

	<i>University, Taiwan, <sup>2</sup>Taiwan Uyemura Limited Company, Taiwan</i>	<i>Southwest Jiaotong University, China</i>	<b>configuration</b> F.M. Chang <sup>*1</sup> , Z.Z. Wu <sup>1</sup> , Y.F. Lin <sup>1</sup> , L.C. Kao <sup>1</sup> , C.T. Wu <sup>2</sup> , S.K. JangJian <sup>2</sup> , K.Y. Lo <sup>1</sup> , <sup>1</sup> National Cheng Kung University, Taiwan, <sup>2</sup> Fab 14B, Taiwan Semiconductor Manufacturing Co.Ltd., Science-Based Ind. Park, Taiwan	<b>secondary batteries</b> B. Son*, Y. Hyun, J-Y. Bae, H-K. Park, C-S. Lee, <i>Keimyung University, Republic of Korea</i>
11:30-11:50	<b>[O1A1.5] Effect of surface etching on the oxidation behavior of plasma chromizing-treated AISI440B stainless steel</b> T.X. Meng*, Q. Guo, W. Xi, W.Q. Ding, X.Z. Liu, N.M. Lin, Z.X. Wang, H.J. Hei, S.W. Yu, X.P. Liu et al, <i>Taiyuan University of Technology, China</i>	<b>[O1B1.5] Effects of annealing and thickness on perpendicular magnetic properties of Pd/Co<sub>2</sub>FeAl/MgO structured films</b> K. Wang*, Z. Xu, S. Dong <i>Huaqiao University, China</i>	<b>[O1C1.5] Influence of interface states on electronic performance in silicon nanocrystals based devices</b> K. Chen*, J. Yu, X. zhang, Z. Ma, X. Huang, <i>Nanjing University, China</i>	<b>[O1D1.5] Fastest and most reproducible optical contact angle determination using the novel liquid needle</b> K. Oetjen <sup>1</sup> , M. Jin <sup>1</sup> , M. Kirchner <sup>*1</sup> , D. Frese <sup>1</sup> , C. Scheithauer <sup>1</sup> , R. Sanedrin <sup>2</sup> , P.R. Waghmare <sup>3</sup> , T. Willers <sup>1</sup> , <sup>1</sup> KRÜSS GmbH, Germany, <sup>2</sup> KRÜSS USA, USA, <sup>3</sup> University of Alberta, Canada
11:50-12:20	<b>[INV01] Ultrathin Oxide Films on Metal Substrates</b> S. Shaikhutdinov, <i>Fritz Haber Institute, Germany</i>	<b>[INV02] Steering reaction pathways on surfaces</b> Q.T. Fan, T. Wang, J.F. Zhu* <i>University of Science and Technology of China, China</i>	<b>[INV03] Graphene-Based Supercapacitors</b> Z.S. Wu*, S.H. Zheng, S. Wang, H. Xiao, F. Zhou, <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China</i>	<b>[INV04] Applications of ambient pressure photoelectron spectroscopy to studies of surfaces of catalysts</b> F. Tao, <i>University of Kansas, USA</i>
<b>12:20-14:00</b>	<b>Lunch   Room: Grand Ballroom and Reception Hall</b>			
<b>14:00-16:20</b>	<b>Functional Surfaces and coatings</b> <i>Session chair: David Starr</i>   Room: Grand Ballroom	<b>Surface nanoengineering</b> <i>Session chair: Junfa Zhu</i> Room: TianBoFu A	<b>Biointerfaces</b> <i>Session chair: Gangyu Liu</i> Room: TianBoFu B	<b>Electrochemistry at surfaces and corrosion protection strategies</b> <i>Session chair: Weixin Huang</i> Room: TianBoFu C
14:00-14:40	<b>[K05] Electronic Structure and Properties of Semiconducting Transparent Conducting Oxides</b> Chris McConville, RMIT University, <i>Australia</i>	<b>[K06] Tailored metallic nanoparticles fabricated via solid-state dewetting</b> D. Wang, <i>TU Ilmenau, Germany</i>	<b>[K07] Surface Modification of Biomaterials by Plasma-Based Technology</b> P.K. Chu, <i>City University of Hong Kong, Hong Kong</i>	<b>[K08] Surface Raman analysis with shell-isolated mode</b> J-F. Li <i>Xiamen University, Xiamen, China</i>

## KEYNOTE SPEAKER BIOGRAPHY



**Paul K Chu**, *City University of Hong Kong, Hong Kong*

Paul K Chu received his BS in mathematics from The Ohio State University and MS and PhD in chemistry from Cornell University. His research spans a broad scope encompassing plasma surface engineering, materials science and engineering, as well as surface science. He is Chair Professor of Materials Engineering in the Department of Physics and Materials Science at City University of Hong Kong. He is a fellow of the American Physical Society (APS), American Vacuum Society (AVS), Institute of Electrical and Electronics Engineers (IEEE), and Materials Research Society (MRS). He is also a fellow of the Hong Kong Academy of Engineering Sciences (HKAES) and Hong Kong Institution of Engineers (HKIE). He has received more than 20 research awards and honors and a highly cited researcher in materials science according to Thomson Reuters.



**Weixin Huang**, *University of Science and Technology of China, China*

Weixin Huang, Born in 1974, received B.S. degree in Chemistry from University of Science and Technology of China (USTC) in 1996 and Ph. D degree in Physical Chemistry from Dalian Institute of Chemical Physics in 2001. He then worked as a postdoctoral fellow at University of Texas at Austin between 2001 and 2003 and as an Alexander von Humboldt fellow at Fritz-Haber-Institut der MPG in 2004. Then he was enrolled in the Hundred Talent Program of Chinese Academy of Sciences and became a professor of USTC. His research area focuses on surface chemistry and catalysis of catalysts with well-defined structures ranging from single crystals to nanocrystals. He won the “Young Scientist Prize” of the 13th International Congress on Catalysis, the Alexander von Humboldt research fellowship, the “Youth Innovation Award” of Chinese Vacuum Society, the “Youth Chemistry Award” of Chinese Chemical Society and the distinguished young scholar fund of NSFC. He is an editor of Applied Surface Science and an editorial board member of Catalysis Letters, Topics in Catalysis and Chinese Chemical Letters.



**Maya Kiskinova**, *Elettra-Sincrotrone Trieste, Italy*

Maya Kiskinova was born in Sofia (Bulgaria). She graduated from Sofia State University “Kliment Ohridski” in 1972 with Master in Chemistry, received her Ph.D in 1977 and Sc. D. Habilitation in 1989 in Physical Chemistry. She had research positions in Bulgarian Academy of Science and joint appointment as associate professor in Sofia State University before moving to Elettra Laboratory as a senior scientist in 1990 to supervise the development of X-ray and IR microscopy and imaging research programs. Presently she is the Elettra Research Coordinator, teaches a PhD Course in the University of Trieste and lectures at international schools. She was a visiting scientist at the National Bureau of Standards, now NIST (USA) in 1980, IGF-KFA, now FZJ (Germany) in 1982-1984 and University of Pittsburgh (USA) in 1987-1988. In 2002 she received Italian citizenship for scientific merits and in 2005 was awarded Distinguished Humboldt Research Grant. Maya Kiskinova was/is member of many scientific and review panels in Europe (Germany-DESY, XFEL in Hamburg and HZB in Berlin, France-SOLEIL, Switzerland-SLS, Spain-ALBA, Sweden-MaxLab), USA (LCLS-SLAC, ALS-Berkeley and NLSL-Brookhaven) and Asia (SESAME – Amman). She has chaired and co-chaired a number of international conferences, workshops and schools and is a member of numerous steering and program committees. Expertise: Research interests and achievements cover different aspects of nano-structured organic and inorganic materials, thin films, interfaces, surface reactions, mass transport, electronic and magnetic properties, chemical reactivity, fuel and solar cells, nano-toxicology and transient states of matter. Last 20 years of research activities have been focused on exploring the properties and transient states of matter at sub-micrometer length scales and development of relevant synchrotron and FEL-based methodology. Publications and Dissemination: Over 300 articles in reviewed journals, 14 invited reviews and articles, one book, three book chapters and 2 U.S. Patents. Over 100 invited, keynote and plenary lectures at International Congresses, Conferences, Symposia and Workshops. H-index 43 (SCOPUS).

**[K06]**

**Surface Modification of Biomaterials by Plasma-Based Technology**

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The interactions between biomaterials and biological tissues and fluids depends on the surface properties of the biomaterials and associated biological responses. However, many types of biomaterials having the favorable bulk properties such as hardness, strength, robustness, and chemical characteristics may not produce the pre-designed biological functions and hence, surface modification is frequently performed. Plasma-based technology offers the unique capability that selected surface properties can be modified to address specific biological requirements while the desirable bulk properties of the materials such as those mentioned above can be retained. In this respect, plasma immersion ion implantation and deposition (PIII&D) is one of the widely used plasma-based surface treatment techniques for biomaterials and biomedical implants. Being a non-line-of-sight technique, it is particularly suitable for biomedical devices with a complex shape like dental and orthopedic implants, scoliosis correction rods, cardiovascular stents, and artificial heart valves. In this keynote presentation, recent research conducted in the Plasma Laboratory of City University of Hong Kong related to plasma treatment of biomaterials and biomedical devices will be described. Examples include biocompatibility of nanostructured coatings and surfaces, biodegradable metals, bacteria resistance, and osteogenesis.

Keywords: biomaterials; plasma immersion ion implantation and deposition; surface modification