. Park*
0973	267	Structural relaxation effect on the toughness of Zr-based	C. C. Yuan, D. Q. Zhao, et al.
1145	172	Corrosion properties of low-entropy and high-entropy alloys	Chai-Yan Gan, Swe-Kai Chen, Su-Jien Lin
1194	280	Wear behaviour of hardfacing high-entropy alloys	Shiuan-An Rau, Ming-Hao Chuang, et al.

Paper ID	Board #	Title of the poster	Authors
1203	173	Hall effect, and electrical and magnetic properties of FCC and BCC-FCC Al _{0.25} CoCrFeNi _x (0.25 ≤ x ≤ 2) high-entropy alloys	Chih-Yuan Hsu, Swe-Kai Chen, Su-Jien Lin
1212	281	A thick Fe-based amorphous coating by laser cladding	Yongtian Wang, Guang Yang, et al.
1233	174	Plasticity Modification of Metallic Glasses by Electropulsing	Pakman Yiu, J. S. C. Jang, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium D3: Advanced Technology for Steels and Other Metals 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0042	175	Effects of Recycling Desulfurization Slag on the Characteristics of Molten Steel	C.M. Lin, L.H. Chen, et al.
0120	282	Lifetime Estimates of an Overhead Transmission Lines Exposed to a Flam	Dae-Dong Lee, Jae-Myung Shim, et al.
0140	176	The evolution of embrittlement in annealed Fe-Si-B amorphous ribbons	Hsin-Yi Lee*, Ming-Chin Tsai, et al.
0141	177	A study on Characterizations of Microstructure in Coarse Grain HAZ and Phase Transformation Mechanism of Acicular Ferrite in Steel Weldment by High Heat Inputs	San-Ho Chen, Yo Chen, et al.
0197	178	The crystallography and morphology of TiC precipitates in Ti containing HSLA steel	H. W. Yen, C. Y. Chen, et al.
0442	179	A Novel Non-cyanide Silver Plating Bath	Li-Jiuan Chen, Hsiou-Jeng Shy, et al.
0484	180	Effect of hot band annealing process on the Secondary Recrystallization Behaviors of Grain Oriented Electrical Steels	Chine-Chih Chen and Chun-Kan Hou
0510	181	High-temperature Brazing Porous W	C.C. Lin, C. Chen, R.K. Shiue, S.C. Shi
0526	182	Effect of spheroidization of Ti-6Al-4V powders on characteristics and rheological behaviors of gelcasting slurry	Yanwei Sheng, Zhimeng Guo, et al.
0534	183	The effect of Widmanstätten ferrite on yield plateau of stress-strain curves in Nb-containing steel bars	Bo.Ming. Huang, Hung.Wen. Yen, et al.
0681	184	The Medium Temperature Deformation of interphase precipitated steel	Yo-Lun Yang, Shing-Hoa Wang, et al.
0745	185	The Combustion Phenomenon of the Particles in Spark Test by High-speed Video Camera	Jenn-Shing Wang, Yuan-Shun Cai, et al.
0832	186	The Recycle Process of Enamel-insulated Wire with the surfactant	Jenn-Shing Wang*, Wei-Zhin Lein, et al.
0873	187	Heat processing of copper beryllium alloy microstructure and mechanical properties	C. S. Lin*, Y. P. Wu, and H. Y. Bor
1002	188	Preparation of Nano Cobalt Powder by Wet-Chemical Reduction Method at Room Temperature	Geon-Hong Kim, Hang-Chul Jung, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium D3: Advanced Technology for Steels and Other Metals 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
1046	189	Microstructure and mechanical properties of a Nb-microalloyed medium carbon steel treated by quenching-partitioning process	N. Zhong, W. Q. Lin, et al.
1075	190	Substructure of Martensite in High Carbon and High Silicon Steel	Chun-Yuan Huang, Hsin-Yi Lee, and Jen-Ren Yang
1079	191	The Microstructural Development of Al-containing Superbainitic Steels	Yi-Liang Tsai, Yu-Ting Tsai, et al.
1089	192	Evolution of Tempered Microstructure in a Super Bainitic Steel	Hsiao-Tzu Chang, Hung-Wei Yen, et al.
1093	283	Novel Structured Coatings by Gas Tunnel Type Plasma Spraying	A. Kobayashi, Y. Sbramanium, and Y. Ando
1148	193	Effect of Pulse Plating Frequency on Electrical and Mechanical Properties of Electrodeposited Copper Films	Ya-Wen Lin, Jui-Jie Chen, and Jui-Chao Kuo
1238	194	The Melting Process of Al-Cr-Brass	Teng Mao-ying, Shieh Shao-Tung
1292	284	Effect of chloride ions, pH and temperature on crevice corrosion behavior of 304 stainless steel in drinking water	S. A. Park, Y. H. Kim, J. G. Kim
1313	285	Effect of Sintering Conditions on Microstructure of ODS Tungsten Heavy Alloy	Chun-Ling Huang, You-Ming Dong, Chun-Liang Chen
1317	286	Study of Iron-Based ODS Alloy by Mechanical Alloying	You-Ming Dong, Chun-Ling Huang, Chun-Liang Chen
1360	287	A way to control deformation of metal parts during heat treatment	Lu Yuan, Kang Jin-wu
1363	195	Partial pressure of oxygen and the impact of melting lead and tin alloy	Chin-Guo KUO, Wen-Pin Weng, et al.
1430	288	Effect of Mulling of Green Sand and Metallurgical Parameters on the Fluidity of Molten Irons	Un-Chin Chai, Lih-Ren Hwang, et al.
1431	289	The Affection of Molding Sands and Metallurgical Parameters on Ferrous Castings	Lih-Ren Hwang, Un-Chin Chai, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium D4: Composite Materials 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0162	196	Simple Fabrication of Ni-NiO Core-Shell Nano Arrays for UV Photodetection without an external bias	Chien-Min Liu, Chih Chen
0183	197	Superhydrophobic Oleophobic Low Moisture Permeation Transparent Nanocomposite Film	Yuan-Ling Chang, Sheng-Hao Hsu, et al.
0269	198	The Effects of Diamine Composition on the Properties of PMR Polyimides and Carbon-Fiber Reinforced Composites Thereof	Ling-Yueh Yang, Shyi-Liang Jwo, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium D4: Composite Materials 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0334	199	Investigate the Degradation of Fatigue Stiffness of Carbon/Epoxy Laminate and Analyze Fatigue Damage by C-Scan	Hsing-Sung Chen, Bau-Ming Yu
0342	200	Synthesis of cobalt particle from cobalt sulfate heptahydrate	J. H. Lee, S. H. An, et al.
0348	201	Nanocrystalline hierarchical porous Beta Zeolite: An Efficient Catalyst for the Acylation of Toluene	L. Selva Roselin, Hsiu Ling Hsu and Rosilda Selvin
0381	202	Selective Growth of GaSb Quantum Dots on GaAs Nano-ring Structures by Metalorganic Molecular Beam Epitaxy	Katsuhiro Uesugi, Takanari Yumi, et al.
0619	203	Study on the Dyeing Ability and Surface Properties of Polypropylene Knit Fabrics using Pen-Type RF Plasma Treatment	Lee Mei-Hui, Liu Jen-Yung, et al.
0622	204	Anti Corrosion Behavior Analysis of Viscoelastic Damping Material	Wei bo Huang, Jing Zhang, Ping Lu
0662	205	Fabrication of Composite Ru/RuO ₂ Films via Electroless Deposition on Si Substrate	Shiau-Lin Huang, Jing-Yu Chen, et al.
0679	206	Analysis of damping characteristics for sandwich cantilever beams with a polyurea viscoelastic layer	Wei bo Huang, Xu dong Liu, Ping Lu
0710	207	Fabrication of Metal incorporated-AZO nanocomposite sputtering target	Joseph Lik Hang Chau, Yu-Hsien Chou, et al.
0716	208	SiO ₂ @Ag core-shell nano-echinus exhibiting remarkable optical and electrical properties	Yi-Fan Liang, Kuang-Hsiu Chen, et al.
0844	290	Electrochemical performance of Li ₄ Ti ₅ O ₁₂ anodes using microwave-assisted Zinc nanocoating	Chien-Te Hsieh, Bi-Sheng Chang, Jia-Yi Lin
0846	209	Electrochemical Performance of Spinel Li ₄ Ti ₅ O ₁₂ Anodes Incorporated with Rutile Titania Nanocrystallites	Chien-Te Hsieh, I-Ling Chen, and Jia-Yi Lin
0850	291	Influence of parameters on Fe-TiCN Composites Prepared by Ilmenite	Chen Min, Tang Aitao, Wang jian, Liu Chuanpu
0946	210	Synthesis of in-situ Al/AlN Composite by Gas-melt Reaction at Highly Elevated Temperature	J. I. Lee, H. G. Choi, et al.
0968	292	The influence of dispersant on different ZnS-base phosphor.	Hsiung-Chun Hung, Ming-Chung Liu, et al.
0974	211	Correlation of TiO ₂ Aggregation Morphology with NIR Reflection Behavior of the Nanoparticle-modified PET Fiber	Yung-Pin Huang, Fen-Mei Chang, Chin-Heng Tien
0989	293	Kinetics and Morphology of Nano-Alumina Particles Filled Poly(ether ether ketone) under Isothermal Crystallization	Mu-Cheng Kuo, Yu-Fong Lin, et al.
0990	294	Morphology and Isothermal Crystallization Kinetics of PET/PETG/Clay Nanocomposites	Mu-Cheng Kuo, Yu-Fong Lin, et al.
1013	212	Interfacial polymerization onto ionic nano-fiber for low pressure operation of water filter	Kuei-Chien Chang, Shan-Shan Lin, and Shu-Hui Cheng
1031	213	The study of rejection performances of soften water by nanofibrous support	Nai-Jung Chen, Kuei-Chien Chang, et al.
1042	214	In-Situ Cr ₇ C ₃ Reinforced Fe-Based Composite Coating Produced by Laser Cladding	Wenge Li*, Qianlin Wu, Ning Zhong

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Symposium D4: Composite Materials 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
1043	215	Study on laser-clad VC-Cr ₇ C ₃ Cermet Coating on steel substrate	Qianlin Wu*, Wenge Li, Ning Zhong
1048	216	Fiber separation membranes used in lithium battery Feasibility Study	Jung-Ching Hsing, Shu-Hui Cheng, et al.
1060	217	Flame retardant and mechanical properties of fiber reinforced nanocomposites based on unsaturated polyester	Chang-Lun Lee, Chih-Sheng Cheng, et al.
1069	295	Characterization of Sol-Gel-based Hybrid Silica/Heteroarylthiazole Dyes on Polyamide Fabrics	Ming-Shien Yen*, Cheng-Wei Yeh, et al.
1081	218	Application of Taguchi method, neural networks and genetic algorithms on impact resistance analysis of ceramic composite material	Y. L. Chen, F.Y. Chang, et al.
1082	219	Effect of Resin on Impact Behavior of Ceramic/Aluminum Dual Layer Plate	Y. L. Chen, C.Y. Huang, et al.
1083	220	Impact Resistance Analysis of High-Strength Fabrics Subjected to Different Shapes Projectile	Y. L. Chen, W.H. Chiang, et al.
1087	221	A study of polyborosiloxane/epoxy hybrids	Yu-Jhe Shen, Yeng-Fong Shih, Chi-Fa Hsieh
1111	222	Dispersion of Multi-Walled Carbon Nanotubes by Dispersant with Carbon Affinity Group and Its Application in CNT/Polyethylene composites	An-En Hsiao, Shu-Ya Tsai, et al.
1121	223	Effect of Operation Conditions on HPLC-SEC Nanoparticle Classification	Kuo-Tong Lee, Yu-Han Lee
1123	224	Preparation of Aluminosilicates Nanoparticle by Polyacrylamide gel method	Kuo-Tong Lee, Li-Cyuan Lin
1141	225	A Correlation between Microstructure and NO Gas Sensing Properties in Zinc Oxide-Carbon Nanotube Composites	Ok-Kil Kim, Nguyen Le Hung, et al.
1158	226	Carbonization rate and impregnating methods on the tribological behavior of carbon/carbon composites	Kuo-Jung Lee, Chun-Hung Wu, et al.
1160	227	Effect of Si/Na on the LAS geopolymers	Kuo-Tong Lee, Yan-Lin Peng
1197	270	Thermal properties of diamond/Ag-Zr composites fabricated by vacuum sintering	Jheng-Syu Wang, Mu-Tse Lee, and Su-Jien Lin
1199	228	Fabrication and Mechanical Properties of Nb-Ni-Al Ternary Intermetallic Particle-reinforced Al Matrix Composite	Kua-Hao Hsu, Hsin-Ming Wu, Bing-Yih Lin
1209	229	Preparation and characterization of the core-shell SiO ₂ /Ni-Zn-Cu ferrite composites	Tsai-Jung Lin, Pei-Ya Wang, et al.
1220	271	Effect of Ti addition on Thermal Properties of Diamond/Ag Composites Fabricated by Vacuum Sintering	Shih-Jing Yen, Mu-Tse Lee, Su-Jien Lin
1234	230	Thermal Properties of High Thermal Conductive Diamond/Al Composites	Cheng-Chou Wong, Chih-Jong Chang, et al.
1241	231	Effect of rice husk on the thermal conductivity of clay-based ceramic materials	Ven-Gen Lee, Chih-Hao Cheng
1248	232	Development and characterization of a translucent clay-based ceramic materials	Ven-Gen Lee, Chong-Jie Dai

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Symposium D4: Composite Materials 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
1254	233	Study on the N-type thermoelectric material Bi ₂ Te _{2.7} Se _{0.3}	Jin-Jia Ye, Jyun-Min Lin and Ying-Chung Chen
1263	234	The influence of Carbon aerogel on Epoxy / carbon fiber Composite	Ming-Yuan Shen, Hsiu-Chi Su, et al.
1328	235	Microstructure and EIS behavior of Si ₃ N ₄ -TiC and Si ₃ N ₄ -TiN Nanocomposite Ceramics by Spark Plasma Sintering	Po Jui Su, Ching Huan Lee, et al.
1334	236	Preparation and characterization of Electrospun TiO ₂ Nanofibers	C.M. Wu ¹ , L.C. Chang, et al.
1338	296	Relation between composition of Al ₂ O ₃ and phase formation in CaO-ZrO ₂ -Al ₂ O ₃ composites	Yi-En Su, Chien- Cheng Lin, et al.
1344	237	Study of A Co-cured Twin-Blades Composite Propeller	Kuo-Wei, Tseng-Chung Ko, Huai- Lung Ma
1373	238	The Development of 2D Carbon/Carbon Composite	Jin-Fu Chang, Mau-Yi Huang, et al.
1375	297	A rapid method for the preparation of nano-silica colloid by the microwave hydrothermal synthesis	Sin-Kuan Li, Yao-Na Sie
1380	239	Functional Au-SnO ₂ core-satellite heteroassemblies for gas sensing applications	Yi-Chen Chen, Hsiang-Yu Lai, Chun-Hua Chen
1387	240	The investigation of the inkjet printing technology apply to the high-resolution metallization pattern on the glass surface.	Yan-Yu Nian, Wen-Ding Chen, et al.
1407	241	Thermal ageing effect of epoxy-phenolic adhesive joints	Jen-Pin Yu*, Wei-Chung Chen, et al.
1412	242	Friction Stir Welding of SiC Particulate- reinforced Aluminum Matrix Composite	Jong-Ning Aoh, Jyun-Syong Lin, et al.
1416	268	Study of A Co-cured Twin-Blades Composite Propeller	Kuo-Wei Wu
1417	269	High Loaded Composite Square-Bar Structure	Kuo-Wei Wu
1425	243	Characterization of Sol-Gel-based Hybrid Silica/Heteroarylthiazole Dyes on Polyamide Fabrics	Ming-Shien Yen*, Cheng-Wei Yeh, et al.

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Symposium D5: Coating and Surface Protection 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0188	244	The Role of Si in Microstructure and Mechanical Properties of Magnetron Sputtered CrAlSiN Thin Films	Yu Xi Wang, Sam Zhang, Wen Siang Lew
0248	245	Rotational Multi-Facing Target Sputtering System for Superconducting Tunnel Junction with Nb-Based Multi-Layered Structure	Shinichi Morohashi, Yusuke Kawano, and Masaya Hatano
0386	298	The study of microwave plasma nitrocarburizing stainless steel	Talun Sung, Che-Wei Liu*, Yen-Chun Tu
0480	246	Permeation Properties of Single-Layer SiO _x NyCz Thin Films	Meng-Chien Lu, I-Chun Cheng, et al.
0547	247	A study of DLC coatings on NAK80 prepared by cathodic arc evaporation	Lee-Long Han*, Yih-Shiun Shih, and Chun-Ming Lin
0562	299	The corrosion behavior of AlN/Al dual films deposited on Magnesium-Lithium alloy by R.F. magnetron sputtering	M. C. Lin, P.C. Wang, et al.
0601	248	Preparation and characterization of plasma electrolytic oxidation coatings formed on Mg–Li alloy	Yi Yuan, Chunxiang Ma, et al.
0602	249	Preparation and characterization of duplex PEO/MoC coatings on Mg–Li alloy	Xiaoyan Jing, Yi Yuan, et al.
0626	250	Low refractive index layer for optical application	Yu-Yang Su
0654	251	PULSE PLATING IN MICRO-SIZED SN-BI ALLOY SYSTEMS	Yi-Da Tsai, and Chi-Chang Hu
0729	252	Effects of dc bias on the microstructure, residual stress and hardness properties of TiVCrZrTaN films by reactive RF magnetron sputtering	Chao-Te Lee, Wen-Hao Cho, et al.
0748	253	Influences of N ₂ pressure on properties of (Ti,Al)N coatings synthesized by cathodic arc evaporation	Cheng-Feng Huang*, Chih-Hao Liang, et al.
0860	300	MgO films deposited by RF magnetron sputtering with magnesium target at low temperature	Hao-Yu Qiu, Ming-Chung Liu, et al.
0943	254	effect of boric acid on electrodeposition of trivalent chromium layers	Tungyu Lin, Chichang Hu
0944	255	High Flux Ultrafiltration Membranes Based on Non-woven PET Substrate and PES Coating	Kun-Tsung Lu, Wen-Yueh Hsu, et al.
1061	272	The influence of electrolytic concentration on the peoperties of ceramic coating on 7075-T6 Al alloy by micro-arc oxidation	Tzu-Jiun Lu, Mu-Rong Yang
1115	256	Structures and Properties of (TiAlSi)N Films	Jhewn-Kuang Chen, Chi-Lung Chang, et al.
1171	257	Study of In-situ synthesis TiCp/Ti Composite Coating on alloy Ti6Al4V by TIG cladding	Rongjuan Yang,Zongde Liu,Guang Yang
1172	258	Study of the Ti-20 wt.% Mo composite coating prepared by Laser Cladding	Rongjuan Yang, Zongde Liu, and Guang Yang
1182	259	Effects of Boron and Nitrogen Contents on the Microstructures and Mechanical Properties of Cr-B-N Nanocomposite Thin Films	Jyh-Wei Lee, Cheng Chih-Hong, et al.
1193	260	Study on Nitride Films Deposited from Al _{29.1} Cr _{30.8} Nb _{11.2} Si _{7.7} Ti _{21.2} High-Entropy Alloy by Reactive DC Sputtering	Ming-Hsiao Hsieh, and Jien-Wei Yeh

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Symposium D5: Coating and Surface Protection 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
1195	301	Effects of CH ₄ flow ratio on the structure and properties of reactively sputtered (CrNbSiTiZr)C _x coatings	Chih-Wei Huang, Keng-Hao Cheng, et al.
1207	302	Effects of nitrogen flow rate and substrate bias on the structure and properties of (AlCrSi _{0.3} TiZr)N _x coatings	Hsin-Yi Chang, Jien-Wei Yeh
1219	261	Laminated Structure in the Internally Oxidized Ru-Ta Coatings	Yung-I Chen, Sin-Min Chen
1262	262	Characterization and corrosion resistance of BaTiO ₃ films on Ti underlayers synthesized by plasma electrolytic oxidation	Jhu-Ling Zeng, Huan-Ping Teng, and Fu-Hsing Lu*
1296	263	Prepared pH sensor electrode used titanium bars electrodeposited with polypyrrole films	Po-Chieh Chen, Shih-Wei Chu, et al.
1312	264	Modification of epoxy coating using hydrophilic acrylic resins	Chi-shen Tuan, Jen-yu Chen, et al.
1403	265	Electrochemical etching of patterned Al-doped ZnO film in oxalic acid solution	Y. F. Chang, C. A. Tseng, J. C. Lin

Paper ID	Board #	Title of the poster	Authors
Symposium E1: Oxide /nitride for electronic applications 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0027	31	Optical and Electrical Properties of Undoped and Ga doped ZnO Films Grown on r-plane Sapphire Substrates by Atmospheric-pressure CVD	Tomoaki Terasako, Keisuke Taira, et al.
0100	32	The optical and electric characteristic of the GZO thin film deposited by sol-gel spin coating for application as the antireflective coating in photovoltaics	Bo-Yuan Su, Jia-Ling Wu, et al.
0234	194	Highly Transparent TiO ₂ Nanowire Array Electrodes and Its Electrochromic Properties	Jing-Zhi Chen, Kuan-Jiuh Lin
0268	33	Simulation of Temperature Distribution for the box-type electric furnace using USB transducers	S. Zhangdan, N. Kambe, et al.
0296	34	Spectral drift due to water adsorption on TiO ₂ film	Hiroki Sugimoto, Hiroshi Murotani
0297	35	Influence on light scattering of structures of TiO ₂ optical thin films depending on substrate roughness.	K. Takahashi, H. Murotani, et al.
0298	36	Analysis of light scattering characteristics and film structure of TiO ₂ thin film	D.Yokoyama, H.Murotani, F.Sawamura
0311	37	Evaluating changes in the surface state of optical glass in environmental testing	T. Nakayama, H. Murotani*, and F. Sawamura
0312	38	Changes in the structure of CeO ₂ optical thin films by humidity	Fumiya Sawamura, Hiroshi Murotani, Takashi Nakayama

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Symposium E1: Oxide /nitride for electronic applications 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0376	39	Fabrication of P-type Transparent CuZnGaO ₂ films by Sol-gel Method	Afishah Alias, Masato Sakamoto, Katsuhiro Uesugi
0434	195	Growth and characterization of In _x Al _{1-x} N films grown on Si(100) substrate	Wei-Chun Chen*, Yue-Han Wu and Li Chang
0452	40	Developmental Mechanism for the Memory Effect in Perovskite Oxide-Based ReRAM Consisting of Bi ₂ Sr ₂ CaCu ₂ O _{8+δ} Bulk Single Crystal	A. Hanada, K. Kinoshita, et al.
0476	41	Characterization of Laser Annealed Cu-Al-O:Ca Thin Films	Chang-Yi Tsai, I-Chun Cheng, Jian Z. Chen
0478	42	The effect of annealing temperature on the size and density of core-shell IrO _x -based nanocrystals of a nonvolatile memory device	W. C. Li, T. Y. Wang, et al.
0604	43	Preparation of P-type ZnO Films by Alternate Deposition of Mg ₃ N ₂	K. Kobayashi, T. Koyama, et al.
0645	44	Photoluminescence from Cu-Ga-O Films Grown by Atmospheric-pressure CVD Using CuCl, GaCl ₃ and H ₂ O as Source Materials	Tomoaki Terasako, Yoshinori Ogura, et al.
0690	45	Effects of working pressure on the electrical properties and microstructures of Ga-doped ZnO thin films by radio frequency magnetron sputtering	Sheng-Chau Chen, Wei-Lin Wang, Chih-Chao Yang
0726	46	Synthesis of SrAlSiN ₃ :Eu ²⁺ red phosphor by ammonothermal method	K. Nonaka, J. W. Li, et al.
0747	47	Room-temperature deposition of transparent conducting Al-doped ZnO films prepared by RF magnetron sputtering	S. H. Wang, Y. H. Chou, C. C. Yang
0752	48	Thermoelectric properties of Zn _{1-(x+y)} Ga _x In _y O (x + y = 0.007) system	H. Takemoto, M. Saito, H. Yamamura
0770	49	Synthesis of LiMO ₂ (M = Co, Fe) by flux method	K. Mineo, T. Watanabe
0808	50	Comparative study between N ₂ -doped tin oxide by sputtering of Sn and sputtering of SnO ₂	Youngrae Kim, Joon-Hyuk Jang, et al.
1018	51	Microscopic Simulation of Forming Process in RRAM Devices	Hsin-Wei Liao, Jon-Yiew Gan
1027	52	Application of Enhanced Field Emission of Al-doped ZnO Nanorods and Nanotips via Hydrothermal method	Chi-En Yang, Chuan-Ping Juan, et al.
1108	53	Impact of seed layer of unilamellar nanosheets on moisture resistance of transparent conductive Ga-doped ZnO films deposited on glass substrates	Hisao Makino, Tatsuo Shibata, et al.
1110	54	Growth and characterization of pure and doped SnO ₂ films for H ₂ gas detection	Chang-Hung Lin, Wei-Che Chang, Xiaoding Qi
1124	55	Shape evolution of conductive nanofilament caused by Rayleigh instability	Yu Hua Fu, Jon Yiew Gan
1190	56	The Study of Properties of VO ₂ Thin film with Nano Silver by Sol-gel Technique	Hsiang-Yu Lei, Shau-En Yeh, Hu Yi
1232	57	Nonlinear Electrical Properties of Thin Films of a Light-Emitting Perovskite-Type Oxide Pr _{0.002} (Ca _{0.6} Sr _{0.4}) _{0.997} TiO ₃	Keiichi IKEGAMI, LU Ming, et al.

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Symposium E1: Oxide /nitride for electronic applications 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
1246	58	Effect of trivalent elements on electrical property of SnO ₂ thin films	Chang Hoon Sung, Shalendra Kumar, et al.
1247	59	Microwave hydrothermal assisted growth of ZnO nanorods arrays on glass substrate	Si Nae Heo, Faheem Ahmed, et al.
1294	60	Preparation of titania nanotube by potentiostatic anodizing process and applied to the pH sensor	Po-Chieh Chen, Shih-Wei Chu, et al.
1305	61	Preparation of Zn ₃ N ₂ transparent transistor thin films by reactive DC sputtering	Min Yen Yeh, Shu Shan Shie, R. B. Chen
1323	62	The fabrication of ZnO seed layer by aqueous spraying	Chien-Sheng Huang, Tsung-Ying Yang, et al.
1330	63	Characterization of dendritic nano-Cu ₂ O films prepared by electro-deposition methods	Leo Chau-Kuang Liao *, Yong-Jie Peng, et al.
1361	64	Room-temperature photoluminescence for Si nanocrystals embedded in Si-rich oxide by ion-beam assisted sputtering	Chu-Yun Hsiao, Kuan-Wei Su, and Chuan-Feng Shih
1371	65	Effect of H ₂ O ₂ concentrations on microstructural and optical properties of 2 at.% Sn ⁴⁺ doped ZnO nanorods deposited by electrochemical method	M.C. Huang, S.Y. Huang, et al.
1391	66	Ambient-controlled growth of Ga ₂ O ₃ - and In ₂ O ₃ -based (Ga,In) ₂ O ₃ nanowires	Ming-Hung Chiang, Cheng-Ying Ho, et al.
1406	67	Properties of Epitaxial Spinel Thin Films on GaN Substrates	Sheng-Wen Fu, Jhih-Cheng Wu, et al.
1436	68	Structural and Optical Properties of Electron Irradiated ZnO and ZnO:Al Films	S. M. Dharmaprakash, H. H. Shetty, et al.

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Symposium E2: Ferroelectric, Piezoelectric, and Dielectric Materials 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0588	187	Control of Grain Characteristics in Sol-gel derived double doped Barium Titanate Based Electroceramics	Ch. Sameera Devi, G S Kumar, G Prasad
0613	196	Synthesis and Properties of Ti-doping Bi ₂ VO _{5.5} Films by Chemical Solution Method	Ming Guo, Changxin Liu, et al.
0660	69	Synthesis, Structure and Properties of (4,8)-Connected 3-D Porous Metal–Organic Coordination Networks	Cheng-Hua Lee, Sheng-Ming Huang, et al.
0966	70	Electrical properties of Bi _{3.25} Nd _{0.75} Ti ₃ O ₁₂ ferroelectric thin films deposited on SRO/STO/Si substrates	Hsiu-Yu Chou, En-Ko Lee
1015	71	The Growth, Structure and Magnetic and Dielectric Properties of Ba ₆ Fe _{0.90} Nb _{9.10} O ₃₀ and K ₄ Fe _{1.56} Nb _{6.44} O _{21.4} Single Crystals	Jean-Kuo Tai, You-Yun Li, Xiaoding Qi
1016	72	Effects of Nickel Substitution on Bismuth Ferrite	Ying-Hao Wang and Xiaoding Qi

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Symposium E2: Ferroelectric, Piezoelectric, and Dielectric Materials 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
1026	188	The long range order of $\text{Pb}_{0.95}\text{La}_{0.05}(\text{Fe}_{2/3}\text{W}_{1/3})_{0.65}\text{Ti}_{0.35}\text{O}_3$ ceramics is enhanced by synthesized condition	Cheng-Shong Hong, Sheng-Yuan Chu, and Chi-Cheng Hsu
1040	73	A Piezoelectric Anomaly at The Phase Transition in Highly Distorted BiFeO_3 Thin Films	Heng-Jui Liu, Chen-Wei Liang, et al.
1052	74	Pure Oxygen Atmosphere Sintering Behavior and Microwave Dielectric Properties Of $x(\text{Mg}_{0.96}\text{Co}_{0.04})\text{TiO}_3 - (1-x)\text{SrTiO}_3$ Ceramics	Kok-Wan Tay, Wei-Fan Wu
1064	75	The Study of BaTiO_3 Sintered by Microwave Furnace	Yu-Tang Tsai, Fu-Thang Shiao, et al.
1080	76	Highly sensitive UV sensors based on SMR oscillators	Ching-Liang Wei, Ying-Chung Chen, et al.
1094	197	Microwave Dielectric Properties and microstructure of $x(\text{Mg}_{0.7}\text{Zn}_{0.3})_{0.95}\text{Co}_{0.05}\text{TiO}_3-(1-x)\text{Ca}_{0.8}\text{Sr}_{0.2}\text{TiO}_3$ Ceramics at microwave frequency	Cheng-Liang Huang, Yuan-Bin Chen, et al.
1112	77	Local Piezoelectric Characterization of Alkali Niobate 1-Dimensional Nanostructures Examined by Piezoresponse Force Microscope	Ching-Hsaing Chang, Min-Han Yang, et al.
1129	198	The Sb doping Effects on the piezoelectric and Ferroelectric Characteristic of Lead-free $\text{Na}_{0.5}\text{K}_{0.5}\text{Nb}_{1-x}\text{Sb}_x\text{O}_3$ Piezoelectric Ceramics	I-Hao Chan, Mau-Phon Houng, Sheng-Yuan Chu
1181	78	Ce-doped BiFeO_3 and $\text{BiFeO}_3/\text{Bi}_{1-x}\text{Ce}_x\text{FeO}_3$ multilayer ferroelectric films	Hsiao-Feng Hsiao, Ching-Chieh Leu, Chen-Ti Hu
1244	199	Microwave dielectric and microstructure of $x(\text{Mg}_{0.7}\text{Zn}_{0.3})_{0.95}\text{Co}_{0.05}\text{TiO}_3-(1-x)(\text{La}_{0.5}\text{Na}_{0.5})\text{TiO}_3$ Ceramics	Yuan-Bin Chen, Sih-Yin Wang
1272	79	Low-Loss Microwave Dielectrics in the $\text{Li}_3(\text{Mg}_{1-x}\text{Zn}_x)_2\text{NbO}_6$ Ceramics	Cheng-Liang Huang, Yi-Da He, Wen-Ruei Yang
1277	80	A New Novel Microwave dielectric material $\text{Li}_2\text{ZnZrO}_4$ for Microwave Applications	Cheng-Liang Huang, Chia-Hui Su and Yu-Wei Tseng
1279	81	Dielectric Properties of Different Doped $0.76\text{Li}_2\text{TiO}_3-0.24\text{MgO}$ Ceramics for Microwave Applications	Cheng-Liang Huang, Yu-Wei Tseng, et al.
1283	82	Effect of ZnO addition to $\text{Nd}(\text{Zn}_{1/2}\text{Ti}_{1/2})\text{O}_3$ ceramics on sintering behavior and microwave dielectric properties	Wen-Ruei Yang, Cheng-Liang Huang, et al.
1291	189	Synthesis of Barium Titanate Nanorods from Potassium Titanate Nanowires Precursors	Jun-Hao Su, Nai-Hao Yang, and Su-Jien Lin
1306	83	Preparation of ZnO surface acoustic wave materials by electrodeposition	Min Yen Yeh, Yu Shan Chang, Chih Yu Lee
1353	84	Fabrication of Potassium Sodium Niobate Nanowires by Eletrospinning under Different PVA Concentrations	Carlos Li* , Harry Wang, et al.
1437	85	L alanine Doped Triglycine sulphate Crystals for Pyroelectric Detector Applications	Sampyady M. Dharmaprakash, H. H. Shetty, et al.

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Symposium E3: Optoelectronic /Photonic Related Materials 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0077	200	ZnSe-based nanowire photodetector prepared on oxidized silicon substrate by MBE	Shang-Chao Hung, Chih-Hung Hsiao, et al.
0102	86	Spectral Characterization of High Efficient Electrodeless Discharge Lamps	Jen-Hung Hsu*, Hong-Jen Lai, Kung-Jen Ma
0131	87	High Temperature Glancing Angle Deposition of Ga on Ordered Au Nanoparticles Array	H. Minamitake, M. Suzuki, et al.
0167	88	Formation of Ge ⁺ SiC nanodots / SiC stacked structure	T. Otani, S. Asano, T. Kato, K. Yasui
0181	89	Synthesis of CuInSe ₂ /ZnSe and ZnSe/CuInSe ₂ Core/Shell Quantum Dots and Their Luminescence Property	Takahisa Omata, Katsuhiro Nose, et al.
0184	90	Fabrication of Quantum Dot Films of ZnO from Colloidal Solution	Akira Miyanaga, Takahisa Omata, et al.
0186	91	Fabrication of ZnF ₂ Thin Films and Their Transparency in Vacuum Ultraviolet	Issei Suzuki, Takahisa Omata, et al.
0199	201	Synthesis and Self-assembly of Poly(3-hexylthiophene)-b-Poly(3-thiophene hexylacetate) All-Conjugated Block Copolymers	Yu-Cheng Liu, Chun-Chin Ho, and Wei-Fang Su
0203	92	Spontaneous Growth of One-Dimensional Oxide Nanostructures in Ambient Atmosphere at Room Temperature	Nai-Hao Yang, Chien-Yen Liu, et al.
0371	93	Improving the luminescence efficiency of Li ₂ TiO ₃ :Mn ⁴⁺ red emitting phosphor for white LEDs	K. Seki, K. Uematsu, et al.
0488	94	Melt-Quench synthesis using arc imaging furnace for phosphor materials, (BaCa) ₂ SiO ₄ :Eu	T. Ishigaki, K. Toda, et al.
0514	95	Nanowire arrays with controlled structure profiles for maximizing optical collection efficiency	Hung-Chih Chang, Kun-Yu Lai, et al.
0516	190	ZnO/Al ₂ O ₃ Core-Shell Nanorod Arrays: Processing, Structural Characterization, and Luminescent Property	C. Y. Chen, C. A. Lin, et al.
0518	96	Fabrication of periodic Si nanowires for light harvesting	Hsin-Ping Wang, Kun-Tong Tsai, et al.
0538	202	Light Scattering by Nanostructured Antireflection Coatings	Yen-Chun Chao, Cheng-Ying Chun, et al.
0560	97	Structure and optoelectronic properties of CuZnSnAlNb _x oxide coating by magnetron co-sputtering system	De-Ru Jung, Du-Cheng Tsai, et al.
0584	98	Luminescent properties of a rare earth free long persistent phosphor Li ₂ ZnGeO ₄ :Mn ²⁺	Hiroyuki Shimizu, Kazuyoshi Uematsu, et al.
0620	99	Vacuum Ultraviolet Light Emitting Device using a KMgF ₃ Thin Film Phosphor	Mirai Ieda, Tatsuya Ishimaru, et al.
0621	100	Filterless Vacuum Ultraviolet Photoconductive Detector using NdF ₃ Thin Film	Tatsuya Ishimaru, Mirai Ieda, et al.
0661	101	Effect of BaF ₂ on luminescent properties of Sr ₂ SiO ₄ :Eu ²⁺ for LED lighting	WooChul Jeong, ChangHae Kim
0685	203	Si Photodetectors with ZnO Nanowires	Chin-An Lin, Wei-Cheng Lien, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium E3: Optoelectronic /Photonic Related Materials 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0717	204	LED Tuning of the Reflection of Cholesterics Doped with Azobenzene Liquid Crystals	Chung-Yi Liu, Chia-Chi Cheng, et al.
0735	205	All optical Switches of Cholesterics Doped with Azobenzene Liquid Crystals	Chia-Chi Cheng, Chung-Yi Liu, et al.
0853	102	Fabrication of microlens arrays using diffuser lithography	Yong-Shan Sun, Jie-Ming Kang, et al.
0933	103	A non-destructive optical diagnostic technique for rapid measuring the recrystallization result of polycrystalline silicone thin films	Chih-Chyuan Kuo, Chin-Sheng Chao, Yong-Qi Zou
1006	104	Effect of deoposition temperature and ambient gases on te characteristics of Zr-doped zinc oxide (ZZO) thin films	Hyun-hong Cho, Dae-guen Jun, et al.
1017	105	Preparation and Spectroscopic property of $\text{SrWO}_4 : \text{RE} \cdot \text{R} (\text{RE}=\text{Pr} \cdot \text{Dy} \cdot \text{R}=\text{Na} \cdot \text{K} \cdot \text{Nb})$ by Solid-State Reaction	Chih-Jie Lan, Yi-Ru Li, and Xiaoding Qi*
1041	106	MgZnO nanorods homojunction photosensor for solar-blind spectrum range detection	Cheng-Zhi Wu, Liang-Wen Ji, et al.
1056	107	Luminescence Properties of Yellow-emitting $\text{Ca}_{10}\text{Na}(\text{PO}_4)_7:\text{Eu}^{2+}$ Phosphors for White LEDs	Jen-Ching Tsai, Wei-Ren Liu, et al.
1057	108	The effects of fluoride salt on the synthesis of YAG:Ce powder	Wen-Yao Yang*, Kuang-Yuan Chen, Ming-Shyong Tsai
1074	109	Site-selective Synthesis of Periodic Silicon Nanowires Arrays on Patterned Silicon Substrates	C. F. Chuang, C. H. Lo, and S. L. Cheng*
1128	206	The Improvement of the Extraction Efficiency in Organic Light Emitting Diodes via Surface-Modification	Chieh-Tze Sun, I-Hao Chan, Sheng-Yuan Chu
1134	207	Low vacuum, room temperature plasma-enhanced pulsed laser deposition (PEPLD) of zinc oxide thin films	Yu Chueh Chou, Vincent K.S. Hsiao
1149	110	Characterization of TiO_2 based transparent conductive electrode	Chu Chun Wu, Pang Shiu Chen ¹ , et al.
1155	111	Optimized Gold-in- Ga_2O_3 Heterostructure Nanowires via Statistics	Chia-Wei Hsu, Kai-Yuan Cheng, Li-Jen Chou
1156	112	Low vacuum, room temperature plasma-enhanced pulsed laser deposition (PEPLD) of zinc oxide thin films	Yu Chueh Chou, Vincent K.S. Hsiao
1157	208	Study of resistive switching behaviors for Mn doped ZnO nanorods	Den-Kai Hsu and Li-Jen Chou
1161	209	Synthesis of P-doped ZnO nanowires	Chiang Lin and Li-Jen Chou
1200	113	The investigation for Properties of Aluminium oxide Films prepared by Magentron Sputtering	Ching Chen ,Chao Feng Hsu ,Su-Shia Lin
1206	114	Effect of Deposition Temperatures on the Morphology Evolution of ZnO Films by Atmospheric Pressure Plasma Method	Chung-Yuan Juan, Yu-Rune Wu, et al.
1214	115	Luminescence Properties of Eu-doped SnO_2 Prepared by Vacuum Deposition	Inyangat Akudo Regina, Toshihiro Tanaka, et al.
1242	116	Mist-CVD-grown ZnO films with buffer layers on sapphire substrates	Masaru Shiraishi, Masanori Goto, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium E3: Optoelectronic /Photonic Related Materials 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
1255	117	The Effects of Steric Hindrances and Surfactants Ratios on the Optical Properties of CdSe Quantum Dots	Zong-Han Chen, Shu-Ru Chung, and Kuan-Wen Wang
1258	118	Effect of Ag and ZnO thickness on the structural and optical properties of ZnO/Ag/ZnO stacked layer	Yu Wei Chang, Chu Chun Wu, et al.
1289	119	Study on Xe Excimer Fluorescent Lamps and Their Bactericidal Effect	Ming-Kai Hsu*, Bee-Yu Wei, et al.
1307	120	Synthetic mechanisms of single crystalline FeS ₂ pyrite nanocrystals via a low cost route	Su-Ching Hsiao, Chih-Ming Hsu, et al.
1325	121	A novel phosphor coating composition for Xe excimer UV fluorescent lamp	Yu-Ying Hsu, Kuo-Tung Huang, and Bee-Yu Wei
1326	210	Energy Transfer of Ca ₄ Y(BO ₃) ₃ O:Ce ³⁺ , Mn ²⁺ Phosphors	Suzi-Pin Li, Wei-Ren Liu, Teng-Ming Chen
1340	122	Effect of electropolishing pretreatment on the morphology of the anodic aluminum oxide membrane	Yen-Hsun Chen, Meng-Hong Shih, et al.
1343	123	The Effect of Heat Treatment on the Photoluminescence of Blue CaS:Tm, LiF Phosphor	Ci-Fong Do, Chih-kai Yang, et al.
1349	124	Fabrication of Photonic Crystal Templates of Tin Oxide Microspheres Via Electrophoretic Self-Assembly Method	R.F. Louh, Y.C. Tsai, et al.
1372	125	Transparent conductive Al, Ti-co-doped ZnO sputtered films and their characterization	Jian-Nan Wu, Kun-Cheng Peng, Jing-Chie Lin*
1389	126	Characterizations of ZnO Nanowires Synthesized at Different ZnO to Graphite Weight Ratios	Jia-Huei Syu, Yi-Ming Hsu, et al.
1396	211	Effect of Complex Agent on Physical Properties of CdSe Nanocrystals	Jia-Ting Yang, Hong-Hong Chen, and Shu-Ru Chung
1397	212	Quantum Dots Enhanced White Light Emitting Diodes	Ming-Wel Wang and Shu-Ru Chung
1400	127	The characteristics of high-temperature synthesized YAG:Ce nano-phosphors	Hao-Ying Lu*, Hua Wei Yang
1447	128	Bound Exciton Dynamics in CdS Nanobelts	Qihua Xiong

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Symposium E4: Organic, Molecular, and Flexible Electronics 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0498	129	The Ultraviolet Degradation in P3HT:PCBM Solar Cells	Yu-Ting Lin, Jung-Hao Chang, et al.
0537	130	Preparation and Characteristics of Reactive Blends of Fluorine-Containing Bismaleimide and Epoxy	W. J. Shu
0734	131	A novel multilayer barrier film encapsulated plastics purely prepared by inductively coupled plasma chemical vapor deposition	Li-Wen Lai, Ming-Hsien Ko, et al.
0769	132	A Stable Top-Gate OTFT by a Photo-Cured Cinnamate-Based Polymer Dielectric	G.-W. Hwang, M.-Y. Hsu, et al.
0927	133	Exciton Diffusion Dynamics in Organic Semiconductors	Chang-Wen Chen, Yu-Ting Lin, et al.
0935	213	The Synthesis and Comparison of Soluable Perylene Diimide Derivatives Semiconductors with or without Fluorine-modification	Heng-Wen Ting, Szu-Ying Chen, and Tri-Rung Yew
0965	134	Highly Efficient Quasi-solid State Flexible Dye-sensitized Solar Cells Using a Compression Method and Light-confined Effect for Preparation of TiO ₂ Photoelectrodes	Po-Ya Hsu, Hsin-Fang Lee, et al.
0991	135	Transparent PI/Silica Hybrid Substrate with High Material Property for Flexible Display and Electronics	Chyi-Ming Leu*, Yung-Lung Tseng, et al.
1113	136	Properties of patterned ITO film on plastic substrate under mechanical bending for flexible display	Ming Wei Chang*, Hsung Kai Lin, et al.
1227	137	Very high Color-Rendering-Index organic LED	Cheng-I Chiang, Chuen-Ren Lin, et al.
1261	138	Inorganic Resist Film for Submicron Structure Fabrication	J.K.Chen, J.W.Lin, et al.
1267	139	Highly Efficient Orange-Red Phosphorescent Organic LED Using a Novel Molecular Host	Ming-Chun Tang*, Shih-Ming Shen, et al.
1268	140	High Efficiency Fluorescent Yellow Organic LED with a Beyond Theoretical Limit External Quantum Efficiency	Pin-Chu Chen, Yi-Shan Wang, et al.
1274	141	Highly efficient orange-red organic LED using double emissive layer	Yao-Ching Hsieh, Po-Hsien Wu, et al.
1318	142	Physiologically-Friendly Low Color Temperature Organic LEDs with High Efficacy	Bo-Ru Chen*, Pei-Yu Hwang, et al.
1331	143	High Purity and High Stability White Organic Light Emitting Diode by Using Single Emission Layer	Szu-Chi Huang*, Po-Jen Shih, and Su-Hua Yang

Paper ID	Board #	Title of the poster	Authors
Symposium E5: Compound Semiconductor Materials 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0418	191	Surface plasmon enhanced InGaN/GaN light emitting diodes via two-dimensional silver array	Cheng-Hsueh Lu, Chia-Chun Lan, et al.
0597	144	Photoluminescence properties of BaZr _{1-x} Eu _x O ³ phosphor	Bai-Bin Wang , Wein-Duo Yang
0600	145	Photoluminescence properties of Sr _{1-x} Eu _x ZrO ₃ phosphor	Bai-Bin Wang , Wein-Duo Yang
0657	214	Preparation and characterization of nanocrystalline Ti _x Sn _{1-x} O ₂ solid solutions via a microwave-assisted hydrothermal synthesis process	Yi-Lin Yang, Chi-Chang Hu, Chi-Chung Hu
0810	146	Laser Treatment of AlN Co-doped ZnO Film for p-type ZnO Fabrication	Li-Wen Lai, Kun-Wei Lin, et al.
0814	147	Growth and Characteristics of ZnO Nanowires grown by Thermal Evaporation	Kang-Min Do, Ji-Hong Kim, et al.
0821	148	High performance amorphous InGaZnO thin film transistors fabricated at low temperature	Jae-Won Kim, Ji-Hong Kim, et al.
0877	215	Catalyst-Free Growth of ZnO Nanorods on Glass Substrate Using Chemical Vapor Deposition	Wen-Kai Shie, Hsin-Tzu Liu, et al.
0903	149	Anomalous Structural-Phase-Transition Pressure in Cd _{1-x} Fe _x S	Y. K. Chern, Tony Huang, et al.
0947	150	Synthesis of Bi-Sb-Te Thermoelectric Semiconductor Material by a Mechano-chemical Process	Gil Geun Lee, Gook Hyun Ha
1014	151	Development of a Direct ITO Recovery Method	Tzu-Chi Chou, Show-Ju Peng, and Kuo-Chuang Chiu
1035	216	Effects of annealing temperature on the structural and nanomechanical properties of Ga-doped ZnO thin films by radio frequency magnetron sputtering	T.-C. Lin, S.-R. Jian*, et al.
1050	152	Structural characterization and low temperature growth of Mg-Al codoping ZnO Nanorod	Cheng-Zhi Wu, Liang-Wen Ji, et al.
1066	153	Nano-crystalline Zn-doped CoOOH film gas sensor for carbon monoxide	Jian Wen Wang, Yi Ming Kuo
1109	154	Ultrafast dynamics of InSb studied by pump-probe spectroscopy	L. Y. Chen, S. L. Wu, et al.
1137	217	Preparation of Core/Shell ZnO/ZnS and Hollow ZnS Nanotetrapods via Chemical Conversion Routes	Chih-Jung Chen, Ray-Kuang Chiang
1187	155	CIGS Targets Synthesis for Femtosecond Pulsed Laser Deposition	Mu-Gong Tsai, Chia-Chuan Chen, et al.
1213	192	Electron field emission and electrical properties of tin-doped indium oxide nanowires	Pei-Jung Lee, Cheng-Hsiang Kuo, Su-Jien Lin
1251	156	Size-Controlled Synthesis of Size-Uniform α -MnSe Nanoparticles via a Thermal Decomposition Method	Chia-Cheng Liu, Fuh-Sheng Shieu, et al.
1280	157	Study of bismuth antimony telluride films electrodeposited from a ethylene glycol solution	Chia-Ying Yen, Wen-Jin Li, Chin-Guo Kuo
1300	158	Fabrication of ZnO-based thin film transistors using wet deposition methods	Leo Chau-Kuang Liao, Hsin-Ni Chiang, et al.
1401	159	Synthesis and characterization of nickel-cobalt oxide target	Han-Lung Liu, Chi-Yang Liu, Kuan-Zong Fung

Paper ID	Board #	Title of the poster	Authors
Symposium E6: Materials for Si/Ge Based Electronics 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0287	218	Thermal Stability Studies of Hf-based films prepared by Metal Organic Chemical Vapor Deposition	S.Y. Tan, Wei-Chih Chien
0315	219	Current-voltage Characteristics of Pd/n-Si Schottky Barrier Diode for hydrogen sensor	Xiaoyan Zhou, Zhide Han, and Wenxing Wang
0765	160	The influence of Ge content on thermal stability of NiSiGe and their contact properties with SiGe epilayer	Mengrao Tang, Wei Huang, et al.
0800	161	Influences of Pt and Ti additions on Ni/Si Reaction Systems	Y. Y. Hsu, C. J. Tsai, and S.W. Lee
0980	162	Recycling Silicon from Sawing Waste by Sedimentation in Applied Electrical and Magnetic Fields	Tzu-Hsuan Tsai, Sheng-Yang Ho
1256	163	Effects of ion-implanted N ⁺ on the phase change memory properties of Ge ₂ Sb ₂ Te ₅ films	Chi-Po Chang, Tsung-Shune Chin, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium E7: Materials for Emerging Packaging and Interconnect Technologies 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
0232	164	Evaluation of Copper Germanide Formation on SiO ₂ Substrate	Ray-Mon Wang, Jai-Lin Tsai, Chao-An Jong*
0255	165	Ion-assisted Bombardment for surface modification in Electrochemical Silver Plating Study	Chia-Wei Ho, Ren-Jei Chung, and Chao-An Jong
0349	193	Electromigration of Ultra-Fine Pitch Microbumps in 3D-IC Integration	Y. W. Chang, Chih Chen, et al.
0400	166	Mechanism of controlling Diffusion Channel Between Cu ₆ Sn ₅ Scallops in Microbumps	Han-wen Lin, Hsiang-Yao Hsiao, Chih Chen
0458	220	Effect of SnAg solder height on metallurgical reaction in microbumps for 3D IC packaging	Wei-Chi Sung, Chih Chen
0610	167	The In-situ Measurement of Thermal Stress on Stacked 3D-IC by Utilizing Synchrotron Radiation X-ray	Hsueh-Hsien Hsu, Tao-Chih Chang, et al.
0665	168	Practical application of a low temperature InSnTi solder as thermal interface material in high power LED for heat removal	Wei-Lin Wang, Yi-Chia Tsai, et al.
0787	221	Preparation and spectral analysis of Tb ³⁺ -doped glass and glass ceramics	Chuni Fu, S. W. Yung
0875	169	Bump Resistance Measurement Using Structure Combining Kelvin Probes and Daisy Chains	Y. W. Chang, Chih Chen
1120	170	Electromigration Behaviors of GeSbTe and Ce-doped and Nitrogen-doped GeSbTe Layers	Chi-Hang Hang, Yu-Jen Huang, Tsung-Eong Hsieh

Paper ID	Board #	Title of the poster	Authors
Symposium E7: Materials for Emerging Packaging and Interconnect Technologies 2011/9/21 09:00-14:00 Main activity: 13:00-13:40			
1384	171	Electrical effect on the microstructure and tensile properties of SAC305 solder	T. W. Chiu, G. A. Lan, et al.
1386	172	The microstructure and tensile property of Sn9Zn/Cu joints in multi-reflow	Y. D. Hsiao, L. T. Chen, et al.
1388	173	Low Temperature Cu-Sn Wafer-Level Bonding by Chip-To-Wafer and Surface oxidation Removing Technology	Chung-Yi Hsu, Jean Ho
1434	174	Effect of Current Density in Flip Chip Sn _{2.6} Ag Solder Joints	W. J. Deng, K. L. Lin, et al.
1435	175	Development and properties of Zn-Sn based Pb-free solder alloys (Zn-Sn-Ga-Al) for high temperature application	Wan-Yi Lin, Kwang-Lung Lin
1440	176	The Effect of Electromigration on the Interfacial Reaction between Sn-Ag-Cu-Ni-In Alloy and Ni Substrate	C. Y. Lin, K. L. Lin

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Symposium F1: Advanced Magnetic and Superconducting Materials 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0026	1	Magnetic Properties of Fe ₃ O ₄ nanoparticles/(Ho _x In _{1-x}) _{1.95} Sn _{0.05} O ₃ Composites	S. Kohiki, T. Manabe, et al.
0082	2	Reduced intrinsic switching field distribution of CoPtCr-SiO ₂ recording media grown on MnRu intermediate layer	Jung-Wei Liao, Hao-Cheng Hou, et al.
0089	3	Reduction of L10 FePt ordering temperature by decomposition of meta-stable AgPt alloy	Chih-Huang Lai*, Wei-Chih Wen
0147	120	Magnetic properties of oxygen-doping Fe-Co-based nanocrystalline alloy films for high frequency application	Hao Geng, Yuan Wang, Laisen Wang, et al.
0286	4	Independent orientation control of single phase in self-assemble perovskite-spinel nanostructure	Sheng-Chieh Liao, Pei-Yu Tsai, et al.
0291	5	Ic improvement of Bi-2212 single crystal by doping rare earth oxides	K. NAGASHIMA, M. TAKETANI, et al.
0292	6	Improvement of Jc in Partial-Melted Sm-Ba-Cu-O Bulk Superconductor	Hiroya IMAO
0320	7	Magnetic properties of (Nd,Dy)FeB sintered magnets by low temperature sintering process	J.W. Kim, S. H. Kim, et al.
0351	8	Fabrication of L10 FePt dot array with high perpendicular anisotropy	Ju-Cheng Hsiao, Yen-Chun Huang, et al.
0356	9	Critical current density and magnetic properties of partial melted superconductor	K. ADACHI, T. TAKAHASHI, H. IMAO
0451	10	Micro-Fabrication Method of Josephson Junctions without Etching Process	A. Hanada, K. Kinoshita, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium F1: Advanced Magnetic and Superconducting Materials 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0485	126	Syntheses, Magnetic and ESR Properties of crystallized γ' -Fe ₄ N and ϵ -Fe ₃ N particles	Y. T. Sie, H. C. Chen, et al.
0579	11	The Loss Characteristic of The high-frequency Magnetic Material	KuoFeng Chen, Tai-Chang Chen, et al.
0829	127	Magnetic Properties and Electron Paramagnetic Resonance of (Y _{3-x-y} Gd _x Ca _y)(Fe _{5-y} Sn _y)O ₁₂ Garnets for High Temperature-stability Microwave Applications	T. C. Wu , Y.T. Sie, et al.
1010	12	The structural and magnetic properties of NiCuZn ferrite	Chih-Wen Chen, Wen-Song Ko , Mean-Jue Tung
1049	13	YBa ₂ Cu ₃ O ₇ thin film prepared by femtosecond pulsed laser deposition	C. H. Su, L. W. Liao*, et al.
1088	14	Ferromagnetic Behaviors of Nano-Metric BaTiO ₃ with Vacancies	M. Ishii, D. Ohta, et al.
1130	15	The Study of Thermal Treatment and Thermal Cycling of Ferrite Device	S. F. Chien, W. S. Lee
1154	16	Microwave absorbing materials of Cl/ZrO ₂ core-shell nanopowders prepared via sol-gel method	Wen-Chun Huang, Cheng-Hsiung Peng*, et al.
1191	17	Effect of Annealing Temperature on Microstructures and Magnetic Properties for Ferromagnetic Shape Memory Fe-Pd Alloys	Ching-Wei Hsu, Tin-San Ng, and Jui-Chao Kuo
1202	18	The study of the microstructure and magnetic properties in L10 [Fe/Pd] multilayer system	T. T. Su, C. H. Hsiao, et al.
1252	19	Thermal Decomposition Tests to Differentiate Hexagonal Close-Packed (hcp) Ni Nanoparticles from Ni ₃ C Nanoparticles	Ray-Tung Chiang, Ray-Kuang Chiang, Fuh-Sheng Shieu
1269	20	Effect of Ni-substitutions on microwave absorption properties in MnZn ferrite	S. Y. Tong, J. M. Wu, et al.
1365	21	Giant magnetoimpedance in La _{0.7} Sr _{0.3} MnO ₃ manganite prepared by sol-gel method	Hsiao-Wen Yu
1368	22	Magnetoimpedance Effect in K-doped La _{0.7} Sr _{0.3} MnO ₃ under low magnetic fields	Hsiao-Wen Yu

Paper ID	Board #	Title of the poster	Authors
Symposium F2: Smart Materials 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0205	23	Properties and Structure of Different Polar Molecule Urea Content of TiO ₂ /Urea ER Fluid	Suokui TAN , Xiaoping SONG , et al.
0399	24	Multicolored Electrochromic NiO/PANI thin films	H. P. Deshmukh, A. C. Sonavane, et al.
0402	25	Chemical Synthesis of Nanoporous Electrochromic NiO	P. M. Kadam, D. S. Dalavi, et. al.
0567	128	Investigation on Fe ₇₀ Pd _{30-x} Au _x Ferromagnetic Shape Memory Alloys	Yuan-Hung Lo, Chun-Yen Yu, Chen-Ti Hu
0596	26	The strain variation associated with martensitic transformation of shape memory alloys tested by dynamic mechanical analysis	S.H. Chang, S.K. Wu
0945	27	Multifunctional Core@Shell Plasmonic Nanoparticles for LSPR-Based sensing and Electrocatalysis	Ji-Eun Lee, Kyungwha Chung, et al.
0953	28	The thermal and pH sensitive properties of PVA Contains Poly(MAA-co-NIPAAm) Microspheres	Kuo Feng Chou, Shu Yan Huang, et al.
1096	29	Physical Properties and Kinetic of Alkaline Hydrolysis of CDPET and PEG-modified-CDPET Polymers	Kai-Jen Hsiao, Jong-Pyng Chen, et al.
1180	30	Investigation on Bulk Fe ₇₀ Pd _(30-x) Au _x Ferromagnetic Shape Memory Alloys	Chun-Kai Wang, Chen-Ti Hu
1210	31	Synthesis of Tungsten Oxide Nanowires for Smart Windows	Bohr-Ran Huang, Tomy Abuzairi, and Tzu-Ching Lin
1211	32	Fast switching electrochromic device based on tungsten oxide nanowires	Bohr-Ran Huang, Tzu-Ching Lin, Wei-Hung Hsu*

Paper ID	Board #	Title of the poster	Authors
Symposium F3: Carbon-based Materials (CNT, Graphene, Diamond) 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0098	33	High sensitivity of carbon nanotube organic vapor sensors	Chien-Sheng Huang, Sheng-Joue Young, et al.
0309	129	Characterization of the a-SiC _x Passivation Film According to the Silicon to Carbon Ratio	E. S. Cho, S. J. Lee, et al.
0492	34	Measurements of mechanical properties and number of layers of graphene from one nano-indentation	ZHANG Yupeng, PAN Chunxu
0507	35	Direct Synthesis of High Concentration N-Doped Coiled Carbon Nanofibers from amine Flames and Its Electrochemical Properties	Cao Bing, Zhang Bin, et al.
0614	130	Effects of the initiators on the mechanical properties of the electron beam cured carbon nanotubes/epoxy composites	Yanyan Lu, Hua Li, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium F3: Carbon-based Materials (CNT, Graphene, Diamond) 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0646	131	Preparation and Characterizations of Pt nanoparticles supported on various activated carbons used for hydrogen storage application	Huan-Hsiung Tseng, Chien-Hung Chen, et al.
0736	36	Graphene Nanosheets Deposited on Polyurethane Films by Self-Assembly for Preparing Transparent, Conductive Films	Hsi-Wen Tien, Yuan-Li Huang, et al.
0776	37	Vertically anchored nanostructures on carbon fiber enhance the wettability between the surface nanostructures and the resin	Nilay Kumar Dey, Kang Ho Choi, et al.
0809	132	The Fluorescence Properties of Carbon Microspheres and Their Composites	Yongzhen Yang, Jingjing Song, et al.
0847	133	MnO-doped graphene nanocomposite as anode materials for lithium-ion batteries	Chien-Te Hsieh, Chi-Yuan Lin, Jia-Yi Lin
1020	134	Low Electric Field Modulated Surface Tension of Aligned Carbon Nanotube Arrays	Che-Hsien Li
1053	135	Porous Thin Film/Metal Composites: The Third Mechanism Governed Shielding of Electromagnetic Radiation	Shing-Jiun Chen
1054	136	Plasma-induced oxidation of carbon nanotubes	Yen-Hung Kuo
1062	38	Field emission properties of carbon nanotube arrays on the flexible substrate by oxide barrier layer in the pattern transfer process	Chuan-Ping Juan, Yi-Chan Lin, Chia-Tsung Chang
1063	39	A study on the modification of coal tar pitch and the formation	Hsin-Ping Chang, Chuen-Ming Gee, et al.
1068	121	Materials of Melt Spun Precursor of PAN-based Carbon Fiber	Tun-Fun Way, Kai-Jen Hsiao, et al.
1078	40	A Novel Inspection for Deformation Phenomenon of Reduced-graphene oxide via Quantitative Nano-mechanical Atomic Force Microscopy	Jen-You Chu, Wei-Sheng Hsu, et al.
1104	137	Direct Formation of Wafer Scale Graphene Thin Layers on Insulating Substrates by Chemical Vapor Deposition	Lain-Jong Li*, Chinn-Yuan Su, et al.
1143	41	Electronic structures of graphene/boron nitride sheet superlattices	S. Jungthawan, S. Limpijumnong, Jer-Lai Kuo
1162	42	A study on the thermal conductivity of natural graphite/pitch composites	Chuen-Ming Gee, Hsin-Ping Chang, et al.
1163	43	A study on graphite densification through impregnation of pitch	Chuen-Ming Gee, Hsin-Ping Chang, et al.
1164	44	Fabrication of mesophase pitch using a mixture of coal tar pitch and petroleum pitch	C.H. Lin, H. P. Chang, et al.
1168	45	A study on the reducibility of graphene oxide by a variety of reductants	Jing-Wun Fan, Chin-Lian Chang, et al.
1169	46	The growth of multi-walled carbon nanotubes on copper substrate with chemical vapor deposition	Jin-Wei Li, and Jarrn-Horng Lin
1215	47	Using an ethanol jet to control the sizes of the graphite encapsulated metal nanoparticles synthesized by the arc discharge method	Pang-Wen Li, Mao-Hua Teng
1226	48	Femtosecond Carrier Dynamics and Saturable Absorption in Functionalized Epitaxial Graphene	Si Xiao, Hui Ying Hoh, Kian Ping Loh

Paper ID	Board #	Title of the poster	Authors
Symposium F3: Carbon-based Materials (CNT, Graphene, Diamond)			
2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
1253	49	Synthesis of Graphite Encapsulated Metal Nanoparticles with High Encapsulation Efficiency	Chih-Cheng Chiu, Mao-Hua Teng
1273	122	Carbon black as the source for producing carbon quantum dots by simple centrifugal and chemical oxidation	Shih-Min Chen, Jarrn-Horng Lin
1281	50	The effect of surface modification for improving the dispersion stability graphene oxide sheets in reduction process	Jhih-Fong Lin, Chieh-Ming Tsai and Wei-fang Su
1301	51	Synthesis of Carbon Encapsulated Non-ferromagnetic Metal Nanoparticles	Shang-Shih Li, Jui-Chen Lu, Mao-Hua Teng
1310	52	Growth of graphene thin-films by polymer precursor-based chemical vapor deposition under atmospheric pressure	G.N. Shi, N.W. Pu, et al.
1311	53	Magnetoresistance effect of bucky paper doped with magnetic nano powders	Bin-Wei Huang, Jih-Hsin Liu*, Hsin-Yuan Miao
1314	54	A study on the dielectric property of modification buckypaper	Chau-Yuen Chiu, Hsin-Yuan Miao, et al.
1315	55	The low temperature resistance test of buckypaper and its microwave application	Hong-Ru Lin, Hsin-Yuan Miao*, et al.
1316	56	Microwave absorption of buckypaper doped with ferromagnetic nano powders by multilayer microstrip line method	Che-Wei Tsao, Jih-Hsin Liu, Hsin-Yuan Miao
1319	57	A study on the thermoelectric effect of buckypaper and its application	Ching-Yao Chiang, Hsin-Yuan Miao, et al.
1322	58	A study on the photoconductivity properties of buckypaper	Chih-Chieh Hsu, Jih-Hsin Liu, Hsin-Yuan Miao
1327	59	Graphene and silver-filled resin for new hybrid conductive adhesives	C. Y. Chen, N.W. Pu, et al.
1357	138	Deposition of Pt catalytic nanoparticles on graphene	Te-Yu Liu , Yang-Cheng Fan, et al.
1362	60	Direct Deposition of Diamond-like Carbon onto SS304 Stainless Steel Substrates	Chun-Hsi Su, Hua-Yi Hsu, Jyun-Hong Lee
1364	61	Production of graphene from artificial graphite	W. C. Hung, N.W. Pu, et al.
1369	62	The cathodes of field emission lamp fabricated with carbon nanocoils/stainless steel webs	M. H. Lee, Y.C. Chen, et al.
1379	63	Field emission emitters fabricated with carbon nanocoils/stainless steel wire	Yi-Hao Tang, Y.M. Liu, et al.
1382	64	Enhancement of the luminescence efficiency of field emission bulbs	K. J. Chung, Y.M. Liu, et al.
1385	65	Fabrication of field emission lamps using dip-coated nano carbonaceous emitters	S.J. Gao, k.J.Chung, et al.
1395	66	Fabrication of Graphene Transparent Conductive Films by Spray-Coating	Y.Y.Peng, C.Y. Chen, et al.
1418	67	Effect of QI on the formation and morphology of mesophase pitch	Hsin-Ping Chang, Chun-huesh Lu, et al.
1419	68	Effect of different ration of TI to TS on formation of mesophase pitch	Chun-Huesh Lu, Hsin-Ping Chang, et al.

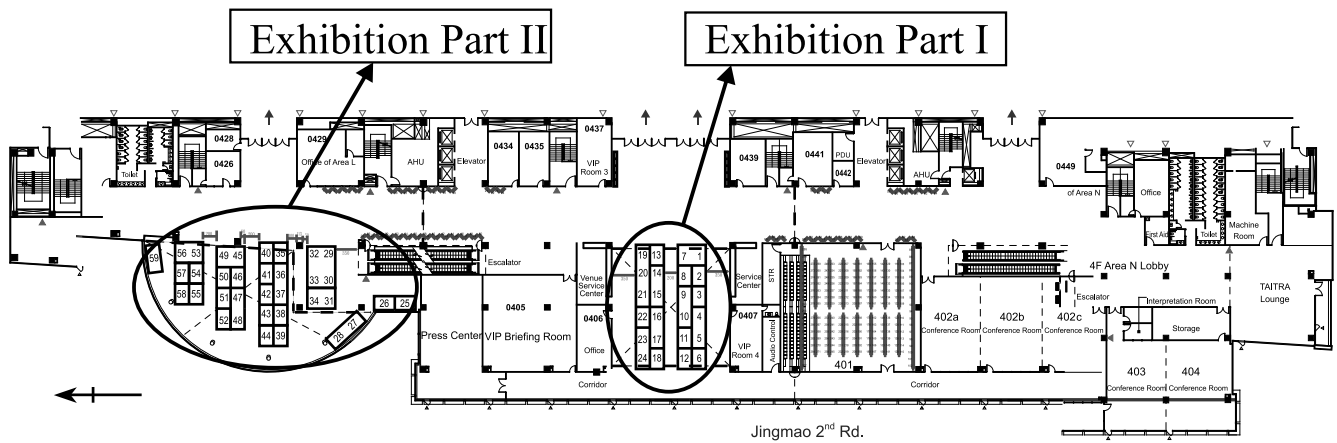
Paper ID	Board #	Title of the poster	Authors
Symposium F4: Emerging Processing Technology - ALD 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0107	69	The Microstructure Investigation of HfO ₂ Thin Film after Post-annealing	Yi-Yan Chen, Writam Banerjee, et al.
0137	70	Properties of SnO ₂ films grown by Atomic Layer Deposition	Hsyi-En Cheng, De-Cih Tian, Kuan-Chun Huang
0648	139	A study of atomic layer deposited Al ₂ O ₃ thin films on pure coppers	M.L. Chang, L.T. Huang, et al.
0658	140	Low-threshold and blue-shifted stimulated emission from preferentially (10-10)-oriented ZnO films deposited on SiO ₂ by atomic layer deposition	M.-C. Lin, M.-K. Wu, et al.
1433	141	Studies of H ₂ O-based atomic layer deposited Al ₂ O ₃ dielectric on graphene	Zhang You-Wei, Cheng Xin-Hong, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium F5: Material Technology for Integrated Passive/active Components 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0283	71	A Novel Approach to Sintering (Ba,Ca)(Ti, Zr)O ₃ Multilayer Ceramic Capacitors with Ni Electrodes	S.H. Wang , W.H.Lee
0379	142	DLTS and CV studies on non-volatile memory properties of Zn and Sn nano thin film fabricated with supercritical carbon dioxide process	Tai-Fa Young, Kuan-Ting Hsu, and Cheng-Lin Hung
0825	143	The photoelectric efficiency of ZnS-base phosphors.	Cheng-Hung Li, Ming-Chung Liu, et al.
0852	72	Micro-heater and thermal sensor on multi-layered glass-ceramic substrate	W. C. J. Wei, D. W. Liaw, et al.
1243	73	TCR Control of Ni-Cr Resistive Film Deposited by DC Magnetron Sputtering	Nai-Chuan Chuang, Kao-Yuan Wang, Huey-Ru Chen
1309	74	Selective electrophoretic deposition of SiO ₂ nanoparticles on IDA electrodes for MLCC application	Shao-Yu Wang, Bernard H. Liu*, Sheng-Chang Wang
1356	75	Simulations of Stresses in MLCC Subjected to Board Flex Test Using Object-Oriented Finite-Element Analyses	C. H. Hsueh, Kun-Yen Chen, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium F6: Structures and Functionalities of Colloids, Supramolecules and Soft Matter with Complexity 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0066	76	Deglycosylation Effect of Plasmin-treated Fibrinogen on the Polymerization	Kenji Kubota, Yoshimi Yatagai, et al.
0067	77	Accelerated Gel Formation in Asialofibrinogen	Kenji Kubota, Takahiro Fukuda, et al.
0110	78	Blocking Quorum Sensing in Gram-negative Bacteria Using Cyclodextrin-Conjugated Hydrogel Sheets	Chigusa Okano, Azumi Kobayashi, et al.
0229	79	Solvent-Substitution Effect on (micro)m-Scale Structure of PAAm/SA Gel	Satoru Yoshioka, Satoshi Yanagino, Kazuhiro Hara
0250	80	Reversible Volume Change of Thermosensitive Collagen Hydrogel	Takuto Umemura, Takahisa Nakada, Norihiro Kato
0301	123	Swelling Behavior of Chemically Crosslinked Poly(vinyl alcohol) Gels in Response to External Stimuli	Shintaro Usui ¹ , Keiichiro Kamemaru, et al.
0303	81	Salt Effects on the Formation of Microcrystallites in Poly(vinyl alcohol) Gels Prepared by a Cast-Drying Method II	Takahiro Yoshida, Shin Komiya, et al.
0305	82	Elution and Erosion of Physically Cross-linked Poly(vinyl alcohol) Gels	Saori Sasaki, Emiko Otsuka, et al.
0306	124	Effects of Water Content on Adhesion Force of Poly(vinyl alcohol) Gels	Kenta Koizumi ¹ , Yoshiki Sugizaki, et al.
0325	83	Dielectric Relaxation Behavior of Nonionic Surfactant	T. Sawada, R. Kita, et al.
0339	84	Liquid-liquid phase separation and gelation of the system poly (3-hydroxybutanoic acid) and acetic acid	Hiromi Toyama, Masako Wakamatsu, et al.
0343	85	Synthesis and Morphology of Poly(3-(2-ethylhexyl)thiophene)-b-Poly(methyl methacrylate) Rod-Coil Block Copolymers	Shih-Hsiang Lin, Chun-Chih Ho, et al.
0345	86	The Effect of the Addition of Calcium Chloride and Sucrose on Volumetric Phase Transition of Rice Grains	Kunio Nakamura, Atsuko Akutsu, Ayumi Ohtake
0367	87	Dynamics of chitosan gelation under square boundary condition	Isamu Rokugawa, Naoko Tomita, et al.
0380	88	Effects of Monomer Constituents, Crosslinker Concentration and Ambient Temperature on the Turbidity of Poly (acrylamide-co-maleic acid) Gel	Ahmad Hassan, Satoru Yoshioka, Kazuhiro Hara
0391	89	Nano-structural Analyses of Copper-ion-adsorbed PAAm/SA Gels after UV-Irradiation	Satoru Yoshioka, Yoshio Uemoto, Kazuhiro Hara
0398	90	Comparison of Thermal Behavior between Gel and Sol of Poly(N-isopropylacrylamide) in Low Water Content	Atsushi Nakamura, Kazuhiro Hara, N. Hiramatsu
0414	91	Aging and Memory in a Gelatin Gel	Yasuyuki Maki, Sho Watabe, Yuko Tagami
0577	92	γ -ray Irradiation Effect on Structure of Eye Lens Protein (Crystallin)	Masaaki Sugiyama, Norihiko Fujii, et al.
0580	93	Network Formation by End-linking of Star polymer and Viscoelasticity Calculation with Branch-On-Branch Rheology	Yutaka Tanaka
0617	94	DNA@Inorganic Core-Shell Hybrid for Nano-forensics	D. H. Park, J. E. Kim, et al.

Paper ID	Board #	Title of the poster	Authors
Symposium F6: Structures and Functionalities of Colloids, Supramolecules and Soft Matter with Complexity 2011/9/20 14:00-17:00 Main activity: 15:00-15:40			
0688	95	Observation of Supercooling Water in Hardened Low Heat Portland Cement	K. Mori, T. Fukunaga, M. et al.
0701	96	Surface coating of calcium containing layered metal hydroxide nanoparticles for solubility control	Tae-Hyun Kim, Jae-Min Oh
0703	97	Nucleotide adsorption kinetics on layered double hydroxide nanoparticles with different sizes	Kyoung-Min Kim, Chung-Berm Park, et al.
0704	98	Surface modification of different sized zinc oxide nanoparticles for cellular interaction study	Kyoung-Min Kim, Soo-Jin Choi, et al.
0790	99	Temperature dependence of KWW parameters for viscoelasticity of liquid silk from Bombyx Mori silkworm	Yuma Otsuka, Naoko Tomita, et al.
0823	100	Advanced cancer gene therapy with siRNA-Inorganic Nanocarrier Hybrids	Jaeyong Cho, Dae-Hwan Park, et al.
0831	144	Synthesis of Micron-Sized Monodisperse amino-functionalized Magnetic Poly(glycidyl methacrylate) Particles for Cr(VI) Removal	LI Pengfei, YANG Liangrong, et al.
0835	101	Mass Transfer Rates of Bacterial Cell-to-Cell Communication Signals through the Hydrogel Membrane Immobilized with Cyclodextrin	Chihiro Ueno, Takuto Umemura, et al.
0949	102	DNA ENCAPSULATION INTO INORGANIC 2D LATTICE OR X-RAY NANOSHELL	D. H. Park, J. E. Kim, et al.
0977	103	Cytotoxicity and Photocytotoxicity of ZnO Nanoparticles in Human Keratinocyte Cells	Jin Yu, Hyeon-Jo Cho, Soo-Jin Choi
0981	104	Effect of Dispersing Agent of ZnO Nanoparticles on Cytotoxicity and Cellular Uptake	Hae-Eun Chung, Hye-Jin Koo, et al.
0983	105	Toxicological evaluation of cationic nanoclays in vitro and in vivo	Miri Baek, Jeong-A Lee, Soo-Jin Choi
1023	106	Helical nanofiber formation from the self-assembly of cytidylic acid-appended bolaamphiphile in acidic solutions	Rika Iwaura, Tomohiko Iizawa, et al.
1135	107	Preparation and Fractal-Structure Characterization of Monolithic Silica Aerogel with a Short-Chain Ionic Liquid as the Solvent	Ching-Mao Wu, Szu-Yin Lin
1139	108	Preparation of triethylamine stabilized silver nanoparticles for low-temperature sintering	J.-T. Wu, Steve L.-C. Hsu, Y.-Q. Chen
1167	109	Morphological study of battery separator film at processing stage	Chih-Hung Lee, Ming-Cheng Feng, et al.
1378	125	Submicro patterning for the Enhancement of Light Trapping in Conducting Glasses	Meng-Hung Tsai, Han-Lung Liu, Kuan-Zong Fung

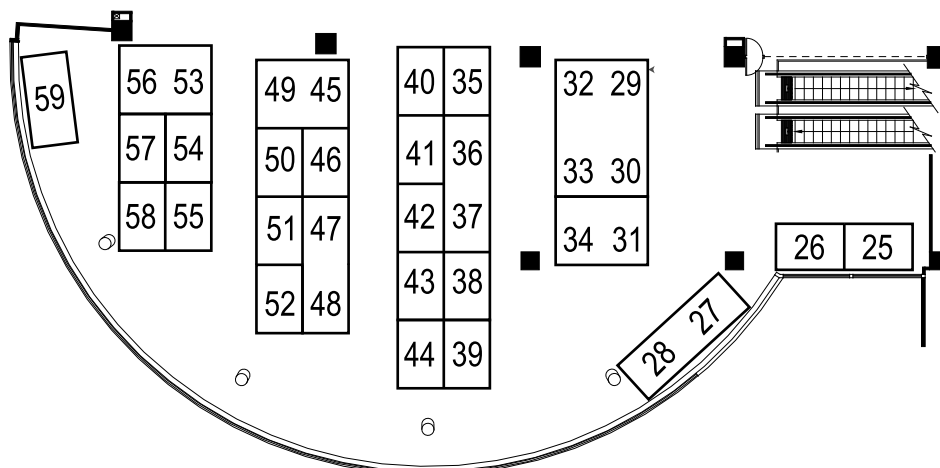
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19	13	7	1
20	14	8	2
21	15	9	3
22	16	10	4
23	17	11	5
24	18	12	6

Exhibition Part II



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31,34	High Density Lucky Apparatus Co., Ltd.	www.tw-hdl.com

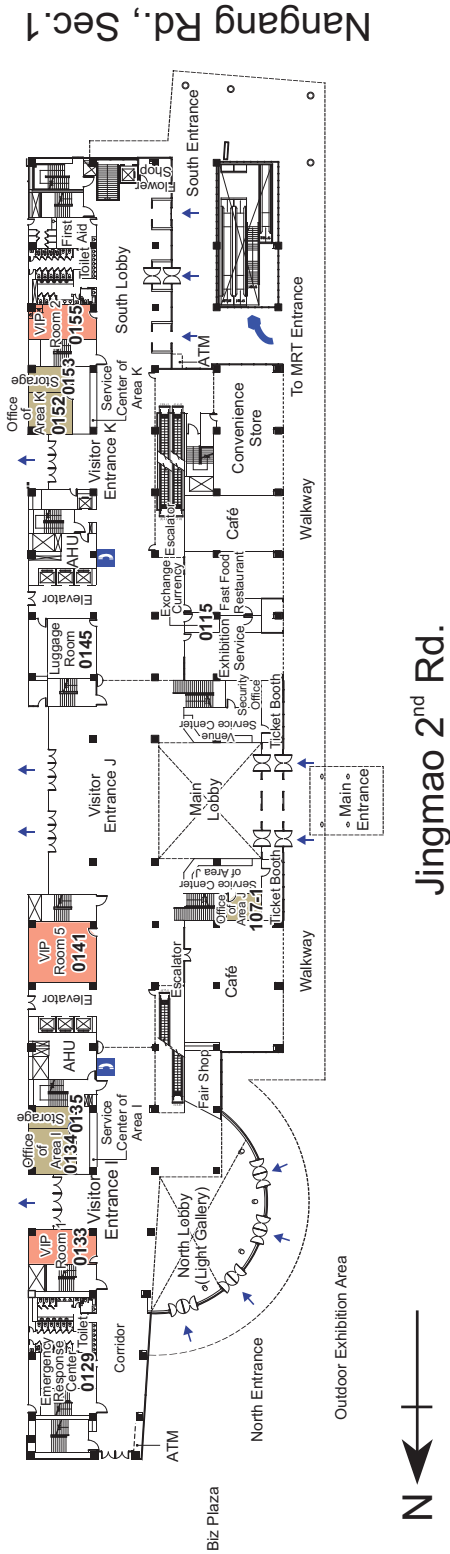
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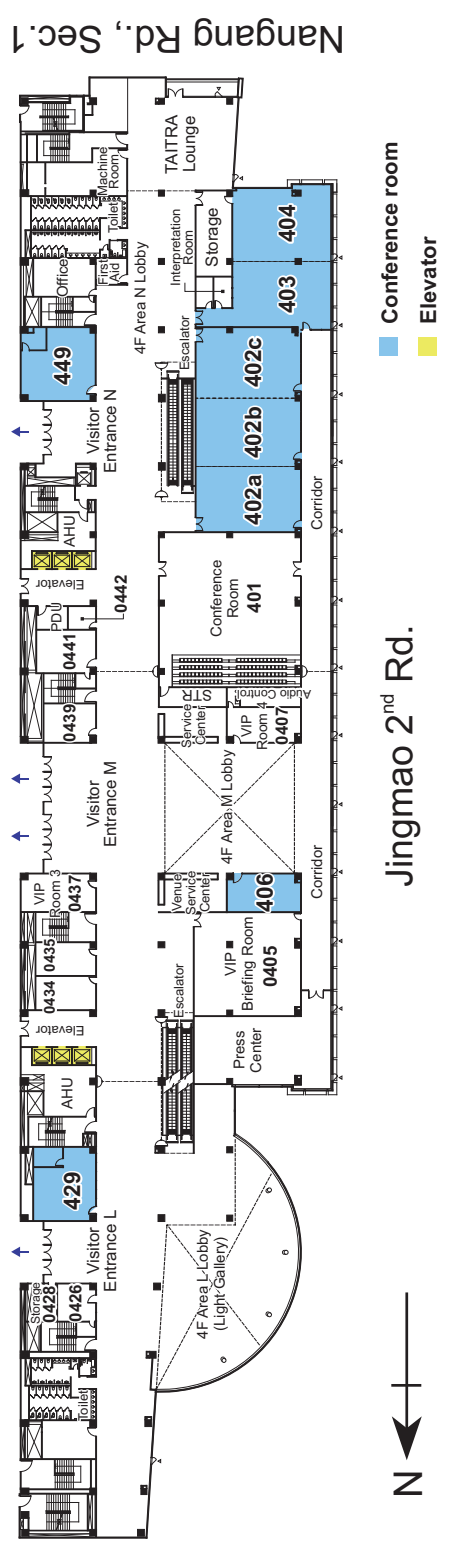
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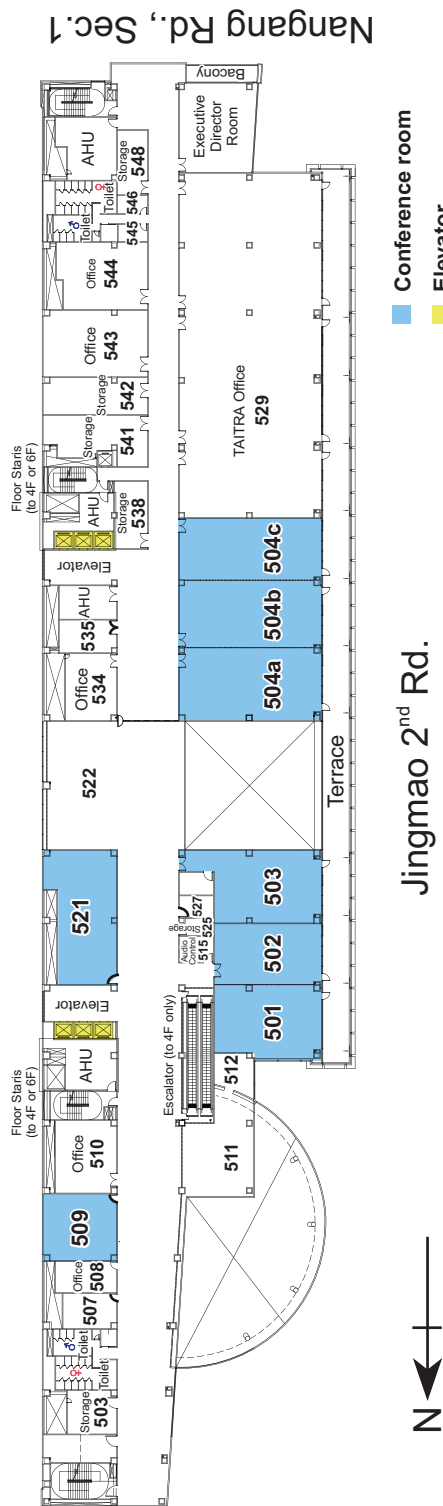
1F West Side Floor Plan



4F West Side Floor Plan



5F West Side Floor Plan



6F West Side Floor Plan

