

iCAT 2008: 2ND INTERNATIONAL CONFERENCE ON ADVANCED TRIBOLOGY
3rd – 5th December 2008, Singapore

TECHNICAL PROGRAMME
(updated as at 22nd November 2008)

DAY 1 WEDNESDAY, 3RD DECEMBER 2008	
8.00am	Registration & Refreshments
OPENING CEREMONY, PLENARY AND KEYNOTE LECTURE Venue: Venus II & III	
8.45am	Opening Address <i>Sujeet K. SINHA</i> <i>iCAT2008 Conference Chairman</i>
9.00am	PLENARY LECTURE “Limits of Boundary Lubrication” <i>Hugh SPIKES, Imperial College, UK</i> Chair: Sujeet K. SINHA
9.45am	Morning Tea Break <i>Duration: 15mins</i>
10.00am	INVITED KEYNOTE 1 “Nano-and Micro-Meter Scale Interface-Roughness-Layer and Its Role in Nanotribology” <i>Kyung-Suk KIM, Brown University, USA</i> Chair: Seh Chun LIM
SESSION 1A: NANOTRIBOLOGY I Venue: Venus II & III Chair: Hsu-Wei FANG	
10.30am	iCAT071 Frictional Force Measurement of Fullerene Intercalated Graphitic Composite <i>Kouji Miura*, Junji Amano, Nariko Hosomi, and Makoto Ishikawa</i>
10.45am	iCAT072 Nanoscale Peeling of Carbon Nanotube on Graphite <i>M.Ishikawa, R.Harada, and K.Miura*</i>
11.00am	iCAT193 Tribological Properties of Self-Assembled Monolayers Prepared on Titanium Film <i>Sun Chang-Guo and Zhang Hui-Chen*</i>
11.15am	iCAT391 Correlation Between Surface Energy and Friction on UHMWPE and Silicon Surfaces <i>Myo Minn* and Sujeet K. Sinha</i>

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SESSION 1B: TRIBOLOGY OF MATERIALS I	
Venue: Venus I Chair: Jerzy SZPUNAR	
10.30am	iCAT001 Sliding Wear Behaviour of Alumnium-Redmud Metal Matrix Composite S.K.Acharya*
10.45am	iCAT004 Dry Sliding Wear Behaviour of Aluminium-Copper Alloys A Narendra Kumar, R Srinivasu, J. Babu Rao*
11.00am	iCAT018 Development of Al-ZrB₂ in situ Composites and its High Temperature Wear Behaviour K. Siva Prasad*, S.P. Kumaresh Babu, S. Senthil Kumaran and S. Natarajan
11.15am	iCAT175 Quantitative Comparison Between Rubber-Ice and Sand-Ice Friction Alex Klein-Paste* and Nirmal K. Sinha
11.30am	iCAT099 Effect of Environmental Humidity on Wear Behavior of Aluminum-Silicon Alloy Impregnated Graphite Composite (ALGR-MMC) under Dry and Insufficiently Lubricated Sliding Conditions Hozumi Goto, Claudiu V. Suci*
SESSION 1C: TRIBOLOGY OF MATERIALS II	
Venue: Jupiter II Chair: Rupa DASGUPTA	
10.30am	iCAT300 Tribofilm Composition on Paper Based Friction Materials Lubricated by Automatic Transmission Fluids and the Link between Frictional Behaviour Hongyuan Zhao*, Ardian Morina, Anne Neville, John Durham, Richard Vickerman
10.45am	iCAT039 Estimation of Wear Rate in Dual Phase Steel on the Basis of the Load Sharing of the Load Sharing between Constituent Phases Rajnesh Tyagi*, S. K. Nath, S. Ray
11.00am	iCAT090 Study on Frictional Behavior of SUS 304 Austenitic Stainless Steel against DC 53 Cold-work Steel by Boronizing Sheng Zhou, Zongyu Xue, Xicheng Wei*, Jian Li
11.15am	iCAT092 Characteristics of multicomponents Cladding with Boron Carbides Addition J.H. Chen, P.H. Hua, P.N. Chen, M.C. Chen, Y.A. Chen, W. Wu*

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SESSION 1D: TRIBOLOGY IN MANUFACTURING PROCESSES I	
Venue: Jupiter III Chair: Takashi MURAKAMI	
10.30am	iCAT045 Investigation into Surface Topography and Tribological Characteristics Finished by Abrasive Jet with Grinding Wheel Changhe Li*, Yucheng Ding, Bingheng Lu
10.45am	iCAT103 Wear Simulation of Sheet Metal Forming Tools Produced by Rapid Manufacturing Technologies K. Ersoy Nürnberg*, H. Hoffmann
11.00am	iCAT126 Study on the Effect of Friction & Lubrication in Deep Drawing Process G Chandra Mohan Reddy*, B V S Rao
11.15am	iCAT140 Effects of Pits Arrays Formed on Tool Surface on Plastic Flow under Bulk Plastic Deformation S. Kamitani*, K. Nakanishi and S. Syahrullail
11.30am	iCAT179 A Novel Method To Improve Finish On Non-Magnetic Surfaces In Magneto-Rheological Abrasive Honing Process A. Sadiq*, M. S. Shunmugam
11.45am	Networking Lunch <i>Duration: 75mins</i>
KEYNOTE LECTURE	
Venue: Venus II & III	
1.00pm	INVITED KEYNOTE 2 “Tribological Properties of Carbon Nanotubes and Onions Depending on Applied Forces” <i>Nobuo OHMAE, Kobe University, Japan</i> Chair: Sujeet K. SINHA
SESSION 2A: BIO- TRIBOLOGY I	
Venue: Venus II & III Chair: Margam CHANDRASEKHARAN	
1.30pm	iCAT080 Effects of Albumin Conformation and Adsorption on Frictional Behaviors: Experimental and Molecular Dynamics Simulation Approaches Man-Ching Hsieh, Cheng-Yen Tsai, Hwei-Ting Huang, Hsu-Wei Fang*
1.45pm	iCAT081 Effects of Synovial Biomolecules on Tribological Behaviors of Arthroplastic Surfaces Hwei-Ting Huang, Cheng-Yen Tsai, Hsu-Wei Fang*
2.00pm	iCAT224 Effect of Proteins on the Surface of the Tribological Pair Alumina/Alumina Nanocomposites for Total Hip Replacement C. Morillo*, Y. Sawae and T. Murakami

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2.15pm	iCAT181 Surface Plasma Passivation Treatment on Metal-on-Metal Hip Bearings to Enhance Corrosion Resistance and to Reduce Wear Yen-Shuo Liao*, Stephanie Vass, Larry Salvati
2.30pm	iCAT182 Effect of Sliding Velocity on the Wear of Metal-on-Metal Bearings in a Hip Joint Simulation Test Yen-Shuo Liao*, Dustin Whitaker and Amber Alberts
2.45pm	iCAT189 Transient Elastohydrodynamic Lubrication in Artificial Knee Joint with non-Newtonian Fluids Khanittha Wongseedakaew, Mongkol Mongkolwongrojn*, Francis E. Kennedy
3.00pm	iCAT314 Tactile Perception - Finger-Friction of Printing Papers with Different Treatments - A Correlation between Roughness and Friction L. Skedung*, M. W. Rutland, K. Danerlöv, Maiju Aikala, Ulf Olofsson, John Kettle, Kari Niemi
SESSION 2B: TRIBOLOGY OF COATINGS I Venue: Venus I Chair: Jun ZHANG	
1.30pm	iCAT264 Friction Characteristics of Solid Lubricating Films for machine Elements Dong-Wook Kim*, Kwang-Seop Kim, Kyung-Woong Kim
1.45pm	iCAT377 Friction and Wear Behavior of Self Mated DLC and W – DLC Coatings in Water or Salt in Water Solution Lubricated Sliding Antoni Neyman, Jacek I. Lubinski*, Jan Sikora, Artur Olszewski, Krzysztof Druet, Andrzej Czyżniewski
2.00pm	iCAT104 Growth mechanism, corrosion and tribological properties of ultra-thin diamond-like carbon films Chenhui Zhang*, Min Zhong, Jianbing Luo
2.15pm	iCAT070 Three Body Abrasive Wear of Plasma Sprayed Al₂O₃-13%TiO₂ Coatings Y. Wang*, W. Tian, Y. Yang
2.30pm	iCAT105 Friction and Wear Characteristic of Duplex duplex MAO/CrN Coatings in Various Environments F. Zhou*, Y. Wang, Y.D. Meng, Z.X. Ren
2.45pm	iCAT270 Comparative Tribological Study of Air Plasma Sprayed WC-12%Co Coating versus Conventional Hard Chromium Electrodeposit M. Heydarzadeh Sohi*, F. Ghadami
3.00pm	iCAT145 Influence of Processing Parameters on the Friction Coefficient of TiN Coatings Deposited on Tool Steel using Cathodic Arc PVD Technique M. Ali*, E. Hamzah, M.R.M. Toff

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3.15pm	iCAT147 Wire Arc Sprayed Coating of Nano-Material A. Klimpel, A. Czupryński*
SESSION 2C: TRIBOLOGY OF MATERIALS III Venue: Jupiter II Chair: Zygmunt RYMUZA	
1.30pm	iCAT016 Polymer Composites in Tribology K. Friedrich*, F. Hauptert, L. Chang
1.45pm	iCAT031 Nanoscale Energy Dissipation and Failure Mechanics of NanoParticles, Nanoclusters and Nanoparticle filled polymer composites D.Devaprakasam*, B.J.Inkson, G.Möbus, P.V. Hatton
2.00pm	iCAT061 Friction and Wear Behaviour of Engineering Polymers Against Polymer A. Mimaroglu*, H Unal, A Ozel, N Filiz, K Ozkan, C Karadeniz, I Kaya,
2.15pm	iCAT143 The Abrasive Wear Behavior of Carbon Fabric Reinforced Epoxy Composite with Graphite Filler B. Suresha*, B.N. Ravi Kumar, M. Venkataramareddy, B.N. Ramesh
2.30pm	iCAT227 Erosive Wear Behaviour of Bagasse Fiber Reinforced Polymer Composite Punyapriya Mishra*, S.K.Acharya
2.45pm	iCAT274 Adhesive and Frictional Behaviour of Polymeric Composites Based on KENAF Fibre C. W. Chin, B. F. Yousif*
3.00pm	iCAT278 Transfer Film Formation and Waer of PTFE in Gaseous Hydrogen Yoshinori Sawae*, Kazuhiro Nakashima, Akira Yamaguchi, Shunichiro Doi, Hiroyoshi Tanaka, Shigemasa Yamagami, Yoshie Kurono, Teruo Murakami, Joich Sugimura
3.15pm	iCAT362 Influence of Fiber Orientation on Abrasive Wear of Unidirectionally Reinforced Carbon Fiber - Polyetherimide Composites Mohit Sharma, I. Mohan Rao and Jayashree Bijwe*
SESSION 2D: TRIBOLOGY OF MATERIALS IV Venue: Jupiter III Chair: M. KAMARAJ	
1.30pm	iCAT154 Study on Rotational Fretting Wear of 7075 Aluminum Alloy J. L. Mo, M. H. Zhu*, J. F. Zheng, J. Luo, Z. R. Zhou
1.45pm	iCAT204 High Temperature Wear Characteristics of Hyper Eutectic Al-17%Si Alloy Reinforced With Graphite (G_r) and Carbon Short Fibres (C_f) C.S. Ramesh, T.B. Prasad*

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2.00pm	iCAT275 Effect of Phosphorus on the Microstructure, Wear Behaviour and Mechanical Properties of Hypereutectic Al-Si Alloys S. A. Kori, S. C. Biradar, T.M. Chandrashekharaiiah*
2.15pm	iCAT327 Dry and Lubricant Tribological Characteristics of AL₂O_{3F}/SiC_P Hybrid MMCs with Varying Fiber Orientations and Hybrid Ratios Y. Q. Wang, A. M. Afsar, J. I. Song*
2.30pm	iCAT328 Effects of Fiber Orientations and Hybrid Ratios on Dry and Lubricant Tribology of AL₂O_{3F}/SiC_P hybrid MMCs at An Elevated Temperature Y. Q. Wang, A. M. Afsar, J. I. Song*
2.45pm	iCAT332 Sliding Wear Resistance of Al-Alloy Particulate Composites: An Assessment on its Efficacy Rupa Dasgupta
3.00pm	iCAT294 The wear resistance of in-situ TiC_p reinforced 7075 Al matrix composite B. Yang, M. Sun, F. Wang and X. Z. Cui
3.30pm	Afternoon Break <i>Duration: 15mins</i>
SESSION 3A: LUBRICATION I Venue: Venus II & III Chair: Liviu E. MIRCI	
3.45pm	iCAT129 Phase Transfer Synthesis and Tribology of Nanoparticle Barium Borate Zeshan Hu*, Xiaopin Wei, Jiao Zhaojie, Huayang Li, Zhongwen Ou, Jia Chen, Junchao Duan, Zhang Xianming
4.00pm	iCAT136 Tribological Studies on a Novel Borate Ester Containing Benzothiazol-2-yl and Disulfide Groups as Multifunctional Additive Jiusheng Li*, Xiaohong Xu, Yonggang Wang, Tianhui Ren
4.15pm	iCAT156 Characterisation of Antiwear Additives Subhash Sharma*, Doug Hargreaves, Will Scott
4.30pm	iCAT266 Effect of Surface Structure on Tribochemical Reaction of Additives Shigeyuki Mori*, Shin Matsudate, Hidetaka Nanao, Tomoo Kubo
4.45pm	iCAT354 ZDDP content in Mineral and Synthetic Motor Base Oils and its Effect on Electrostatic and Tribological Phenomena in a Rotating Shaft–Oil–Lip Seal System Juliusz B. Gajewski*, Marek J. Głogowski, Kazimierz Gatner, Marek Gawliński

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5.00pm	iCAT110 Evaluation of Electric Permittivity of Lubricating Oils in EHD Conditions Yuichiro Nagata, Marian Furtuna, Colin Bell, Romeo Glovnea*
SESSION 3B: TRIBOLOGY OF MATERIALS V Venue: Venus I Chair: Fei ZHOU	
3.45pm	iCAT109 Tribological Properties of Zirconium Alloys in a Hydrogen Gas Atmosphere Takashi Murakami*, Hiroki Mano, Katsuo Kaneda, Masayuki Hata, Shinya Sasaki, Joichi Sugimura
4.00pm	iCAT118 Influence of Tilt Angle of Plate on Friction and Transfer Layer – A Study of Aluminum Pin Sliding Against Steel Plate Pradeep L. Menezes, Kishore, Satish V. Kailas, M. S. Bobji*
4.15pm	iCAT123 High Temperature Sliding Wear and Friction Characteristics of Stainless Steel 316LN and CrN coating on SS 316LN in Vacuum Malayappan, S. *, Arul Raj. K., Venugopal.S.
4.30pm	iCAT195 Relative Wear Resistance Performance of Cryogenic Treated and Plasma Nitrided D-3 Tool steel N. B. Dhokey*, J. V. Dandawate, A. R. Deshmukh, J.A. Labade
4.45pm	iCAT196 Rolling Fatigue Strength and Surface Property of Fine Particle Bombarded Steel Y. Ohue*
5.00pm	iCAT230 Effect of Microstructure on Tribological Properties of Complex Slat Bath Nitrocarburized Low Carbon Steel Dongphill Lim*, Junghoon Kim, Dongseob Shim, Sangbeom Kim
SESSION 3C: BEARINGS I Venue: Jupiter II Chair: Yoshinori SAWAE	
3.45pm	iCAT087 Lubrication Performances of Plain Bearing by Oil Film Formation under Grease Lubrication Keigo Fukunaga*
4.00pm	iCAT100 Evaluation of Approaches for Material Selection in Hydrodynamic Bearings Pranab Samanta, Barun Chakrabarti*, S.V.Herwadkar
4.15pm	iCAT113 Biometric Bearing with Hydrated Materials Yoshitaka Nakanishi*, Tatsuki Takashimia, Hidehiko Higaki, Ken Shimoto, Takatoshi Umeno

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4.30pm	iCAT124 Tribological and RCF (Rolling Contact Fatigue) Effects of UNSM (Ultrasonic Nano Crystal Surface Modification) Treatment on the Bearings Young Shik Pyoun*, In Ho Cho, Chang Sik Kim, Jeong Hyun Park, Chang-Soon Lee, In Gyu Park, In Sik Cho, Jin Park
4.45pm	iCAT168 Correlation between Performance and Boundary Layers in Grease Lubricated High Speed Bearings Gatzen, M.M., Pape, F., Bruening, C., Gatzen, H.H., Arlinghaus, H.F., Poll, G.W.G.
5.00pm	iCAT169 Tribological Behavior of Sintered Steel Under Starved Lubrication in R600A Environment Kemal Sariibrahimoglu*, Huseyin Kizil, Mahmut F. Aksit, Ihsan Efeoglu, and Husnu Kerpicci
5.15pm	iCAT171 Study of Simulation Tester for Key Rubbing Pairs in Internal-combustion Engine Chengqing Yuan, Xinping Yan*, Zhenglin Liu, Chengqiang Zong, Xiuqin Bai
SESSION 3D: TRIBOLOGICAL TESTING Venue: Jupiter III Chair: Hervé PELLETIER	
3.45pm	iCAT041 Efficient Tribology Testing of Lubricating Oils and Greases N. Gitis, J.Xiao*
4.00pm	iCAT042 Nano and Micro Indentation and Scratch Tests of Thin Films and Coatings N. Gitis, I. Hermann, J. Xiao*
4.15pm	iCAT119 A Novel Tribometer for the Measurement of Friction in MEMS I. S. Y. Ku*, T. Reddyhoff, J. H. Choo, A. S. Holmes, H. A. Spikes
4.30pm	iCAT198 Acoustic Emission Generated in the Elementary Process of Wear Alan Hase*, Yuuki Sato, Hiroshi Mishina, Masaki Wada
4.45pm	iCAT220 Feature Oriented Characterization of Worn Surfaces for a sliding test Q. Hao*, D. Bianchi
5.00pm	iCAT291 Tribotest for Estimating the Lubrication Performance of Metalworking Fluids Takeshi Nogami*, Ken Nakano
5.30pm	Poster Presentation & Welcome Reception @ Level 5, Mercury I & II
8.00pm	End of Day 1

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DAY 2 THURSDAY, 4TH -DECEMBER 2008	
8.15am	Registration & Refreshments
KEYNOTE LECTURE Venue: Venus II & III	
8.45am	INVITED KEYNOTE 3 “Micro-Bubble Behaviors in Nano-Scale Lubricating Films under External Electric Field” <i>Jianbin LUO, Tsinghua University, China</i> Chair: Jun ZHANG
SESSION 4A: NANOTRIBOLOGY II Venue: Venus II & III Chair: Devaprakasam DEIVASAGAYAM	
9.15am	iCAT257 Interconnection Between The Contact Angle (Adhesion) Hysteresis, Slippage on a Nanorough Solid Wall and Photonic Friction Claudiu V. Suciu*, Hozumi Goto
9.30am	iCAT287 Occurrence of Stick-Slip and Schallamach Waves in Sliding Between Hard and Soft Surfaces Satoru Maegawa*, Ken Nakano
9.45am	iCAT365 The Effect of Baking Conditions on the Nanotribological Characteristics of PMMA Film Jung-Chul Heo*, Kwang-Seop Kim, Kyung-Woong Kim
10.00am	iCAT383 Nano-Tribology in Transmission Electron Microscope Anantheshwara.K, M.S.Bobji*
SESSION 4B: TRIBOLOGY OF COATINGS II Venue: Venus I Chair: Xing-Zhao DING	
9.15am	iCAT151 Tribotechnical characteristic of mono - and multilayer organic films Agabekov V. E. *, Zhavnerko G. K, Salamianski A. E., Marchyk N. A.
9.30am	iCAT017 Wear Characteristics of HVOF Deposited Cr₃C₂-NiCr and WC-CO Coatings by Using LPG as the Fuel Gas Hazoor S. Sidhu*, Buta S. Sidhu and S. Prakash
9.45am	iCAT392 Effects of Surface Wettability on Tribology of UHMWPE Film Coated Si Leong Yonghui Jonathan*, Myo Minn and Sujeet K. Sinha

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10.00am	iCAT176 Nanocomposite Protective Coatings Based on Ti-N-Cr/Ni-Cr-B-Si-Mo, Their Structure and Properties A.D.Pogrebnyak, * M.M.Danilionok, A.A.Drobyshevskaya, V.M. Beresnev, N.K.Erdybaeva, G.V.Kirik, S.N.Dub, V.S.Rusakov, V.V.Uglov, A.P.Shypylenko, P.V.Zukovski, Yu.N.Tuleushev
SESSION 4C: TRIBOLOGY OF MATERIALS VI Venue: Jupiter II Chair: Jayashree BIJWE	
9.15am	iCAT232 Dry Sliding Wear Behaviour of Al-7Si and Al-7Si-2.5Cu Cast Alloys K G Basava Kumar *, P G Mukunda, M Chakraborty
9.30am	iCAT263 Effect of amount of antimony on sliding wear resistance of white metal Sotomi Ishihara*, Kiyoshi Tamura, Takahito Goshima
9.45am	iCAT281 Sliding Friction Stabilities of Ti₃SiC₂ under Current-carrying conditions Zhenying Huang, Hongxiang Zhai, Mengqi Li
10.00am	iCAT208 Development of high wear resistant composites for pantograph sliders of railway current collector K. Shibata*, Y. Yao, T. Yamaguchi, J. Mishima, K. Hokkirigawa
SESSION 4D: BEARINGS II Venue: Jupiter III Chair: Patrick L. WONG	
9.15am	iCAT186 Stability Analysis of Rough Journal Bearing Under TEHL With Non-Newtonian Lubricants M. Mongkolwongrojn *, C. Aiumpornsin
9.30am	iCAT194 Rheodynamic Lubrication of a Squeeze Film Bearing With An Exponential Curvature Variation Using Herschel-Bulkley Lubricants K. P. Vishwanath, A. Kandasamy*
9.45am	iCAT268 The Effect of Coulomb Friction on the Static Performance of Foil Journal Bearings Dong-Hyun Lee*, Young-Cheol Kim, Kyung-Woong Kim
10.00am	iCAT283 Calculation of Dynamic Coefficients in a Misaligned Hydrodynamic Journal Bearing Considering Cavitation Sang-Ik Son*, Dong-Hyun Lee, Kyung-Woong Kim
10.15am	Morning Tea Break <i>Duration: 15mins</i>

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SESSION 5A: MICRO-TRIBOLOGY/CONTACT MECHANICS	
Venue: Venus II & III Chair: M. S. BOBJI	
10.30am	iCAT211 Tribological Behavior of High-density Polymer Brushes Prepared by "Grafting-from" Method Motoyasu Kobayashi, Masataka Kaido, Atsushi Suzuki, Kazuhiko Ishihara, Atsushi Takahara*
10.45am	iCAT271 Effect of Temperature on the Micro-Scale Adhesion and Friction Behaviors of Thermoplastic Polymer Film Kwang-Seop Kim, Jung-Chul Heo, Kyung-Woong Kim*
11.00am	iCAT386 In-Situ Microtribology With Local Resolution On SiO_x coated Polyethylene Wolfgang P. Weinhold*, Ralph Stengler, Thomas Schüßler
11.15am	iCAT371 Continuum Analysis of Atomistic Contacts Simon Medina, Daniele Dini*
11.30am	iCAT372 Effects of Simplified Energy Equation to the Solution of Temperature in Conformal Contacts Patrik Isaksson*, Roland Larsson
SESSION 5B: SURFACE TEXTURING	
Venue: Venus I Chair: Klaus FRIEDRICH	
10.30am	iCAT050 Surface Texturing Under Fluid Lubrication Containing Alumina Powder Sunggi Kim*, Kuenchul Song, Sangbeom Kim
10.45am	iCAT206 Preliminary Investigation on the Effect of Surface Texture at Line Contact Xiaolei Wang*, Wei Liu
11.00am	iCAT225 Effect of Surface Laser Texture on Friction Properties of Nickel-based Alloy Jianliang Li, Dangsheng Xiong*, Jihui Dai
11.15am	iCAT276 Tribological Properties of Laser Surface Textured Stainless Steel Under Lubrication Dangsheng Xiong*, Jianliang Li, Yi Wan, Yingying He, Jihui Dai
11.30am	iCAT357 The Study of Surface Topography and Friction on Side Walls of Mold for Nanoimprint Lithography Dariusz Jarzabek, Zygmunt Rymuza*, Hiroaki Kawata, Yoshihiko Hirai

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SESSION 5C: MODELLING/SIMULATIONS I/LUBRICATION	
Venue: Jupiter II Chair: Alexander M. KORSUNSKY	
10.30am	iCAT088 Development of Novel Clutch Utilizing Self-Locking Mechanisms of Belt Keiji Imado*, Hiroki Tominaga, Atsuyoshi Miura, Yasuaki Yamaguchi, Yasuhisa Sakaguchi, Tsuneo Kawagoe
10.45am	iCAT163 Modelling of Contact and Friction in Aluminium Extrusion X. Ma*, M. B. De Rooij, D. J. Schipper
11.00am	iCAT036 Assessing the Shelf Life of Synthetic Lubricants by Differential Scanning Calorimetry Paul A. Bessette*
11.15am	iCAT375 The influence of base oil polarity on the tribological performance of zinc dialkyldithiophosphate additives A. Naveira Suarez, Mattias Grahn, Rihard Pasaribu*, Roland Larsson
SESSION 5D: TRIBOLOGY IN MANUFACTURING PROCESSES II/ WEAR DEBRIS MONITORING	
Venue: Jupiter III Chair: S. K. ACHARYA	
10.30am	iCAT296 Wear Mechanisms of Multi-Coated WC Tools in Finish Turning of Inconel 718 Abhay Bhatt, Helmi Attia*, R. Vargas, V. Thomson
10.45am	iCAT340 Experimental Study on Hard Turning of Hardened Medium Carbon Steel with Uncoated Carbide Insert under MQL Condition N. R. Dhar*, Prianka B. Zaman, I. Sultana, S. K. Dey
11.00am	iCAT352 FCVA Technology: Innovation and Opportunities on Surface Treatment of Precision Molds Weihao, Shi Xu, Jin Xiaozhe
11.15am	iCAT364 Investigation of Some Factors Effective on Wear of the Chisel Ploughshare Manufactured in Turkey Yilmaz Bayhan, Poyraz Ulger, Bulent Eker*
11.30am	iCAT363 Inductive Coil Magnetometry for Ferrous Wear Debris Monitoring Zainudin Yahya Beng*, Tom Kent Beng
11.45am	Networking Lunch <i>Duration: 75mins</i>

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KEYNOTE LECTURE Venue: Venus II & III	
1.00pm	INVITED KEYNOTE 4 “Tribological Challenges in Micro-Systems” <i>John WILLIAMS, University of Cambridge, UK</i> Chair: Christina LIM
1.30pm	INVITED KEYNOTE 5 “Supertough nanocomposite coatings for high temperature wear protection” <i>Xianting ZENG, A*STAR Singapore Institute of Manufacturing Technology, Singapore</i> Chair: Christina LIM
SESSION 6A: LUBRICATION II Venue: Venus II & III Chair: Romeo GLOVNEA	
2.00pm	iCAT114 The Observation of Thick Boundary Layer Formed with Oleyl Acid Phosphate Under Boundary Lubricating Condition Takuma Imoto*, Fumihiro Itoigawa, Takashi Nakamura, Takashi Norihisa
2.15pm	iCAT289 Relationships Among Additive Molecular Structure, Residual Film Formation, and Boundary Lubrication Behavior Kazuyoshi Manabe*, Ken Nakano
2.30pm	iCAT233 Esters of Polyethylene Glycols and Oxyacids of Phosphorus as Lubricants and Processing Additives in Extrusion of LLDPE Oleg L. Kulikov*, Klaus Hornung, Manfred H. Wagner
2.45pm	iCAT370 Vegetable Oils As A Potential Cutting fluid - An Evolution Shashidhara.Y.M, Jayaram.S.R
SESSION 6B: TRIBOLOGY OF COATINGS III Venue: Venus I Chair: Hans H. GATZEN	
2.00pm	iCAT368 High temperature dry sliding wear behavior of nickel based hardfacing alloy deposited by plasma transferred arc welding D. Kesavan, M.Kamaraj*
2.15pm	iCAT255 Microstructural and Abrasive Characteristics of High carbon Fe-Cr-C Hardfacing Alloy Chia-Ming Chang*, Yen-Chun Chen, Weite Wu

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2.30pm	iCAT269 Nanostructured AlN/TiN Multilayers Grown by Reactive Sputtering or Ion Implantation of Al/Ti Multilayers M. Milosavljević*, D. Peruško, V. Milinović, S. Petrović, A. Zalar, J. Kovač, C. Jeynes
2.45pm	iCAT135 Wear Resistance of TiAlN and CrAlN Coatings deposited by lateral rotating cathode arc Xing-Zhao Ding*, X.T. Zeng
3.00pm	iCAT393 Effects of Air-Plasma Pre-Treatment of the Substrate and the Thickness of the Film on the Tribological Performance of UHMWPE\PFPE Films on Steel Surfaces Abdul Samad. M, N. Satyanarayana and Sujeet K Sinha*
SESSION 6C: TRIBOLOGY OF MATERIALS VII	
Venue: Jupiter II Chair: Jung-il SONG	
2.00pm	iCAT309 Sliding Wear and Friction Behaviour of 15Cr-15Ni-2Mo Titanium-Modified Austenitic Stainless Steel in High Temperature Liquid Sodium Hemant Kumar, V. Ramakrishnan, S.K. Albert, C. Meikandamurthy, P. Puthiyavinayagam, A.K. Bhaduri
2.15pm	iCAT316 Abrasive Wear Behaviour of SiCp/2014 Aluminium Composite Y.Sahin
2.30pm	iCAT321 The Abrasive Wear Resistance of TiC and (Ti, W) C-Reinforced Austenitic High Manganese Steel Matrix in-situ Composites Ashok Kumar Srivastava, Karabi Das*
2.45pm	iCAT353 Effect of Heat Treatment on Tribological Behaviour of Forged A1-6061 T.P. Bharathesh*, S.M. Verma, C.S. Ramesh, T.B.Prasad
3.00pm	iCAT360 Role of Different Metallic Fillers in Non-Asbestos Organic (NAO) Friction Composites for Sensitivity of μ to Load and Speed Mukesh Kumar, Jayashree Bijwe*
SESSION 6D: CONDITION MONITORING/LUBRICATION III	
Venue: Jupiter III Chair: Paul A. BESSETTE	
2.00pm	iCAT051 Vibration Pattern Recognition of Damages in Gears and Bearings Fred K. Choy* Chia-Hsuan Shen, Jie Wen
2.15pm	iCAT170 Study of Tribological Problems in Dredger Power Mechanical System X.P. Yan*, Y. H. Chen, A. N. Li, C. Q. Yuan

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2.30pm	iCAT027 Effects of Roughness Features on Lubrication Film Formation within Mixed Lubricated Contacts I. Krupka*, M. Hartl, P. Svoboda
2.45pm	iCAT174 Microstructural Investigation of Ice Surfaces After Rubber-Ice Friction Alex Klein-Paste*, Nirmal K. Sinha
3.00pm	iCAT373 Lubricant Ageing Effects on Wet Clutch Friction Characteristics Kim Berglund*, Pär Marklund, Roland Larsson
3.15pm	Afternoon Break <i>Duration: 15mins</i>
3.30pm ~ 9.00pm	<i>Tour and Conference Dinner at Jurong Bird Park</i>

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DAY 3 FRIDAY, 5TH -DECEMBER 2008	
8.15am	Registration & Refreshments
KEYNOTE LECTURE Venue: Venus II & III	
8.45am	INVITED KEYNOTE 6 “AFM Studies of Model Boundary Lubricants- Alkane Liquids Near a Graphite Surface” <i>Sean O’SHEA, A* STAR, Institute of Materials Research and Engineering, Singapore</i> Chair: Zeng KAIYANG
SESSION 7A: LUBRICATION IV Venue: Venus II & III Chair: Jian Huei CHOO	
9.15am	iCAT083 Synthetic Complex Esters as Tribological Fluids with Biodegradability Potential Liviu E. Mirci*
9.30am	iCAT096 Relation Between Low Temperature Fluidity and Sound Velocity of Lubricating Oil Sobahan Mia*, Nobuyoshi Ohno
9.45am	iCAT323 Drilling with Minimal Quantity of Lubricant Rodrigo Panosso Zeilmann*, Frank Patrick Missell, Alfredo Tomé, Mauricio Calza, Anderson Antonioli
SESSION 7B: BEARINGS III Venue: Venus I Chair: Helmi ATTIA	
9.15am	iCAT 285 Study on Effects of Axial Unbalance on Load Capacity of Radial No-friction Passive Magnetic Bearings Shichao Xiu*, Qingchang Tan
9.30am	iCAT290 The Study of ER Fluid Lubricated Misaligned Hole-Entry Hybrid Journal Bearing J. Sharana Basavaraja*, Satish C. Sharma, Satish C. Jain
9.45am	iCAT311 Analysis of EHL Considering the Number of Rolling Elements and the Shaft Load in Ball and Roller Bearings Sung-Ho Hong, Dong-Hyun Lee, Kyung-Woong Kim*
10.00am	iCAT324 Wear Properties of DLC Coated Steel Rollers Running under Highly Contaminated Lubrication F. He, P.L. Wong*, X. Zhou

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SESSION 7C: MODELLING/SIMULATION II	
Venue: Jupiter II Chair: Daniele DINI	
9.15am	iCAT235 Application Of A Low Latency Cluster Computing for Air Bearing Analysis Nenzi Wang* , Chia-Wen Chan, Shih-Hung Chang
9.30am	iCAT252 Proposal and Application of Walking Mode Maps T. Yamaguchi* , K. Hokkirigawa
9.45am	iCAT374 Modeling and Simulation of Thermal Effects in Wet Clutches Operating under Boundary Lubrication Conditions Pär Marklund* , Roland Larsson
10.00am	iCAT376 Approaches to Experiment Based Friction Modeling: Polynomial Approximation versus ANN Approximation Jacek Lubinski* , Szymon Grymek, Krzysztof Druet
SESSION 7D: BEARINGS IV	
Venue: Jupiter III Chair: Mongkol MONGKOLWONGROJN	
9.15am	iCAT325 Full/Partial Boundary Slippage Effect on Squeeze Film Bearings P.L.Wong* , F. Guo
9.30am	iCAT053 Welding Capability of Tribological Optimized Polyetheretherketone Composites with Metallic Substrates T. Bayerl* , A. K. Schlarb
9.45am	iCAT312 Stability analysis of 5–Axial Groove Water Lubricated Journal Bearings R.S.Pai* , Rajnish Kumar, D.S.Rao, R.Pai
10.00am	iCAT313 Non-Linear Transient Analysis of Five Axial Groove Water Lubricated Journal Bearing R.S.Pai* , D.S.Rao, R.Pai
10.15am	Morning Tea Break <i>Duration: 15mins</i>
SESSION 8A: BIO-TRIBOLOGY II/NANOTRIBOLOGY III	
Venue: Venus II & III Chair: Yen-Shuo Peter LIAO	
10.30am	iCAT286 Estimation of Tactile Sensation of Cosmetic Foundation From Sliding and Oscillating Tests Keita Horiuchi* , Akio Kashimoto, Ryuta Tsuchiya, Masahito Yokoyama, Ken Nakano

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10.45am	iCAT280 Influence of Photoelectric Stimulation with Different Spectrum on Sliding Friction Behaviors of Locusts on a Slippery Plates Wang LiXin, Zhang Xin, Zhou Qiang*, Niu HuLi
11.00am	iCAT288 Investigation of the Vibration Detectability of Human Fingers Supported by the Observation of Contact Zones Toshiharu Soneda*, Ken Nakano
11.15am	iCAT306 Influence of Microstructure and Texture on the Corrosion and Tribocorrosion Behaviour of TI6AL4V in 1% Sodium Chloride Solution Étienne Martin*, Marwan Azzi, Jerzy Szpunar
11.30am	iCAT389 Friction Measurement Between Polyester Fibers using the Fibre Probe SPM Hiroyasu Mizuno*, Mikael Kjellin, Niklas Nordgren, Torbjörn Pettersson, Viveca Wallqvist, Matthew Fielden, Mark Rutland
SESSION 8B: TRIBOLOGY OF COATINGS IV Venue: Venus I Chair: Nalam SATYANARAYANA	
10.30am	iCAT303 WC/DLC Under Lubricated Extreme Pressure Condition: Understanding Interaction and Its Influence on Performance K. K. Mistry*, A. Morina, A. Neville, T. Haque, M. N. Webster
10.45am	iCAT361 Dissipated energy and Friction Coefficient Evolution During Fretting Wear of Solid Lubricant Coatings Alexander M. Korsunsky*, Kyungmok Kim
11.00am	iCAT295 High Temperature Erosion Behavior of Detonation Gun-Sprayed Alumina/Titania Coatings under Simulated Coal-Fired Boiler Atmospheres Pawan Kumar Sapra, Surendra Singh, S. Prakash*, Arivazhagan N
11.15am	iCAT326 Behaviour of Erosion and Adhesion of Elastic Polymer Coating on Concrete Zhong Ping, Liao You-Wei, Li Jian*
11.30am	iCAT359 Investigation of Erosion Wear Behaviour of Mullite Coating at Elevated Temperatures Garip Erdogan*, Fatih Ustel, Ekrem Altuncu
SESSION 8C: TRIBOLOGY OF MATERIALS VIII Venue: Jupiter II Chair: Christina LIM	
10.30am	iCAT055 Parametric Study on Balance Ratio of Mechanical Face Seal in Steam Environment S. S. Goilkar*, H. Hirani

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10.45am	iCAT355 Microstructural evolution during high temperature sliding of Al and Mg alloys S. Das, A. T. Morales, A. T. Alpas*
11.00am	iCAT358 Microstructures, Mechanical and Tribological Properties of Cast In-Situ Composites: Al(Mg,Mn)-Al₂O₃(MnO₂) and Al(Mg,Ti)-Al₂O₃(TiO₂) Composites AbdulhaQQ A. Hamid
11.15am	iCAT200 Friction and Wear Properties of New Hard Porous Carbon Material “Rice Husk Ceramics” D. Tuvshin*, T. Yamaguchi, K. Hokkirigawa
SESSION 8D: SURFACE ENGINEERING/INDENTATION/SCRATCHING Venue: Jupiter III Chair: Zeng KAIYANG	
10.30am	iCAT064 Effect of Trace Element Surface Segregation on Tribological Behaviour of Pure Aluminum Esma Şenel*, Mustafa Ürgen, Kemal Nişancıoğlu
10.45am	iCAT347 Role of Friction During Indentation and Scratch Experiments into Amorphous Polymer Surfaces H. Pelletier*, C. Gauthier, R. Schirrer
11.00am	iCAT348 Micro and Nano-Indentation Creep of Amorphous Polymers During Spherical Contact T. Chatel*, H. Pelletier, C. Gauthier, C. Fond, R. Schirrer
11.15am	iCAT349 In situ observations of multi-pass scratching of poly(methylmethacrylate) H. Pelletier*, C. Gauthier, R. Schirrer
11.30am	iCAT299 Chemical and Physical Characteristics of ZDDP and MoDTC Tribofilms Formed on Al-Si Alloy/Cast Iron Tribocouples X.Xia, A.Morina, A.Neville, M.Priest, R.Roshan, C. P. Warrens, M. J. Payne
11.45am	Networking Lunch <i>Duration: 75mins</i>
2.00pm	<i>End of iCAT 2008 Conference</i>

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LIST OF POSTER PRESENTATIONS

Date: Wednesday 3rd December 2008

Time: 6.00pm – 8.00pm

iCAT003

Effect of Friction and Aspect Ratio on Flow Behaviour of AL-CU Alloys During Cold Upset Forging and FEA Modeling

J Babu Rao*, Syed Kamaluddin, J Appa Rao, MMM Sarcar, NRMR Bhargava

iCAT019

Sliding Wear Behaviour of WC-Coated Al-ZrB₂ In Situ Composite

S.P.Kumaresh Babu*, K. Siva Prasad S. Senthil Kumaran, S.Jerome, S.Natarajan

iCAT020

Tribological Properties of a New Type of Semi-Liquid Grease with Zn and Sn-Zn compound

Yun-hui Mo*, De-hua Tao, Shuai-bao Wang, Xi-cheng Wei, Li-ming Zhang

iCAT023

Tribo-Corrosion Evaluation of Magnesium (ZE41A) Alloy in Aqueous Solution

E. Husain*, R. Griffins, H.Liang

iCAT033

Adhesion of Bodies and Friction Force

Arkady M. Fridberg*

iCAT062

Studies on the Effects of Wall Friction and Surface Roughness Upon Compaction Strength of *Andrographis Paniculata* Herb

S. K. Ng, Y. A. Yusof, N. L. Chin, R. A. Talib

iCAT063

Scratch and Indentation Tests on Seashells

H. M. Leung*, Sujeet K. Sinha

iCAT066

Erosive Wear Behaviors of 316L and 13CR24Mn0.44N Austenitic Stainless Steel in Seawater with Sand

G.H. Zhou, H.Y. Ding*

iCAT067

Tribological Behaviors of Micro-Arc Oxidation Film of 2024Al in Different Aqueous

Ding Hong-yan, Dai Zhen-dong

iCAT069

Minimum Quantity Lubricant in Grinding- Feasibility Analyze

Yali Hou, Changhe Li*, Yucheng Ding

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iCAT079

New LDH-Biopolymer Nanocomposite: Preparation and Properties

Yuejin Tong*, Huaimin Guan, Shaofeng Wang, Xianzheng Zhang

iCAT082

Finite Element Analysis of The Effect of Friction Factor On the Drawability

Dr.G.Chandra Mohan Reddy*, P.V.R.Ravindra Reddy, Dr.T.A.Janardhan Reddy

iCAT086

Tool Wear Studies in High Speed Machining of iNCONEL 718 Using Tungsten Carbide (K20) Insert

D. G. Thakur*, B. Ramamoorthy, L. Vijayaraghvan

iCAT091

Study of preparation and tribological properties of rare earth nanoparticle in lubricating oil

Rende Liu*, Xicheng Wei, Dehua Tao, Yuan Zhao

iCAT107

Effect of Surface Roughness and Lubrication on Friction in Micro Cutting

Kazutoshi Nakamura, Fumihiro Itoigawa*, Takashi Nakamura

iCAT108

Investigation into Undesirable Failure of Carbide Tool Materials Due to Instability of Friction In Cross-Pin Friction Test

Akihiro Osawa, Fumihiro Itoigawa*, Takashi Nakamura

iCAT121

Tribology Behaviors and Corrosion Resistance of LY12CZ Aluminum Alloys by Nitrogen PIII Process

Hongxi Liu*, Rong Zhou, Yehua Jiang, Baoyin Tang

iCAT131

Synthesis and Tribology of Zinc Alkoxyborate

Zeshan Hu*, Xiaopin Wei, Jiao Zhaojie, Ping Yu, Zhongwen Ou, Huayang Li, Zhang Xianming, Qiang Cai,

iCAT139

Characterization of Friction and Wear of Waste Vegetable Oil Contaminated Lubricant by Using Fourball Machine

M.A.Kalam*, H.H.Masjuki, R. Zuzailie

iCAT177

Physico-Mechanical and Physico-Chemical Ti-Al-N/Ni-Cr-Mo-B-Si Characteristics in Nanocomposite Combination Coatings

A.D.Pogrebnyak*, V.V.Uglov, M.M.Danilionok, F.F.Komarov, N.K.Erdybaeva, S.Dub,A.P.Shyplyenko, P.V.Zukovskii, G.V.Kirik, M.K.Kylyshkanov

iCAT184

Tribological Evaluation of Graphite Nano OILs with Various Kinematic Viscosities

M. Park, C. Lee, Y. Hwang, Y. Choi, J. Lee*

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iCAT185

Tribological Characteristics of Nano Lubricants with Different Surface Hardness of Sliding Members

Youngechol Han, Boncheol Ku, Changgun Lee, Yujin Hwang, Jaekeun Lee *

iCAT188

Ultra-Fine Structure and Nanocrystalline of Tribologically-Induced Metal Surfaces

Hiroataka Kato *, Masato Sasase, Nobuaki Suiya

iCAT209

The Effect of Load Carrying on the Traction Coefficient between Shoe Sole and Floor during Walking

T. Yamaguchi *, H. Yamanouchi, K. Hokkirigawa

iCAT213

Sliding wear of Cu-15Ni-8Sn and C17200 Beryllium-copper alloys

Shao-Zong Zhang *, Bo-Hong Jiang, Wen-Jiang Ding

iCAT240

A Comparison between Output Observers and Particle Filters for Detecting Faults of a CSTR

Behruz Khajali, Javad Poshtan, Majid Poshtan *

iCAT256

Frictional Torque of Needle Roller Thrust Bearings – Experimental Investigation

Tetsuzo Hatazawa *, Takahisa Kawaguchi

iCAT272

Prediction of Surface Parameters for Strain Hardening Material of Asperity Flattening in Metal Forming

T. S. Yang *, S. Q. Lee

iCAT273

A Refined Friction Modeling for Lubricated Deep Drawing Process

T. S. Yang *

iCAT282

A New Friction Model Based on the Surfaces Contacting Mechanism

Chen Hsieh *, Cang-Chin Yang, Yan-Fong Chen, Sen-Yung Lee

iCAT304

Investigation of Laminated Fabric Cages Used in Rolling Bearings by ToF-SIMS

U. Gunst *, W.-R. Zabel, G. Poll, H.F. Arlinghaus

iCAT341

Development of Lubricating Standards using Total Productive Maintenance (TPM)

Ravikumar K P *, Dr.M.S.Prabhu swamy, Dr. P. Nagesh

iCAT344

Thermal Analysis of Journal Bearings in Lubricated Conditions

Sangdon Lee *, Myunghwan Kim, Taewan Kim, Yongjoo Cho

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iCAT351

FCVA Cr Vacuum Coating – An Ideal “Green” Replacement of Electric Plating

Jin Xiaozhe, Shi Xu*, Weihao, Hu Xiaohong

iCAT356

A New Method for Broken Rotor Bars Detection VIA Virtual Loading

S. Masoud Shams Mosavi, Javad Poshtan, Majid Poshtan*

iCAT366

High Temperature Erosion Behaviour of Thermal Barrier Coatings

Ekrem Altuncu, Garip Erdogan, Fatih Üstel

iCAT378

Wear and Friction Characteristics of Palm Oil Lubrication on Diamond-Likecarbon Coating over NI-Resist Cast Iron

M. Husnawan*, H.H. Masjuki, T.M.I. Mahlia, M.G. Saifullah, M.A. Fazal

iCAT379

Study on Tribological Performance of palm Oil Based Biofuel

M.A. Fazal*, M.I. Jahirul, M. Husnawan, A. S. M. A. Haseeb, H. H. Masjuki

iCAT385

Studying the Effects of Boronizing Process on the Characteristics of Materials at Tractor Plough

B. Eker*, A.Akdoğan Eker

iCAT387

Wear Behaviour of Heat Treated Near-Equiatomic Ti–Ni Alloy

R. Aliasgarian, H. M. Ghasemi*

iCAT388

Effect of Aging on Tribological Behaviour of Ni-Rich Ti–Ni Alloys

R. Aliasgarian, H. M. Ghasemi*

iCAT390

Studies on the Thin Film Characteristics of A Zr-Based Metallic Glass Fabricated by Magnetron Sputtering Process

C. W. Chu*, Jason S. C. Jang, S M. Chiu