

## TECHNICAL SESSION

Thursday, June 7, 2012

**Room:** Le Concorde Ballroom

### Plenary Lectures

- 09:15 – 10:00 PL-01 **Materials Research for Green Innovation and Critical Materials**  
**Prof. Teruo Kishi**  
*Advisor, National Institute for Materials Science (NIMS), Former NIMS President, Japan*
- 10:00 – 10:45 PL-02 **Innovations in Materials Science and Engineering: From Research to Market**  
**Prof. Merton C. Flemings**  
*Toyota Professor Emeritus and Director of the Lemelson-MIT Program, USA.*
- 10:45 – 11:00 Refreshment

**Room:** Rachavadee

**Session:** Advanced Ceramic Materials 1

**Session Chair:** Dr. Thammarat Panyathanmaporn

*National Metal and Materials Technology Center*

- 11:00 – 11:30 ACM-I-01 **Magnetic and Composite Nanostructures for Advanced Applications**  
**Assoc. Prof. Dr. Santi Maensiri**  
*Suranaree University of Technology*
- 11:30 – 11:50 ACM-OP-01 **Synthesis of SnO<sub>2</sub> Nanoparticles: Toward Greener Chemistry**  
**Niti Yongvanich**  
*Materials Science and Engineering,  
Faculty of Engineering and Industrial Technology,  
Silpakorn University*
- 11:50 – 12:10 ACM-OP-02 **Preparation of Nanometer-sized CuO Powders**  
**Sakollapath Pithakratanayothin**  
*Department of Chemistry, Faculty of Science, King  
Mongkut's Institute of Technology Ladkrabang*
- 12:10 – 13:30 Lunch & Exhibition

**Room:** Rachavadee  
**Session:** Advanced Ceramic Materials 2  
**Session Chair:** Dr. Pitak Laoratanakul  
*National Metal and Materials Technology Center*

- 13:30 – 13:50 ACM-OP-03 **Modifying the Ferroelectric Properties of  $\text{Ba}_5\text{HoTi}_3\text{V}_7\text{O}_{30}$  by Making Solid Solution with  $\text{BiFeO}_3$**   
**Cancelled**  
**Anuradha Panigrahi**  
*Department of Physics, D.N College, India*
- 13:50 – 14:10 ACM-OP-04 **Synchrotron Small Angle X-ray Scattering Spectra of Iron-based Magnetic Fluids**  
**Komkrich Chokprasombat**  
*Molecular Technology Research Unit,  
School of Science, Walailak University*
- 14:10 – 14:30 ACM-OP-05 **Characterizing Plant Fiber Orientation in Fiber Cement by Impedance Spectroscopy**  
**Supaporn Wansom**  
*National Metal and Materials Technology Center*
- 14:30 – 14:50 ACM-OP-06 **Fire Resistance of Self-compacting Mortar made from Ternary Cement-based Blends with Rice Husk Ash and Alumina Waste**  
**Cancelled**  
**Natt Makul**  
*Department of Construction Technology,  
Faculty of Industrial Technology,  
Phranakhon Rajabhat University*
- 14:50 – 15:20 Refreshment & Poster Session 1

**Room:** Rachavadee  
**Session:** Advanced Ceramic Materials 3  
**Session Chair:** Dr. Bralee Chayasombat  
*National Metal and Materials Technology Center*

- 15:20 – 15:40 ACM-OP-07 **Raman Study of GaN Films grown on (001)- and (110)-oriented GaAs Substrates by Different Excited Wavelengths of 514.5 and 633 nm**  
**Pitshaya Praigaew**  
*Department of Physics, Faculty of Science, Chulalongkorn University*
- 15:40 – 16:00 ACM-OP-08 **Raman Spectroscopy of Selective Area Grown Cubic GaN on GaAs (001) by MOVPE**  
**Pattana Suwanyangyaun**  
*Nanoscience and Technology, Graduate School, Chulalongkorn University*
- 16:00 – 16:20 ACM-OP-09 **Effects of Hexagonal-Phase Inclusion in Cubic GaN Buffer on Cubic InN Layer Grown on MgO (001) Investigated by TEM**  
**Jamreonta Parinyataramas**  
*Nanoscience and Technology, Graduate School, Chulalongkorn University*
- 16:20 – 16:40 ACM-OP-10 **Effect of Low-Pressure Microwave Plasma Cleaning on Silicon Surface: AES and Contact Angle Studies**  
**Piti Sinnuntasen**  
*Laser and Surface Physics Research Laboratory, Department of Applied Physics, Faculty of Science, King Mongkut's Institute of Technology Lardkrabang*

**Room:** Krisana  
**Session:** Biomedical Materials and Devices 1  
**Session Chair:** Dr. Jintamai Suwanprateeb  
*National Metal and Materials Technology Center*

- 11:00 - 11:30 BMD-I-01 **Fabrication of Bioceramics Implants by Using Stereolithographic Modeling and Nanoparticles Sintering**  
**Assoc. Prof. Dr. Soshu Kirihara**  
*Smart Processing Research Center,  
Joining and Welding Research Institute,  
Osaka University, Japan*
- 11:30 - 11:50 BMD-OP-01 **Development of a Special-Purpose, Fast-Absorbable Synthetic Monofilament Suture for Use in Surgery**  
**Robert Molloy**  
*Biomedical Polymers Technology Unit,  
Department of Chemistry and Materials Science  
Research Center, Faculty of Science, Chiang Mai  
University*
- 11:50 - 12:10 BMD-OP-02 **Modifying Poly(DL-lactic acid) Matrix Film Properties with High Loaded Poly(ethylene glycol)**  
**Sasiprapa Chitrattha**  
*Department of Pharmaceutical Technology,  
Faculty of Pharmacy, Silpakorn University*
- 12:10 – 13:30 Lunch & Exhibition

**Room:** Krisana  
**Session:** Biomedical Materials and Devices 2  
**Session Chair:** Dr. Jintamai Suwanprateeb  
*National Metal and Materials Technology Center*

- 13:30 – 13:50 BMD-OP-03 **Mechanical Properties of PLA/HA Composite:  
Cancelled Injection Molding Process**  
**Thaweekarn Changthong**  
*Department of Industrial Engineering,  
Faculty of Engineering, Chiang Mai University*
- 13:50 - 14:10 BMD-OP-04 **Effect of Zn Addition on Sol-Gel Derived  
Apatite/Wollastonite Glass-Ceramics Scaffolds**  
**Sirirat Rattanachan**  
*School of Ceramic Engineering,  
Suranaree University of Technology*
- 14:10 - 14:30 BMD-OP-05 **Effects of Fabrication Method and TiO<sub>2</sub>  
Addition on Properties of Modified Biphasic  
Calcium Phosphate Ceramics**  
**Witoon Thepsuwan**  
*National Metal and Materials Technology Center*
- 14:30 - 14:50 BMD-OP-06 **Using Amphiphilic Homopolymer-based  
Nanoassemblies and MALDI-MS for the  
Detection of Peptides/Protein Biomarkers  
in Human Serum**  
**Nadnudda Rodthongkum**  
*Metallurgy and Materials Science Research  
Institute, Chulalongkorn University*
- 14:50 - 15:20 Refreshment & Poster Session 1

**Room:** Krisana  
**Session:** Biomedical Materials and Devices 3  
**Session Chair:** Dr. Katanchalee Mai-ngam  
*National Metal and Materials Technology Center*

- 15:20 - 15:40 BMD-OP-07 **Virgin Coconut Oil Containing Injectable Vehicles for Ibuprofen Sustainable Release**  
**Sumuntana Anuchatkidjaroen**  
*Department of Pharmaceutical Technology,  
Faculty of Pharmacy, Silpakorn University*
- 15:40 - 16:00 BMD-OP-08 **The Development of Carboxymethyl-dextran Chips for BMP-2 Detection using Surface Plasmon Resonance Technique**  
**Jitlada Sansatsadeekul**  
*National Metal and Materials Technology Center*
- 16:00 - 16:20 BMD-OP-09 **Identification of Defect on Phosphoric Etched Dentin Restored with Contemporary 3-step Adhesives**  
**Sudararat Nubdee**  
*Department of Prosthodontics,  
Faculty of Dentistry, Chulalongkorn University*

**Room:** Jamjuree  
**Session:** Materials for Energy and Environment 1  
**Session Chair:** Dr. Manida Tongroon  
*National Metal and Materials Technology Center*

- 11:00 – 11:30 MEE-I-01 **Nano-sized Cu-base Photocatalysts**  
**Prof. Nguyen Quang Liem**  
*Director of Institute of Materials Science (IMS),  
Vietnam*
- 11:30 – 11:50 MEE-OP-01 **Cu-ZnO Nanocatalysts for Methanol Steam  
Reformation**  
**Supamas Danwittayakul**  
*Center of Excellence in Nanotechnology,  
Asian Institute of Technology  
and National Metal and Materials Technology  
Center*
- 11:50 – 12:10 MEE-OP-02 **Energy Density Enhancing of Poly(vinylidene  
fluoridechlorotrifluoroethylene) Ferroelectric  
Thin Films by Crosslinking**  
**Paisan Khanchaitit**  
*Department of Materials Science and Engineering,  
The Pennsylvania State University, USA*
- 12:10 – 13:30 Lunch & Exhibition

**Room:** Jamjuree  
**Session:** Materials for Energy and Environment 2  
**Session Chair:** Dr. Sumittra Charojrochkul  
*National Metal and Materials Technology Center*

- 13:30 – 13:50 MEE-OP-03 **Half-Cell Fabrication of Protonic Ceramic Fuel Cell Using Y-Doped Barium Zirconate as Electrolyte by Electrostatic Spray Deposition**  
**Tanaporn Yoomanthamma**  
*Research Unit of Advanced Ceramics,  
Department of Materials Science, Faculty of  
Science and Center for Petroleum, Petrochemicals  
and Advanced Materials, Chulalongkorn  
University*
- 13:50 – 14:10 MEE-OP-04 **Ni<sub>1-x</sub>Co<sub>x</sub>/(Gd<sub>2</sub>O<sub>3</sub>-CeO<sub>2</sub>) Anodes for Solid Oxide Fuel Cells**  
**Jiratchaya Ayawanna**  
*Department of Materials Science,  
School of Science, Mae Fah Luang University*
- 14:10 – 14:30 MEE-OP-05 **Development of Porous Conducting Polymer for Use in Microfuel Cells**  
**Korakot Sombatmankhong**  
*National Metal and Materials Technology Center*
- 14:30 – 14:50 MEE-OP-06 **Characterization of CNT based Supercapacitor Electrode developed on First Principle Growth**  
**Munesh Chandra Adhikary**  
*PG Department of Applied Physics and Ballistics,  
F.M. University, India*
- 14:50 – 15:20 Refreshment & Poster Session 1



**Room:** Jamjuree  
**Session:** Materials for Energy and Environment 3  
**Session Chair:** Dr. Nuwong Chollacoop  
*National Metal and Materials Technology Center*

- 15:20 – 15:40 MEE-OP-07 **Utilization of Rice Husks as Biomass Resource in Myanmar**  
**Junko Umeda**  
*Joining and Welding Research Institute,  
Osaka University, Japan*
- 15:40 – 16:00 MEE-OP-08 **Simultaneous Production of High Yield Oil and Animal Feed from Toxic *Jatropha Curcus* Meal**  
**Vittaya Punsuvon**  
*Department of Chemistry, Faculty of Science,  
Kasetsart University*
- 16:00 – 16:20 MEE-OP-09 **Effect of Operating Parameters on Product Yields of Rice Husk Pyrolysis in a Wire-mesh Reactor**  
**Yatika Somrang**  
*National Metal and Materials Technology Center*
- 16:20 – 16:40 MEE-OP-10 **Influence of Biodiesel in Ethanol-Diesel Fuel Blends on Fuel Properties**  
**Kiatkong Suwannakij**  
*National Metal and Materials Technology Center*

**Room:** Salon B  
**Session:** Material Reliability 1 (Heat Treatment & Wear)  
**Session Chair:** Dr. Panadda Sheppard  
*National Metal and Materials Technology Center*

- 11:00 – 11:20 MR-OP-01 **Quantitative Analysis of Retained Austenite in Tool Steel using X-ray Diffraction**  
**Suphakan Kijamnajsuk**  
*National Metal and Materials Technology Center*
- 11:20 – 11:40 MR-OP-02 **Tribological Properties of Titanium Plate Coated with Carbon Nanotubes**  
**Junko Umeda**  
*Joining and Welding Research Institute,  
Osaka University, Japan*
- 11:40 – 12:00 MR-OP-03 **Tribological Properties of PM Cu-based Dry Friction Clutch**  
**Jirapat Prapai**  
*Automotive Engineering, International College,  
King Mongkut's Institute of Technology  
Ladkrabang*
- 12:00 – 13:30 Lunch & Exhibition

**Room:** Salon B  
**Session:** Material Reliability 2 (Coating)  
**Session Chair:** Dr. Panadda Sheppard  
*National Metal and Materials Technology Center*

- 13:30 – 13:50 MR-OP-04 **Injection Moulding of Tungsten Carbide-Nickel Powders Prepared by Electroless Deposition**  
**Nutthita Chuankrerkkul**  
*Metallurgy and Materials Science Research Institute, Chulalongkorn University*
- 13:50 – 14:10 MR-OP-05 **Effects of N<sub>2</sub> Flow Rate on Structures of TiVN Coatings Prepared by Reactive DC Magnetron Co-Sputtering Method**  
**T. Deelearn**  
*Department of Physics, Faculty of Science, King Mongkut's University of Technology Thonburi*
- 14:10 – 14:30 MR-OP-06 **Characterization of WC-12Co/MWCNT Powders synthesized by Chemical Vapor Deposition**  
**Tipsuda Promruksa**  
*Department of Physics and Materials Science, Faculty of Science, Chiang Mai University*
- 14:30 – 14:50 MR-OP-07 **Influence of Nitrogen Concentrations on Structural and Optical Properties of AlN Films deposited by Reactive RF-Magnetron Sputtering without Substrate Heating**  
**Amorn Thedsakhulwong**  
*Laser and Surface Physics Research Laboratory, Department of Physics, Faculty of Science, King Mongkut's Institute of Technology Ladkrabang*
- 14:50 – 15:20 Refreshment & Poster Session 1

**Room:** Salon B  
**Session:** Material Reliability 3 (Corrosion 1)  
**Session Chair:** Dr. Ekkarut Viyanit  
*National Metal and Materials Technology Center*

- 15:20 – 15:40 MR-OP-08 **Proper Heat Treatment to Reduce Intergranular Corrosion Susceptibility of Austenitic 304 and Ferritic 430 Stainless Steels**  
**Piyanun Punburi**  
*Division of Materials Technology,  
School of Energy, Environment and Materials,  
King Mongkut's University of Technology Thonburi*
- 15:40 – 16:00 MR-OP-09 **The Study of Corrosion Rate among Welding Zones of Hastelloy X**  
**Paisan Thongsong**  
*Welding Engineering Program, Faculty of Engineering, King Mongkut's University of Technology Thonburi*  
**Cancelled**
- 16:00 – 16:20 MR-OP-10 **Effect of Chromium Nitrides on Corrosion Resistance of 2507 Superduplex Stainless Steels**  
**Namurata Sathirachinda**  
*National Metal and Materials Technology Center*
- 16:20 – 16:40 MR-OP-11 **Failure Analysis of Inlet Coil for a Hydrocarbon Cracking Furnace**  
**Siriwan Ouampan**  
*National Metal and Materials Technology Center*
- 16:40 – 17:00 Refreshment

**Room:** Salon B  
**Session:** Material Reliability 4 (Corrosion 2)  
**Session Chair:** Dr. Ekkarut Viyanit  
*National Metal and Materials Technology Center*

- 17:00 – 17:20 MR-OP-12 **Capsicum Annuum Fruit Extract for the Corrosion Inhibition of Mild Steel in Acid Environment**  
**Gopal Ji**  
*School of Materials Science and Technology,  
Institute of Technology, Banaras Hindu University,  
India*
- 17:20 – 17:40 MR-OP-13 **Studies on Potentiodynamic Polarization Behavior of Cryorolled Al-Mg-Si Alloy**  
**Naga Krishna Nandivelugu**  
*Advanced Materials Processing Laboratory,  
Department of Metallurgical and Materials  
Engineering, National Institute of Technology  
Tiruchirappalli, India*
- 17:40 – 18:00 MR-OP-14 **Cathodic Protection Design by Numerical and Physical Models**  
**Wanida Pongsaksawad**  
*National Metal and Materials Technology Center*

**Room:** Sakthong  
**Session:** Metals, Alloys and Intermetallic Compounds 1  
(Nanocomposite)  
**Session Chair:** Dr. Anchalee Manonukul  
*National Metal and Materials Technology Center*

11:00 - 11:30 M-I-01 **Carbon Nanotubes Reinforced Titanium Powder Composite Materials**  
**Prof. Dr. Katsuyoshi Kondoh**  
*Joining and Welding Research Institute, Osaka University, Japan*

11:30 - 11:50 M-OP-01 **Synthesis of Bulk Metal Matrix Nano Composites by Full Cavitation Solidification Method**  
**Payodhar Padhi**  
*Konark Institute of Science and Technology, India*

11:50 - 13:30 Lunch & Exhibition

**Room:** Sakthong  
**Session:** Metals, Alloys and Intermetallic Compounds 2  
(Solidification & Casting)  
**Session Chair:** Dr. Sompong Srimanosawapak  
*National Metal and Materials Technology Center*

13:30 - 13:50 M-OP-02 **Influence of Casting Techniques on Hardness, Tarnish Behavior and Microstructure of Ag-Cu-Zn-Si Sterling Silver Jewelry Alloys**  
**Chutimun Chanmuang**  
*Faculty of Gems, Burapha University, Chanthaburi Campus*  
**Cancelled**

13:50 - 14:10 M-OP-03 **Surface Layer Formation in High-Pressure Die Castings**  
**Somboon Otarawanna**  
*National Metal and Materials Technology Center*

- 14:10 - 14:30 M-OP-04 **Investigation of Defect and Microstructure of AC2A Thixocasting Component**  
**Worawat Parasil**  
*Department of Mechanical Engineering,  
Faculty of Engineering, King Mongkut's University  
of Technology Thonburi*
- 14:30 - 14:50 M-OP-05 **Indirect Squeeze Casting Process of Auto Part**  
**Ekkachai Kittikhewtraweeserd**  
*Faculty of Engineering,  
King Mongkut's University of Technology Thonburi*
- 14:50 - 15:10 M-OP-06 **Macro Structure Modeling of Al-20 % Sn Alloy**  
**Payodhar Padhi**  
*Konark Institute of Science and Technology, India*
- 15:10 - 15:30 M-OP-07 **Study of Particle Distribution in Al-SiC  
Particulate Composites by Random Motion  
of Mold**  
**Sachi Kanta Kar**  
*Central Tool Room Training Center, India*
- 15:30 - 16:00 Refreshment & Poster Session 1

**Room:** Sakthong

**Session:** Metals, Alloys and Intermetallic Compounds 3  
(PM & MIM)

**Session Chair:** Dr. Yuttanant Boonyongmaneerat  
*Chulalongkorn University*

- 16:00 - 16:20 M-OP-08 **Effects of Sintering Time and Atmosphere on  
Mechanical Properties of Injection Molded  
Tungsten Alloy**  
**Jittrabhanu Lamlertham**  
*Automotive Engineering, International College,  
King Mongkut's Institute of Technology  
Ladkrabang*

- 16:20 - 16:40 M-OP-09 **Mechanical Properties of Micrometer-sized  
Ni<sub>3</sub>Sn Phase**  
**Nattaya Tosangthum**  
*National Metal and Materials Technology Center*

- 17:00 - 17:20 M-OP-10 **Kinetic of Polyethylene Glycol Binder  
Dissolution in Powder Injection Molding of  
304L Stainless Steel/Tungsten Carbide**  
**Parinya Chakartnarodom**  
*Department of Materials Engineering and Center  
of Advanced Studies in Industrial Technology and  
Materials Innovation Center, Faculty of  
Engineering, Kasetsart University*
- 17:20 - 17:40 M-OP-11 **Solidification of Water-Atomised Cu-16Sn,  
Cu-38Sn and Cu-61Sn Powders**  
**Autcharaporn Srion**  
*National Metal and Materials Technology Center*
- 17:40 - 18:00 M-OP-12 **Can Solid State Transformation of Mechanically  
Alloyed Ni-Sn Powders to Anomalous Ni-Ni<sub>3</sub>Sn  
Eutectic Explain Solidification of Supercooled  
Ni-32.5 wt. % Sn Alloy ?**  
**Ruangdaj Tongsri**  
*National Metal and Materials Technology Center*
- 18:00 - 18:20 M-OP-13 **Optimization of Injection Moulding Parameters  
for 20µm Stainless Steel Powder (SS316L) by  
Response Surface Methodology**  
**Abdullah M. F.**  
*Department of Mechanical and Material  
Engineering, Faculty of Engineering and Built  
Environment, Universiti Kebangsaan, Malaysia*



**Room:** Salon A  
**Session:** Polymer-based Materials 1  
**Session Chair:** Dr. Chureerat Prahsarn  
*National Metal and Materials Technology Center*

11:00 - 11:40 PM-I-01 **Development of Clay-Based Films**  
**Dr. Takeo Ebina**  
*National Institute of Advanced Industrial Science  
and Technology, Japan*

11:40 - 13:30 Lunch & Exhibition

**Room:** Salon A  
**Session:** Polymer-based Materials 2  
**Session Chair:** Dr. Pasaree Laokijcharoen  
*National Metal and Materials Technology Center*

13:30 - 13:50 PM-OP-01 **Crystallization Behavior of PLA in Dynamic  
Vulcanized PLA/ENR and PLA/ENR TPV filled  
with OMMT**  
**Chanchai Thongpin**  
*Department of Materials Science and Engineering,  
Faculty of Engineering and Industrial Technology,  
Silpakorn University*

13:50 - 14:10 PM-OP-02 **Investigation of Shear-Induced Chain Scission  
in Natural Rubber by Rheological Method**  
**Nathayada Saengklin**  
*Department of Chemical Engineering,  
Faculty of Engineering, Thammasat University*

14:10 - 14:30 PM-OP-03 **Effect of Pectin as Co-emulsifier on Physical  
Properties of Itraconazole-loaded  
Nanoemulsions**  
**Suchada Piriyaprasarth**  
*Department of Pharmaceutical Technology,  
Faculty of Pharmacy and Pharmaceutical  
Biopolymer Group, Faculty of Pharmacy,  
Silpakorn University*

14:30 - 14:50 PM-OP-04 **Monmorillonite and Maleic Anhydride Contents affect Thermo-Mechanical Properties of Fish Water Soluble Protein Bio-Composite Films**  
**Rapeepan Saiwaew**  
*Department of Packaging and Materials Technology, Faculty of Agro-Industry, Kasetsart University*

14:50 - 15:20 Refreshment & Poster Session 1

**Room:** Salon A  
**Session:** Polymer-based Materials 3  
**Session Chair:** Dr. Witchuda Daud  
*National Metal and Materials Technology Center*

15:20 - 15:40 PM-OP-07 **Use of Recycled Polymer and Recycled Glass for Thermal Insulation Composite Material with Low Thermal Conductivity**  
**Cancelled**  
**Jan Pencik**  
*Brno University of Technology, Faculty of Civil Engineering, Institute of Civil Engineering, Czech Republic*

15:40 - 16:00 PM-OP-08 **Thermal and Mechanical Properties of Highly-filled Polybenzoxazine-Alumina Composites**  
**Jirawat Kajohnchaiyagual**  
*Polymer Laboratory Engineering, Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University*

**Room:** Salon A  
**Session:** Simulation, Design and Manufacturing 1  
**Session Chair:** Dr. Somboon Otarawanna  
*National Metal and Materials Technology Center*

- 17:00 - 17:20 SDM-OP-01 **Feasibility Study of Acoustic Emission Monitoring of Hot Cracking in GTAW Weld**  
**Sittisak Charunetratsamee**  
*Faculty of Engineering, King Mongkut's University of Technology Thonburi*
- 17:20 - 17:40 SDM-OP-02 **Effect of Helium Addition in Argon Shielding Gas on Metal Transfer Behavior in Gas Metal Arc Welding of Aluminum**  
**Pakpoom Jittavisuttiwong**  
*Department of Production Engineering, Faculty of Engineering, King Mongkut's University of Technology Thonburi*
- 17:40 - 18:00 SDM-OP-03 **Process Prototype Recycling of Tungsten Carbides Powder**  
**Saharat Wongsisa**  
*Division of Sustainable Industrial Management Engineering, Faculty of Engineering, Rajamangala University of Technology Phra Nakhon*
- 18:00 - 18:20 SDM-OP-04 **Effects of Vertical Vibration on Compressive and Bond Strength of Concrete during the Initial Curing**  
**Sungnam Hong**  
*Department of Civil and Environmental Engineering, Sungkyunkwan University, South Korea*

## Friday, June 8, 2012

**Room:** Le Concorde Ballroom

### Plenary Lecture

09:00 – 09:45 PL-03 **Tissue Engineering of Epithelial Tissues-from  
the Laboratory to the Clinic**  
**Prof. Sheila MacNeil**  
*University of Sheffield, United Kingdom*

**Room:** Rachavadee

**Session:** Advanced Ceramic Materials 4

**Session Chair:** Dr. Sorachon Yoriya

*National Metal and Materials Technology Center*

09:50 – 10:10 ACM-OP-11 **Phase and Electrical Properties of PZT Thin  
Cancelled Films Embedded with CuO Nano-Particles  
by a Hybrid Sol-Gel Route**  
**Tharathip Sreesattabud**

*Department of Physics and Materials Science,  
Faculty of Science, Chiang Mai University*

10:10 – 10:30 ACM-OP-12 **TEM Analysis of Microstructures in InN Film  
Grown on (0001) 4H-SiC by RF-MBE**  
**Papaporn Jantawongrit**

*Department of Physics, Faculty of Science,  
King Mongkut's University of Technology  
Thonburi*

10:30 – 10:50 ACM-OP-13 **Influence of Cobalt and Zirconia on  
Microstructural Features and Mechanical  
Properties of the Alumina/Tungsten Carbide  
Composites**

**Wantanee Buggakupta**  
*Research Unit of Advanced Ceramics,  
Department of Materials Science,  
Chulalongkorn University*

10:50 – 11:10 Refreshment & Poster Session 2

**Room:** Rachavadee  
**Session:** Advanced Ceramic Materials 5  
**Session Chair:** Dr. Supaporn Wansom  
*National Metal and Materials Technology Center*

- 11:10 – 11:30 ACM-OP-14 **Powder Injection Moulding of Alumina Using PEG/PVB Binder System**  
**Pat Sooksae**  
*Department of Materials Science and Engineering, Faculty of Engineering and Industrial Technology, Silpakorn University and Center of Excellence for Petroleum, Petrochemicals and Advanced Materials, Chulalongkorn University*
- 11:30 – 11:50 ACM-OP-15 **Influence of Powder Loading and Temperature on Solvent Debinding of Injection Molded Nano Yttria Stabilized Zirconia**  
**Hafizawati Zakaria**  
*Department of Mechanical and Material Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia and Program of Mechanical Engineering, School of Mechatronic Engineering, Universiti Malaysia Perlis, Malaysia*
- 11:50 – 12:10 ACM-OP-16 **The Characteristic of Inner Surface Coating on Porous Al<sub>2</sub>O<sub>3</sub> Tube by Electrophoretic Deposition**  
**Laksana Kreethawate**  
*Thailand Institute of Scientific and Technological Research and Chulalongkorn University*
- 12:10 – 12:30 ACM-OP-17 **Preparation of Porous Ceramic and Its Utilization as Spa Compress Ball**  
**Sikarn Visuttiko**  
*School of Cosmetic Science, Mae Fah Luang University*
- 12:30 – 13:30 Lunch & Exhibition

**Room:** Rachavadee  
**Session:** Advanced Ceramic Materials 6  
**Session Chair:** Dr. Supaporn Wansom  
*National Metal and Materials Technology Center*

- 13:30 – 13:50 ACM-OP-18 **Microstructural Features of the ZnO-Bi<sub>2</sub>O<sub>3</sub> Binary System**  
**Niti Yongvanich**  
*Materials Science and Engineering,  
Faculty of Engineering and Industrial Technology,  
Silpakorn University and Center of Excellence for  
Petroleum, Petrochemical, and Advanced  
Materials, Chulalongkorn University*
- 13:50 – 14:10 ACM-OP-19 **Ballistic Performance of Ceramic/S<sub>2</sub>-Glass Composite Armor**  
**Ryan McCuiston**  
*King Mongkut's University of Technology  
Thonburi*
- 14:10 – 14:30 ACM-OP-20 **High Indentation Resistance Aluminum Borate based Glass-Ceramics**  
**Pat Sooksuen**  
*Department of Materials Science and Engineering,  
Faculty of Engineering and Industrial Technology,  
Silpakorn University*
- 14:30 – 14:50 ACM-OP-21 **Alternative Soda-lime Glass Batch to Reduce Energy Consumption**  
**Ekarat Meechoowas**  
*Thailand Center of Excellent for Glass,  
Department of Science Service*
- .

**Room:** Krisana  
**Session:** Biomedical Materials and Devices 4  
**Session Chair:** Dr. Robert Molloy  
*Chiang Mai University*

- 09:50 - 10:20 BMD-I-02 **Surface Modification of Medical Implants:  
Coating and Patterning**  
**Dr. Jie Huang**  
*Department of Materials Science and Metallurgy,  
University of Cambridge, UK*
- 10:20 - 10:50 BMD-I-03 **Engineering Functional Tissues: regeneration of  
Complex and Composite Tissues**  
**Prof. Lucy Di Silvio**  
*Guy's, King's and St. Thomas' Schools (GKT) of  
Medicine & Dentistry, King's College London  
(KCL), Guy's Hospital, UK*
- 10:50 - 11:10 Refreshment & Poster Session 2

**Room:** Krisana  
**Session:** Biomedical Materials and Devices 5  
**Session Chair:** Dr. Naruporn Monmaturapoj  
*National Metal and Materials Technology Center*

- 11:10 - 11:30 BMD-OP-10 **Benzoyl Peroxide *In Situ* Forming Antimicrobial  
Gel**  
**Jongjan Mahadlek**  
*Department of Pharmaceutical Technology,  
Faculty of Pharmacy, Silpakorn University*
- 11:30 - 11:50 BMD-OP-11 **Preparation and Characterisation of Cattle  
Bone Based Hydroxyapatite Implant Coatings  
Using Electrostatic Spray Deposition**  
**Muhammadsarn-ii Baru**  
*Biomedical Engineering Center, Faculty of  
Engineering, Chiang Mai University*

- 11:50 - 12:10 BMD-OP-12 **Preparation of 3DP Hydroxyapatite Composite By Single And Double Pass Poly( $\epsilon$ -caprolactone) Infiltration**  
**Faungchat Thammarakcharoen**  
*National Metal and Materials Technology Center*
- 12:10 - 13:30 Lunch & Exhibition
- Room:** Krisana  
**Session:** Biomedical Materials and Devices 6  
**Session Chair:** Asst. Prof. Dr. Sirirat Rattanachan  
*Suranaree University of Technology*
- 13:30 - 13:50 BMD-OP-13 **Chondrocyte Response to Hydrolyzed Poly(butylene succinate) Scaffolds Coated with Hydroxyapatite**  
**Preeyapan Meesap**  
*National Metal and Materials Technology Center*
- 13:50 - 14:10 BMD-OP-14 **Fabrication and Characterization of Porous Scaffold from Hydroxyapatite/Chitosan-Gelatin Composite for Bone Tissue Engineering**  
**Cancelled**  
**Whattanapong Changkowchai**  
*Biomedical Engineering Center,  
Chiang Mai University*
- 14:10 - 14:30 BMD-OP-15 **Fabrication and Characterization of a Phosphate Glass/Hydroxyapatite Scaffold for Palate Repair**  
**Cancelled**  
**Pornpatima Yenbut**  
*Biomedical Engineering Center,  
Chiang Mai University*
- 14:30 - 14:50 BMD-OP-16 **Preparation and Characterization of Natural-based Porous Scaffold for Bone Tissue Engineering Application**  
**Cancelled**  
**Tarin Sukhachiradet**  
*Biomedical Engineering Center,  
Chiang Mai University*
- 14:50 - 15:10 Refreshment



**Room:** Krisana  
**Session:** Biomedical Materials and Devices 7  
**Session Chair:** Dr. Danu Prommin  
*National Metal and Materials Technology Center*

- 15:10 - 15:30 BMD-OP-17 **Finite Element Model Validation of a Unilateral External Fixator: Importance of Screw Fixation**  
**Kavin Karunratanakul**  
*Biomechanics Section, Department of Mechanical Engineering and Prometheus, Division of Skeletal Tissue Engineering, KU Leuven, Belgium*
- 15:30 - 15:50 BMD-OP-18 **Effects of Anodization on Corrosion Resistance of Ti-6Al-4V Alloys with Various Potential**  
**Warittha Asumpinwong**  
*Department of Prosthodontics, Faculty of Dentistry, Chulalongkorn University*

**Room:** Jamjuree  
**Session:** Materials for Energy and Environment 4  
**Session Chair:** Dr. Korakot Sombatmankhong  
*National Metal and Materials Technology Center*

- 09:50 – 10:10 MEE-OP-11 **Adsorption of Zn(II) and Pb(II) on Modified Coir Pith**  
**Nusavadee Pojnanukij**  
*Department of Chemical Engineering,  
Faculty of Engineering, Khon Kaen University*
- 10:10 – 10:30 MEE-OP-12 **Novel Nano-Sorbent for Removal of Radioactive Cesium Based on Magnetic Nanoparticles Functionalized with Ferric Ferrocyanide**  
**Chakrit Thammawong**  
*School of Bio-chemical Engineering and  
Technology, Sirindhorn International Institute of  
Technology, Thammasat University*
- 10:30 – 11:10 Refreshment & Poster Session 2

**Room:** Jamjuree  
**Session:** Materials for Energy and Environment 5  
**Session Chair:** Dr. Sittha Sukkasi  
*National Metal and Materials Technology Center*

- 11:10 – 11:30 MEE-OP-13 **The Effect of Titanium Dioxide and Additives on Heat Reflection and Thermal Reduction of Paint**  
**Boonnak Sukhummek**  
*Department of Chemistry, Faculty of Science, King  
Mongkut's University of Technology Thonburi*
- 11:30 – 11:50 MEE-OP-14 **Solubility of Carbon Dioxide in Ionic Liquids and Other Low Vapour Pressure Solvents**  
**Patiwat Onbuddha**  
*National Metal and Materials Technology Center*
- 11:50 – 13:30 Lunch & Exhibition

**Room:** Jamjuree  
**Session:** Materials for Energy and Environment 6  
**Session Chair:** Dr. Pawadee Methacanon  
*National Metal and Materials Technology Center*

- 13:30 – 13:50 MEE-OP-15 **Development of a Kraft Paper Box Lined with Thermal-insulating Materials by Utilizing Natural Wastes**  
**Nattida Klinklow**  
*Department of Materials Engineering,  
Faculty of Engineering, Kasetsart University*
- 13:50 – 14:10 MEE-OP-16 **Conversion of Secondary Pulp/Paper Sludge to Glucose by Hydrothermal Treatment**  
**Nawapon Chariyaprasertsin**  
*Center of Excellence in Particle Technology,  
Department of Chemical Engineering,  
Faculty of Engineering, Chulalongkorn University*
- 14:10 – 14:30 MEE-OP-17 **Effects of Diatomite and Glass Cullet in the Waste-based Gypsum Building Materials**  
**Kanyakarn Tounchuen**  
*Research Unit of Advanced Ceramics,  
Department of Materials Science,  
Faculty of Science, Chulalongkorn University  
and Center for Petroleum, Petrochemicals and  
Advanced Materials, Chulalongkorn University*
- 14:30 – 14:50 MEE-OP-18 **Comparison on Pore Development of Activated Carbon Produced from Scrap Tire by Potassium Hydroxide and Sodium Hydroxide for Active Packaging Materials**  
**Athiwat Sirimuangjinda**  
*Department of Packaging and Materials  
Technology, Faculty of Agro-Industry,  
Kasetsart University*
- 14:50 – 15:10 Refreshment

**Room:** Jamjuree  
**Session:** Materials for Energy and Environment 7  
**Session Chair:** Dr. Samerkhae Jongthammanurak  
*National Metal and Materials Technology Center*

- 15:10 – 15:30 MEE-OP-19 **Optimization of Reactive Red 3 Degradation by Catalytic Wet Oxidation over Fe-RH-MCM-41 using Box-Behnken Design**  
**Pongsert Sriprom**  
*Department of Chemical Engineering,  
Faculty of Engineering, Khon Kaen University*
- 15:30 – 15:50 MEE-OP-20 **Optical Band Gap and Electrical Conductance of Nano-Si Quantum Dots in SiO<sub>x</sub> Film for Applications in Photonic Device**  
**Thipwan Fangsuwannarak**  
*School of Electrical Engineering,  
Suranaree University of Technology*
- 15:50 – 16:10 MEE-OP-21 **Development of Analytical Technique for Determining Certain Polycyclic Aromatic Hydrocarbons (PAHs)**  
**Noppara Thaweewatthananon**  
*National Metal and Materials Technology Center*

**Room:** Salon B  
**Session:** Metals, Alloys and Intermetallic Compounds 4 (Welding 1)  
**Session Chair:** Dr. Panyawat Wangyao  
*Chulalongkorn University*

- 09:50 - 10:20 M-I-02 **The RES-Process-New Technologies by Weld Cladding and Renovation of Surfaces**  
**Prof. Dr.-Ing Fritz Hartung**  
*University of Applied Sciences, Germany*
- 10:20 - 10:40 M-OP-14 **The Effect of Ultrasonic Vibration Assisted Solidification on Mechanical Properties of Weld Metal**  
**Titinan Methong**  
*Department of Production Engineering,  
Faculty of Engineering, King Mongkut's University  
of Technology Thonburi*
- 10:40 – 11:10 Refreshment & Poster Session 2

**Room:** Salon B  
**Session:** Metals, Alloys and Intermetallic Compounds 5 (Welding 2)  
**Session Chair:** Dr. Panyawat Wangyao  
*Chulalongkorn University*

- 11:10 - 11:30 M-OP-15  
**Cancelled** **Possibility for Evaluation of Cr<sub>23</sub>C<sub>6</sub> Formation in Repairing Welding of IY 800H by EPR Technique**  
**Pipat Archasong**  
*Welding Engineering Program,  
Faculty of Engineering, King Mongkut's  
University of Technology Thonburi*
- 11:30 - 11:50 M-OP-16 **Effect of Mn Substitution in Structure and Microhardness of GTAW Austenitic Stainless Steels**  
**Narueporn Vaneesorn**  
*Department of Physics and Materials Science,  
Faculty of Science, Chiang Mai University*

- 11:50 - 12:10 M-OP-17 **Welding Procedure Development for Welding of High Strength Carbon Steel clad with Austenitic Stainless Steel 316L by Using Overmatching Filler Metal**  
**Nusara Tiyasri**  
*Department of Production Engineering,  
Welding Engineering Program,  
Faculty of Engineering, King Mongkut's  
University of Technology Thonburi*
- 12:10 - 13:30 Lunch & Exhibition

**Room:** Salon B  
**Session:** Metals, Alloys and Intermetallic Compounds 6  
(High Temperature Application and Surface Science & Engineering 1)  
**Session Chair:** Thanaporn Korad  
*National Metal and Materials Technology Center*

- 13:30 - 13:50 M-OP-18 **Effect of Boron on High Temperature Deformation and Austenite Decomposition Temperature of Low Carbon Steel**  
**Nuntawat Chokchaithananan**  
*Sahaviriya Steel Industry Public Company Limited,  
Thailand*
- 13:50 - 14:10 M-OP-19 **Effect of Coiling Temperature and Preliminary Tensile Strain on Bake Hardening of Manganese Hot Rolled Steels**  
**Chaiyanan Suksamranchai**  
*Department of Materials and Metallurgical  
Engineering Program, The Sirindhorn  
International Thai-German Graduate School of  
Engineering*
- 14:10 - 14:30 M-OP-20 **Functionally Graded Porous ZrO<sub>2</sub> Insulator for Al7075 in Dynamic Thermal Condition**  
**Panadda Sheppard**  
*National Metal and Materials Technology Center*

14:30 - 14:50 M-OP-21 **Phosphate Coating and Post-Treatment with Less Environmental Impact on Aluminium Alloy**  
**Supunsa Dech-oup**  
*Department of Industrial Chemistry,  
Faculty of Science, Chiang Mai University*

14:50 - 15:10 Refreshment

**Room:** Salon B  
**Session:** Metals, Alloys and Intermetallic Compounds 7  
(High Temperature Application and Surface Science & Engineering 2)  
**Session Chair:** Dr. Panadda Sheppard  
*National Metal and Materials Technology Center*

15:10 - 15:30 M-OP-22 **Wear Resistant Coating for Pulverizing Blade**  
**Chalermchai Sukhonket**  
*National Metal and Materials Technology Center*

15:30 - 15:50 M-OP-23 **FeAl as Bondcoat Replacement for NiAl in High Temperature Applications**  
**Hathaipat Koiprasert**  
*National Metal and Materials Technology Center*

15:50 - 16:10 M-OP-24 **Wear Behavior during Transition from Mild Wear to Severe Wear in Lubricated Sliding Condition of Al Alloy Surface**  
**Witthaya Daodon**  
*King Mongkut's University of Technology  
Thonburi*

**Room:** Salon A  
**Session:** Polymer-based Materials 4  
**Session Chair:** Asst. Prof. Varawut Tangpasuthadol  
*Chulalongkorn University*

09:50 - 10:10 PM-OP-09 **Low Viscosity Feedstock for Micro Metal Injection Molding Process**  
**Cancelled**  
**J. Rajabi**  
*Department of Mechanical and Materials Engineering, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia*

10:10 - 10:30 PM-OP-10 **Effect of Plasticizers' Active Groups on Gelatinization Properties of Rice Flour Gel and Dough**  
**Thongkorn Ploypetchara**  
*Department of Food Science and Technology, Faculty of Argo-Industry, Kasetsart University*

10:30 - 11:00 Refreshment & Poster Session 2

**Room:** Salon A  
**Session:** Polymer-based Materials 5  
**Session Chair:** Asst. Prof. Varawut Tangpasuthadol  
*Chulalongkorn University*

11:00 - 11:40 PM-I-02 **Study of Structural Evolution in the Crystallization Process of Poly(L-Lactic Acid) Based on the Temperature- and Time-Dependent Measurements of X-ray Scattering and Infrared Spectra**  
**Prof. Kohji Tashiro**  
*Toyota Technological Institute, Japan*

11:40 - 13:30 Lunch & Exhibition



**Room:** Salon A  
**Session:** Polymer-based Materials 6  
**Session Chair:** Dr. Somboon Sahasithiwat  
*National Metal and Materials Technology Center*

- 13:30 - 13:50 PM-OP-11 **Toughness Enhancement of Poly(lactic acid) Compounds**  
**Jadsadaporn Chouaytan**  
*Bioplastic Research Unit, Department of Materials Science and Technology, Faculty of Science, Prince of Songkla University*
- 13:50 - 14:10 PM-OP-12 **Crystallization Behavior of PLA in PLA/NR compared with Dynamic Vulcanized PLA/NR**  
**Chanchai Thongpin**  
*Department of Materials Science and Engineering, Faculty of Engineering and Industrial Technology, Silpakorn University, Sanamchandra Palace Campus*
- 14:10 - 14:30 PM-OP-13 **Poly(lactic acid) Synthesis with Lipase-Catalysed Polymerization and Its Degradation Behavior of Polymer in Soil**  
**Chaniga Chuensangjun**  
*Department of Biotechnology, Faculty of Agro Industry, Kasetsart University*
- 14:30 - 14:50 PM-OP-14 **Influence of Calcium Carbonate Nanoparticles on Mechanical Behavior of Poly(lactic acid)/Poly(butylene succinate) Blend**  
**Nattakarn Hongriphan**  
*Department of Material Science and Engineering, Faculty of Engineering and Industrial Technology, Silpakorn University*
- 14:50 - 15:10 Refreshment

**Room:** Salon A  
**Session:** Polymer-based Materials 7  
**Session Chair:** Dr. Darunee Aussawasathien  
*National Metal and Materials Technology Center*

- 15:10 - 15:30 PM-OP-15 **Influence of Coir Fibre on Stability of Polyethylene Composites Exposed to Photo and Thermo-ageing**  
**Rungsima Chollakup**  
*KAPI, Kasetsart University, Thailand and Clermont Université, Université Blaise Pascal, Institut de Chimie de, France and CNRS, France*
- 15:30 - 15:50 PM-OP-16 **The Investigation of Sagging and Abrasion Properties of High Density Polyethylene Pipe for Mining Industry**  
**Attawut Kumkrong**  
*Thai Polyethylene Company Limited (SCG Chemicals Co., Ltd.)*
- 15:50 - 16:10 PM-OP-17 **Key Factors for Strength Control of Polymer Concrete**  
**Jirayut Suebsuk**  
*Geomechanics and Geomaterials Research Unit, Faculty of Engineering and Architecture, Rajamangala University of Technology Isan*
- Cancelled**

**Room:** Sakthong  
**Session:** Simulation, Design and Manufacturing 2  
**Session Chair:** Dr. Chi-na Benyajati  
*National Metal and Materials Technology Center*

- 09:50 - 10:20 SDM-I-01 **FE Modeling of Forming of Advanced High Strength Steel Sheets**  
**Dr. Suwat Jirathearant**  
*National Metal and Materials Technology Center*
- 10:20 - 10:40 SDM-OP-05 **Study Design Runner Balancing Model and Switch Point for the Four Cavities Design in Gating System of Cold Chamber High Pressure Die Casting**  
**Pone Anantaphan**  
*National Metal and Materials Technology Center*
- 10:40 - 11:10 Refreshment & Poster Session 2

**Room:** Sakthong  
**Session:** Simulation, Design and Manufacturing 3  
**Session Chair:** Dr. Chawin Jantharasaenawong  
*King Mongkut's University of Technology Thonburi*

- 11:10 – 11:30 SDM-OP-06 **Influence of Package Size on ESD-CDM WITHSTAND VOLTAGE and Electrical Test Yield of ICs**  
**Yuparwadee Satirakul**  
*Spansion (Thailand) Limited*
- 11:30 – 11:50 SDM-OP-07 **Physical and FEM Simulation of PLA/HA Screw Insertion into Bone**  
**Thaweekarn Changthong**  
*Department of Industrial Engineering,  
Faculty of Engineering, Chiang Mai University*
- 11:50 – 12:10 SDM-OP-08 **Die Crack Pattern from Bending Force in Single-die Fine-pitch Ball Grid Array Package**  
**Witoon Kittidacha**  
*Spansion (Thailand) Limited*
- 12:10 – 13:30 Lunch & Exhibition

**Room:** Sakthong  
**Session:** Simulation, Design and Manufacturing 4  
**Session Chair:** Dr. Somboon Otarawanna  
*National Metal and Materials Technology Center*

- 13:30 – 13:50 SDM-OP-10 **Constitutive Modeling of Anisotropic Wood  
Fiber Plastic Composite**  
**Cancelled**  
**Shayanin Eahkanong**  
*Department of Mechanical and Aerospace  
Engineering, Faculty of Engineering,  
King Mongkut's University of Technology  
North Bangkok*
- 13:50 - 14:10 SDM-OP-11 **Parameters Optimization of COPPER WIRE  
Bonding on Thin Small Outline Package**  
**Sorasit Srikamonsirisak**  
*Spansion (Thailand) Limited*
- 14:10 - 14:30 SDM-OP-12 **The Analysis of Thermally Coupled Fluid-Solid  
Interaction Problems via Fractional Four-Step  
Finite Element Method**  
**Cancelled**  
**Atipong Malatip**  
*National Metal and Materials Technology Center*
- 14:30 - 14:50 SDM-OP-13 **Optimization of Induction Brazing Parameters  
for Stellite Strip of Steam Turbine Blade using  
Taguchi-Neural Network**  
**Nattachai Muangsong**  
*Department of Control Systems and  
Instrumentation Engineering, Faculty of  
Engineering, King Mongkut's University of  
Technology Thonburi*
- 14:50 – 15:10 Refreshment

**Room:** Sakthong  
**Session:** Simulation, Design and Manufacturing 5  
**Session Chair:** Dr. Tanakorn Tantanawat  
*National Metal and Materials Technology Center*

15:10 - 15:30 SDM-OP-14 **Investigation of Weld-joint Designs for a Farm-Truck Front using Finite Element Method and Factorial Experiment**  
**Kittikhun Prasertkan**

*National Metal and Materials Technology Center*

15:30 - 15:50 SDM-OP-15 **Housing-Circumferential Body Design of Mechanical Seal for Warm Shrink Fit Assembly**  
**Cancelled**  
**Wuttipong Boonkeaw**

*Department of Production Engineering,  
Faculty of Engineering, King Mongkut's University  
of Technology North Bangkok*

15:50 - 16:10 SDM-OP-16 **Design and Fabrication of Phase Controlled Converter for Magnetizing Magnetic Materials**  
**Tammatorn Tantivorasri**

*Automotive Engineering Program,  
International College, King Mongkut's Institute  
of Technology Ladkrabang*

## Poster Presentations

### Advanced Ceramic Materials

- ACM-PP-01 **Heterojunction Properties of p-CuO/n-CdS Diode**  
**Wannapa Chumnearpeut**  
*Department of Physics, Faculty of Science,  
King Mongkut's Institute of Technology Ladkrabang*
- ACM-PP-02 **Fabrication and Characterization of Heterojunction for CdS  
Thin Films and CuAlO<sub>2</sub> Ceramic Pill Substrate**  
**Adison Nopparuchikun**  
*Department of Physics, Faculty of Science,  
King Mongkut's Institute of Technology Ladkrabang*
- ACM-PP-03 **Synthesis of Titanium Dioxide Nanotube using Anodizing  
Cancelled Technique**  
**Chaiyaput Kruehong**  
*Department of Chemical Engineering Faculty of Engineering,  
Khon Kaen University*
- ACM-PP-04 **Microstructure Characterization and Multi-Fractal Behaviors  
Cancelled of Dielectric La<sub>2</sub>O<sub>3</sub> Films Prepared by the Ion Beam Assisted  
Electron-Beam Evaporation**  
**Huiqing Fan**  
*State Key Laboratory of Solidification Processing,  
School of Materials Science and Engineering,  
Northwestern Polytechnical University*
- ACM-PP-05 **The Effect of Granule Morphology and Composition on the  
Compaction Behavior and Mechanical Properties of  
92% Alumina Spray Dried Granules**  
**Kritkaew Somton**  
*National Metal and Materials Technology Center*

- ACM-PP-06 **Magnetic Properties of Porous Barium-Hexaferrite Ceramic Fabricated by Powder Injection Moulding**  
**Nutthita Chuankrerkkul**  
*Center of Innovative Nanotechnology, Chulalongkorn University and Metallurgy and Materials Science Research Institute, Chulalongkorn University*
- ACM-PP-07 **Bismuth Vanadate (BiVO<sub>4</sub>) Powder Prepared by Sol-gel Method**  
**Suchanya Kojinok**  
*Department of Chemistry, Faculty of Science, Maejo University*
- ACM-PP-08 **Synthesis of Bismuth Sodium Titanate Nanopowder by High-Energy Ball Milling Technique**  
**Chontira Sangsubun**  
*Department of Physics, Faculty of Science, Thaksin University*
- ACM-PP-09 **Effect of Milling Method on The Particle Size of Calcined 0.65PMN-0.35PT Powder**  
**Arjin Boonruang**  
*Thailand Institute of Science and Technological Research*
- ACM-PP-10 **Preparation of In-House Alumina Target for Rf Magnetron Sputtering**  
**Jutharat Chiewwattanakul**  
*School of Energy, Environment and Materials, King Mongkut's University of Technology Thonburi*
- ACM-PP-11 **A Comparative Study of Mechanical Properties and Economic Evaluation of Roof Tiles filled with Alternatives to Chrysotile**  
**Siripang Kaewsunthon**  
*Faculty of Engineering, Thammasat University*

ACM-PP-12 **Improvement of Gloss and Adhesion of the Hydrophobic Film coated on Transparent Glass**

**On-uma Nimittrakoolchai**

*National Metal and Materials Technology Center*

ACM-PP-13 **Self-Organized Anodic TiO<sub>2</sub> Nanotube Arrays: Effect of Water Additive on Nanotube Cell Orientation**

**Sorachon Yoriya**

*National Metal and Materials Technology Center*

### **Biomedical Materials and Devices**

BMD-PP-01 **Electrodeposition of Graphene Oxide and Silver Nanoparticles on Platinum Electrode for Enzymeless Hydrogen Peroxide Detection**

**Montree Sawangphruk**

*Department of Chemical Engineering, Faculty of Engineering, Kasetsart University and Center for Advanced Studies in Nanotechnology and Its Applications in Chemical, Food and Agricultural Industries, Kasetsart University*

BMD-PP-02 **Effect of Poly(vinyl pyrrolidone) on Antibacterial Activity of Styrene-Acrylonitrile Copolymer/Silver Nanocomposite**

**Montree Sawangphruk**

*Department of Chemical Engineering, Faculty of Engineering, Kasetsart University*

BMD-PP-03 **Polymeric Eutectic Drug Delivery System**

**Sarun Tuntarawongsa**

*Department of Pharmaceutical Technology, Faculty of Pharmacy, Silpakorn University*



- BMD-PP-04 **Characterization and Drug Behavior in Shellac Wax – Poloxamer Matrix Tablets Fabricated with Mold Technique**  
**Chai-ek Choncheewa**  
*Department of Pharmaceutical Technology, Faculty of Pharmacy, Silpakorn University*
- BMD-PP-05 **Crystallization of Lithium Disilicate Glass Ceramics for Dental Crowns**  
**Naruporn Monmaturapoj**  
*National Metal and Materials Technology Center*
- BMD-PP-06 **Development of High Porosity Scaffold Containing Extract of *Sonneratia caseolaris* Seed**  
**Orn Setthajindalert**  
*Department of Pharmaceutical Technology, Faculty of Pharmacy, Silpakorn University*
- BMD-PP-07 **Role of Aluminum Monostearate on Heat Treated-Chitosan Sponges Properties**  
**Kotchamon Yodkhum**  
*Department of Pharmaceutical Technology, Faculty of Pharmacy, Silpakorn University*
- BMD-PP-08 **Cetirizine Dihydrochloride Tablets Comprising Different Lubricants with High Loaded Colloidal Silicon Dioxide**  
**Prachya Katewongsa**  
*Department of Pharmaceutical Technology, Faculty of Pharmacy, Silpakorn University*
- BMD-PP-09 **Cytotoxicity of Active Compounds from *Centella asiatica* on Astrocytic Cultured Cell**  
**Supawadee Punpae**  
*Department of Pharmaceutical Technology, Faculty of Pharmacy, Silpakorn University*
- Cancelled**

- BMD-PP-10 **Comparative Study on Quality and Corrosion Resistance of Soldered and Laser-welded Joint of Ni-free Co-Cr Alloy Using Filler**  
**Cancelled**  
**Piyarach Eutrarak**  
*Department of Prosthodontics, Faculty of Dentistry, Chulalongkorn University*
- BMD-PP-11 **Fabrication and Optimization of Amperometric Biosensor Based on Immobilization of Glucose Oxidase on PEGDE Modified Silk Fibroin Membranes**  
**Piyarut Moonsri**  
*Department of Chemistry, Faculty of Science and Technology, Phetchabun Rajabhat University*
- BMD-PP-12 **Effects of Argon Plasma Treatment on the Wettability and Surface Topography of Gelatin Film**  
**Juthathip Saelee**  
*Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University*
- BMD-PP-13 **Hydrogen Bonding of Imidazole/Imidazolium Components in Decavanadate Salt, [2-MeImH]<sub>2</sub>[Zn(2-MeIm)<sub>4</sub>]<sub>2</sub>[V<sub>10</sub>O<sub>28</sub>]**  
**Cancelled**  
**Samroeng Krachodnok**  
*Department of Applied Chemistry and Center for Innovation in Chemistry, Faculty of Science, Lampang Rajabhat University*
- BMD-PP-14 **Effect of Borax Solution on Delayed Setting and Mechanical Properties of Plaster of Paris**  
**Chanya Chuenarrom**  
*Faculty of Dentistry, Prince of Songkla University*

- BMD-PP-15 **Prediction of Pregelatinized Arrowroot Starch as Tablet Disintegrants using Artificial Neural Networks**  
**Cancelled**  
**Vipaluk Patomchaivivat**  
*Department of Pharmaceutical Technology, Faculty of Pharmacy, Silpakorn University*
- BMD-PP-16 **Clinical Trial Results of Absorbable Chitosan Derivative-based Hemostat**  
**Boonlom Thavornnyutikarn**  
*National Metal and Materials Technology Center*
- BMD-PP-17 **Antimicrobial Activity and Cytotoxicity of Nanosilver Loaded 3DP Calcium Phosphate Matrix**  
**Phetrungr Phanphiriya**  
*National Metal and Materials Technology Center*
- BMD-PP-18 **Manufacturing of Implantable Biomedical Devices by Metal Injection Moulding Process**  
**Cancelled**  
**Mohd Afian Omar**  
*AMREC, SIRIM Berhad, Malaysia*

### **Materials for Energy and Environment**

- MEE-PP-01 **Dissolved Oxygen Sensor Film Using Ruthenium Polypyridine Complex as Luminophore**  
**Chanissnun Su-Ngam**  
*Department of Chemistry, Faculty of Science, Kasetsart University*
- MEE-PP-02 **Titanium Dioxide Nanostructures synthesized by Sonochemical – Hydrothermal Process**  
**Narongdet Wongpisutpaisan**  
*College of Nanotechnology, King Mongkut's Institute of Technology Ladkrabang*

- MEE-PP-03  
Cancelled **Electrochemical Double Layer Capacitor of Mesoporous TiO<sub>2</sub> as formed in Aqueous based Electrolytes**  
**Pacharee krongkitsiri**  
*Department of Science and Mathematics, Faculty of Industry and Technology, Rajamangala University of Technology Isan*
- MEE-PP-04 **Liquid-Liquid Extraction as a Sample Preparation for Determining Eight Polycyclic Aromatic Hydrocarbons in Extender Oil**  
**Nantana Tongplub**  
*National Metal and Materials Technology Center*
- MEE-PP-05 **Compressive Strength and Drying Shrinkage of Fly Ash and Silica Fume Blended Cement at High Volume Cement Replacement**  
**Watcharapong Wongkeo**  
*Advanced Cement-Based Materials Research Unit,  
Department of Physics and Materials, Faculty of Science,  
Chiang Mai University*
- MEE-PP-06 **Effect of Limestone, Fly Ash and Ground Granulated Blast-furnace Slag as a Cement Replacement on Properties of Binary Blended Cement**  
**Pailyn Thongsanitgarn**  
*Department of Physics and Materials Science,  
Faculty of Science, Chiang Mai University*
- MEE-PP-07  
Cancelled **Biodiesel Production from Tung Seed Oil by Microwave Coupling with Ultrasonic Techniques**  
**Panan Supakaew**  
*Department of Chemistry, Faculty of Science,  
Maejo University*

- MEE-PP-08     **The Preparation of Activated Carbon from Longan by Steam Fluidization Method**  
                  **Nipaporn Udomchokwiwat**  
*Department of Chemistry, Faculty of Science, Maejo University*
- MEE-PP-09     **Application of Para Rubber Latex Mixed with Organic Dyes as Printing Ink for Biodegradable Plastic Film**  
                  **Tanathorn Techochaignam**  
*Department of Printing and Packaging Technology,  
King Mongkut's University of Technology Thonburi*
- MEE-PP-10     **Novel Absorbent of Sodium Alginate/Cellulose and Natural Rubber for Adsorption Behavior of Pb(II) Ions**  
                  **Sa-Ad Riyajan**  
*Department of Materials Science and Technology,  
Faculty of Science, Prince of Songkla University*
- MEE-PP-11     **Comparison Energy Harvesting Performance of PZT Stack and PVDF Stave in Series and Parallel Coupled Through Standard Approach**  
                  **Prissana Rakbamrung**  
*Faculty of Education, Suratthani Rajabhat University*
- MEE-PP-12     **Frequency Tuning for Cantilever Beam with Bonded Piezoceramics**  
                  **Panu Thainiramit**  
*Material Physics Laboratory, Department of Physics,  
Prince of Songkla University*
- MEE-PP-13     **Upconversion Luminescence of Yttrium Oxysulfide Co-doped with Rare Earth Elements**  
                  **Uthaiwan Injareon**  
*Thailand Institute of Nuclear Technology*

- MEE-PP-14     **Preparation of Cobalt Oxide and Manganese Oxide Nanoparticles for Uses in Supercapacitor Applications**  
**Montree Sawangphruk**  
*Department of Chemical Engineering, Faculty of Engineering, Kasetsart University and Center for Advanced Studies in Nanotechnology and Its Applications in Chemical, Food and Agricultural Industries, Kasetsart University*
- MEE-PP-15     **Fabrication of Palladium Nanoparticles Coated Graphene Electrodes for Use in Direct Methanol Fuel Cell**  
**Montree Sawangphruk**  
*Department of Chemical Engineering, Faculty of Engineering, Kasetsart University*
- MEE-PP-16     **Biodiesel Production from Waste Cooking Oil using Supercritical Methanol Process**  
**Cancelled**  
**Sudaporn Sukchinda**  
*College of Environmental Science, Kasetsart University*
- MEE-PP-17     **Electrodeposition of Platinum Nanostructures on Graphene Electrodes for Uses in Fuel Cells**  
**Montree Sawangphruk**  
*Department of Chemical Engineering, Faculty of Engineering, Kasetsart University and Center for Advanced Studies in Nanotechnology and Its Applications in Chemical, Food and Agricultural Industries, Kasetsart University*

- MEE-PP-18     **Fabrication of Graphene-based Electrodes for Uses in Supercapacitors**  
**Montree Sawangphruk**  
*Department of Chemical Engineering, Faculty of Engineering, Kasetsart University and Center for Advanced Studies in Nanotechnology and Its Applications in Chemical, Food and Agricultural Industries, Kasetsart University*
- MEE-PP-19     **Synthesis, Characterization, and Supercapacitance Properties of Silver-doped Polyaniline**  
**Montree Sawangphruk**  
*Department of Chemical Engineering, Faculty of Engineering, Kasetsart University and Center for Advanced Studies in Nanotechnology and Its Applications in Chemical, Food and Agricultural Industries, Kasetsart University*
- MEE-PP-20     **Preparation of NiO-Ni<sub>2</sub>Al<sub>2</sub>O<sub>3</sub> Composite and Its Feasibility to use as an External Support for SOFC**  
**Anuwat Srisuwan**  
*Department of Materials Science, School of Science, Mae Fah Luang University*
- MEE-PP-21     **Materials for Solar Water Disinfection Redesign**  
**Sittha Sukkasi**  
*National Metal and Materials Technology Center*

## **Material Reliability**

MR-PP-01  
Cancelled

**Inhibitive Effects of *Terminalia catappa* L. Extract on the Corrosion of Steel in 1 M HCl using Weight Loss Technique**  
**Wanich Limwanich**

*Faculty of Science and Technology,  
Rajamangala University of Technology Srivijaya*

MR-PP-02

**Constructing Economical Reciprocating Test Machine for Wear Research**  
**Pratip Vongbandit**

*Thailand Institute of Scientific and Technological Research*

MR-PP-03

**Effects of Current Density and Particle Loading on the Codeposition of Ni-Ti Composite Coatings**  
**Sangthum Srikomol**

*Department of Materials Engineering, Faculty of Engineering,  
Kasetsart University*

MR-PP-04

**Study of a Natural Extract as an Environmentally-Friendly Corrosion and Scale Inhibitor for Recirculating Cooling Water System**  
**Jiraphan Pleanteangthume**

*Materials Science and Engineering Graduate Programme,  
Faculty of Science, Mahidol University and Center for Surface  
Science and Engineering, Faculty of Science, Mahidol University*



## **Metals, Alloys and Intermetallic Compounds**

- M-PP-01      **Study of the Preparation of Metals Surface for  
Characterization by EBSD Technique; Part I: Effect of  
Mechanical Polishing**  
**Ussadawut Patakham**  
*National Metal and Materials Technology Center*

## **Polymer-based Materials**

- PM-PP-01      **Effect of Sodium Chloride on Miscibility of Thermoplastic  
Starch/Poly(butylene adipate-co-terephthalate) Blend**  
**Chindawan Puchangcharoen**  
*Department of Packaging and Materials Technology,  
Faculty of Agro-Industry, Kasetsart University*
- PM-PP-02      **Halogenated Sorbitol Derivatives Using as Nucleating Agent  
and Their Effect on Orientation of Polypropylene Fiber**  
**Supatra Wangsoub**  
*Department of Chemistry, Faculty of Science,  
Naresuan University*
- PM-PP-03      **Properties of Thermoplastic Cassava Starch modified by  
Pectin**  
**Worawan Pattanasin**  
*Department of Chemistry, Faculty of Science,  
King Mongkut's Institute of Technology Ladkrabang*
- PM-PP-04      **Preparation of Poly(lactic acid) Porous Flat Membranes via  
Phase Separation Method**  
**Arisa Jaiyu**  
*Thailand Institute of Scientific and Technological Research*

- PM-PP-05  
Cancelled **Properties of Thermoplastic Cassava Starch/Low-Density Polyethylene Blend modified by Carrageenan**  
**Wanida Pomdage**  
*Department of Chemistry, Faculty of Science,  
King Mongkut's Institute of Technology Ladkrabang*
- PM-PP-06 **Effect of Glycerol on Miscibility of Thermoplastic Starch/Poly(ethylene-co-vinyl alcohol) Blends**  
**Jitrawee Suk-ema**  
*Department of Packaging and Materials Technology,  
Faculty of Agro-Industry, Kasetsart University*
- PM-PP-07  
Cancelled **The Effect of Pipe Extrusion on Crystallization and Hydrostatic Resistance of Polyethylene Pipe**  
**Kunthalee Phutthasattha**  
*Thai Polyethylene Co., Ltd*
- PM-PP-08  
Cancelled **Synthesis of Polylactic Acid from Fermentative Lactic Acid by Direct Polycondensation and Its Degradation Behavior in Soil**  
**Lalita Ponmanee**  
*Department of Biotechnology, Faculty of Agro-Industry,  
Kasetsart University*
- PM-PP-09 **Calcium Sensitive Pectin from Pomelo Peels**  
**Jaruwan Krongsin**  
*National Metal and Materials Technology Center*
- PM-PP-10 **Production of Poly- $\gamma$ -glutamic acid by *Bacillus licheniformis* : Synthesis and Characterization**  
**Nuttawut Kongklom**  
*Department of Biotechnology, Faculty of Agro-Industry,  
Kasetsart University*

- PM-PP-11      **Cure Characteristic, Mechanical and Thermal Properties of NR/NBR Blend filled with Organic Modified Montmorillonite (OMMT)**  
**Chanchai Thongpin**  
*Department of Materials Science and Engineering,  
Faculty of Engineering and Industrial Technology, Silpakorn University*
- PM-PP-12  
Cancelled      **Viscoelastic Models for Recycled Polymer HDPE Loaded by Constant Pressure**  
**Jan Pencik**  
*Institute of Civil Engineering, Faculty of Civil Engineering,  
Brno University of Technology*
- PM-PP-13  
Cancelled      **Mechanical Properties and Morphologies of PP/Co-PE/Talc Composites for Microwave Application**  
**Jakkrit Piwsawang**  
*Department of Packaging and Materials Technology  
Faculty of Agro-Industry ,Kasetsart University*
- PM-PP-14  
Cancelled      **Structure and Properties of Composites of Micro cellulose with Polypropylene: Effects of Micro Cellulose Loading**  
**Pongpat Sukhavattanakul**  
*Department of Packaging and Materials Technology,  
Faculty of Agro-Industry ,Kasetsart University*
- PM-PP-15  
Cancelled      **Mechanical and Morphology Properties of Polypropylene/ Polyoxymethylene Blends**  
**Tanakorn Siripattanasak**  
*Department of Chemical Engineering, Faculty of Engineering and Industrial Technology, Silpakorn University*

- PM-PP-16      **Effect of Molar Substitution on Physicochemical Characteristics of Hydroxypropyl Starches**  
**Thiraphong Sanga-Ngam**  
*Department of Manufacturing Pharmacy, Faculty of Pharmacy, Mahidol University*
- PM-PP-17  
Cancelled      **Effects of Cementitious Material Types for Concrete Column Repairs**  
**Sungnam Hong**  
*Department of Civil and Environmental Engineering, Sungkyunkwan University, Korea*
- PM-PP-18  
Cancelled      **Effects of Different Polymer-base Hot-Melt Adhesives on Adhesive Bonding/Debonding in Slider Bar Lapping Application**  
**Supida Pokinsuwan**  
*Department of Chemical Engineering, Faculty of Engineering, Thammasat University*
- PM-PP-19      **Preparation and Characterization of Highly Filled Graphite-Based Polybenzoxazine Composites for Bipolar Plate Application**  
**Anucha Pengdam**  
*Polymer Engineering Laboratory, Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University*
- PM-PP-20      **Improving Mechanical Properties of Polypropylene Nanocomposite with Silica Nanoparticles: Size Dependence**  
**Montree Sawangphruk**  
*Department of Chemical Engineering, Faculty of Engineering, Kasetsart University and Center for Advanced Studies in Nanotechnology and Its Applications in Chemical, Food and Agricultural Industries, Kasetsart University*

PM-PP-21      **Synthesis and Characterization of a Novel Tin(II) Alkoxide Initiator for Use in The Ring-Opening Polymerization**  
**Natapol Jaisom**  
*Department of Chemistry, Faculty of Science, Maejo University*

PM-PP-22      **Radiation Curable Coating for Polyester Finishing**  
**Cancelled**      **Watcharinporn Phomsook**  
*Department of Materials Science, Faculty of Science,*  
*Chulalongkorn University*

**Simulation, Design and Manufacturing**

SDM-PP-01      **Experimental Investigation of De-oiling Hydrocyclone**  
**Kanawut Srirahong**  
*National Nanotechnology Center*