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# Conference Schedule

Aug. 3rd—5th, 2015

Time	Activity	Location: E11 in Macau University
08:30-17:00	Registration	Faculty of Science and Technology, Learning Commons

## Tuesday Morning, Aug. 4th

Time	Activity: Opening Ceremony	Location: Anthony Lau Building E4-G062
08:00-08:10	Opening Ceremony and Welcoming Speech	<b>Chairperson: Prof. Sammy L.I.</b>
08:10-08:50	Keynote Speech 1: The First Bulk–Nanostructured Metal <b>Prof. Harry Bhadeshia</b>	<b>Chairperson: Prof. Zikang Tang</b>
08:50-09:30	Keynote Speech 2: Prospects for Nanowires: from Nano-materials to Nano-Devices <b>Prof. Harry E. Ruda</b>	
09:30-10:10	Keynote Speech 3: Solution Processed Zinc-Tin Oxide Thin-Film Transistor for Charge-Trapping Memory Application <b>Prof. Jen-Sue Chen</b>	
10:10-10:30	Coffee Break	
10:30-11:10	Keynote Speech 4: Laser Surface Modification of Engineering Alloys for Combating Cavitation Erosion-Corrosion <b>Prof. Chi Tat Kwok</b>	<b>Chairperson: Prof. Harry Bhadeshia</b>
11:10-11:50	Keynote Speech5: ZnO ---- A Promising Wide-Gap Semiconductor for Photo Electronic Device Applications <b>Prof. Zikang Tang</b>	

## Tuesday Noon, Aug. 4th

12:00-13:30	Lunch	Location: Food Paradise, 1st floor of Central Teaching Building E6
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## Tuesday Afternoon, Aug. 4th

Time	Activity	Location: Anthony Lau Building, Lecture Hall (E4-G062)
14:00-14:40	Keynote Speech 6: Carbonaceous Nanomaterials for Hydrogen Storage and Energy Applications <b>Prof. Sammy L.I. Chan</b>	<b>Chairperson: Prof. Harry E. Ruda</b>
14:40-15:20	Keynote Speech 7: Field Application of Electrochemical Noise (EN) Corrosion Monitoring Systems in the Process Industries <b>Dr. William M. Cox</b>	
15:20-16:00	Keynote Speech 8: Safe Gliding in Inflated Bubbles: Engineering Solutions and Numerical Simulations of Stable	

	Air-Water-Solid Interfaces in Supercavities Providing a High-Speed Motion in Water <b>Dr. Alexander Khotsianovsky</b>	
16:00-16:20	Coffee Break	
16:20-17:00	Keynote Speech 9: Laser Based Microfabrication Techniques <b>Prof. Sigitas Tamulevičius</b>	<b>Chairperson: Prof. Jen-Sue Chen</b>
17:00-17:40	Keynote Speech 10: Analytical and Numerical Modeling of Effective Elastic and Thermal Properties of Porous Materials with Convex, Concave or Anisometric Pore Shape <b>Dr. Willi Pabst</b>	

### Tuesday Evening, Aug. 4th

18:00-19:30	Dinner	Location: Food Paradise, 1st floor of Central Teaching Building E6
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### Wednesday Morning, Aug. 5th

Time	Location: E11 Faculty of Science and Technology, Learning Commons	
09:00-12:00 (10:30-10:50 Coffee Break)	Oral Session1 Characterization & Testing	E11-1025
	Oral Session2 Characterization & Testing	E11-1026
	Oral Session3 Energy Materials	E11-1027
	Oral Session4 Ceramics Materials	E11-1028

### Wednesday Morning, Aug. 5th

09:00-10:30	Poster Session 1	Location: E11 Faculty of Science and Technology, Learning Commons
10:30-12:00	Poster Session 2	

### Wednesday Noon, Aug. 5th

12:00-13:30	Lunch	Location: Food Paradise, 1st floor of Central Teaching Building E6
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### Wednesday Afternoon, Aug. 5th

Time	Activity	Location: E11 Faculty of Science and Technology
14:00-16:50 (15:30-15:50 Coffee Break)	Oral Session5 Characterization & Testing	E11-1025
	Oral Session6 Anti-Corrosion Materials	E11-1026
	Oral Session7 Ceramics Materials	E11-1027
	Oral Session8 Other Materials	E11-1028

### **Wednesday Afternoon, Aug. 5th**

14:00-15:30	Poster Session 3	Location: E11 Faculty of Science and Technology, Learning Commons
15:30-17:00	Poster Session 4	

### **Wednesday Evening, Aug. 5th**

17:30-19:30	Conference Banquet	Location: Fortune Inn Restaurant, Ground floor of UM Guest House N1
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### **Thursday, Aug. 6th**

08:30-18:00	Gathering at the campus gate at 08:15 a.m. and going for a tour in Macau
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# 大会日程（中文版）

2015年8月3日-5日

时间	日程安排	地点: 澳门大学 E11
08:30-17:00	注册报到	科技学院, 学习共享空间

8月4日, 星期二上午

时间	活动	地点: 刘少荣楼演讲室 E4-G062
08:00-08:10	开幕式, 欢迎致辞	主持人: <b>Sammy L.I. Chan</b> 教授
08:10-08:50	主题报告 1: The First Bulk-Nanostructured Metal 报告专家: <b>Harry Bhadeshia</b> 教授	主持人: 汤子康教授
08:50-09:30	主题报告 2: Prospects for Nanowires: from Nano-materials to Nano-Devices 报告专家: <b>Harry E. Ruda</b> 教授	
09:30-10:10	主题报告 3: Solution Processed Zinc-Tin Oxide Thin-Film Transistor for Charge-Trapping Memory Application 报告专家: <b>陈贞夙</b> 教授	
10:10-10:40	茶歇	
10:40-11:20	主题报告 4: Laser Surface Modification of Engineering Alloys for Combating Cavitation Erosion-Corrosion 报告专家: <b>郭志达</b> 教授	主持人: <b>Harry Bhadeshia</b> 教授
11:20-12:00	Keynote Speech 5: ZnO ---- A Promising Wide-Gap Semiconductor for Photo Electronic Device Applications 报告专家: <b>汤子康</b> 教授	

8月4日, 星期二中午

12:00-13:30	午餐	地点: 中央教学楼东六座一楼食通天美食广场
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8月4日, 星期二下午

14:00-14:40	主题报告 6: Carbonaceous Nanomaterials for Hydrogen Storage and Energy Applications 报告专家: <b>Sammy L.I. Chan</b> 教授	主持人: <b>Harry E. Ruda</b> 教授
14:40-15:20	主题报告 7: Field Application of Electrochemical Noise (EN) Corrosion Monitoring Systems in the Process Industries 报告专家: <b>William M. Cox</b> 博士	
15:20-16:00	主题报告 8: Safe Gliding in Inflated Bubbles: Engineering Solutions and Numerical Simulations of Stable Air-Water-Solid Interfaces in Supercavities Providing a	

	High-Speed Motion in Water 报告专家: <b>Alexander Khotsianovsky</b> 博士	
16:00-16:20	茶歇	
16:20-17:00	主题报告 9: Laser Based Microfabrication Techniques 报告专家: <b>Sigitas Tamulevičius</b> 教授	主持人: 陈贞凤教授
17:00-17:40	主题报告 10: Analytical and Numerical Modeling of Effective Elastic and Thermal Properties of Porous Materials with Convex, Concave or Anisometric Pore Shape 报告专家: <b>Willi Pabst</b> 博士	

### 8月4日, 星期二晚上

18:00-19:30	晚餐	地点: 中央教学楼东六座一楼食通天美食广场
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### 8月5日, 星期三上午

时间	日程安排(10:30-10:50 茶歇)	地点: 科技学院 E11, 学习共享空间
09:00-12:00	口头报告1 Characterization & Testing	E11-1025
	口头报告2 Characterization & Testing	E11-1026
	口头报告3 Energy Materials	E11-1027
	口头报告4 Ceramics Materials	E11-1028

### 8月5日, 星期三上午

09:00-10:30	张贴报告1	地点: 科技学院 E11, 学习共享空间
10:30-12:00	张贴报告2	地点: 科技学院 E11, 学习共享空间

### 8月5日, 星期三中午

12:00-13:30	午餐	地点: 中央教学楼东六座一楼食通天美食广场
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### 8月5日, 星期三下午

时间	日程安排(15:30-15:50 茶歇)	地点: 科技学院 E11, 学习共享空间
14:00-16:50	口头报告5 Characterization & Testing	E11-1025
	口头报告6 Anti-Corrosion Materials	E11-1026
	口头报告7 Ceramics Materials	E11-1027
	口头报告8 Other Materials	E11-1028

**8月5日，星期三下午**

14:00-15:30	张贴报告3	地点：科技学院，学习共享空间
15:30-17:00	张贴报告4	地点：科技学院，学习共享空间

**8月5日，星期三晚上**

17:30-19:30	欢迎晚宴	地点：N1 澳大宾馆地面层富临轩
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**8月6日，星期四**

08:30-18:00	澳门一日游（请于早上 08:15 在澳门大学门口集合）	
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## Part II Invited Keynote Speeches

**Keynote Speaker:** Prof. Harry Bhadeshia

University of Cambridge, UK

**Title:** The First Bulk–Nanostructured Metal

**Time:** 08:10-08:50, Anthony Lau Building E4-G062



### **Abstract:**

This is a story about a most elegant structure created in steel, consisting of incredibly fine and slender crystals of ferrite permeating a matrix of austenite. The crystals are typically 20-40 nm in thickness and in the form of plates. There are so many of these crystals per unit of volume, that a material is created which has one of the highest densities of interfaces known to man. And all this can be achieved in samples which are large in all three dimensions, without the use of deformation or rapid heat treatment, and at a cost which in terms of weight or volume compares with that of bottled-water. There is no new manufacturing technology required; the fabrication of the steel is conventional. But the heat-treatment is far from conventional, involving periods of up to ten days at temperatures in the vicinity of 200°C. The end result is hardness in excess of 700 HV, strength of the order of 2.5 GPa, uniform ductility in the range 7-27%, and toughness in the range 30-50MPam<sup>1/2</sup>.

The choreography of atoms during the transformation of austenite into the crystals of bainitic-ferrite has a major role in determining the structure. I will describe how the material was discovered and the underlying phase transformations theory.

Hundreds of tonnes of the material has been produced and utilised in a variety of specialised engineering applications such as shafts and armour. The new science associated with this material, including a remarkable new Fe-C phase diagram, will be described.



Fig. 1: Huge samples of the steel described here undergoing heat-treatment (in this case austenitisation). For more details, see Nanostructured bainite, Proceedings of the Royal Society of London - A, Vol. 466, 2010, 3–18, and The first bulk nanostructured metal, Science and Technology of Advanced Materials 14 (2013) 014202. The first bulk nanostructured metal These and other articles can be downloaded from [www.msm.cam.ac.uk/phase-trans/2010/nano.html](http://www.msm.cam.ac.uk/phase-trans/2010/nano.html)



**Keynote Speaker:** Prof. Harry E. Ruda

University of Toronto, Canada

**Title:** Prospects for Nanowires: from Nano-materials to Nano-Devices

**Time:** 08:50-09:30, Anthony Lau Building E4-G062



**Abstract:**

Over the past two decades, extensive research on nanowires have revealed many interesting and promising material properties for novel applications in electronics, optoelectronics, and sensing, to name a few. This presentation outlines the growth of semiconductor nanowires and engineering of their unique optical and electrical properties by control over growth, and discusses exploiting these unique properties for next generation device applications.

**Keynote Speaker:** Prof. Jen-Sue Chen

National Cheng Kung University, Taiwan

**Title:** Solution Processed Zinc-Tin Oxide Thin-Film Transistor for Charge-Trapping Memory Application

**Time:** 09:30-10:10, Anthony Lau Building E4-G062



**Abstract:**

We developed a solution processed zinc-tin oxide (ZTO) film of only ~7 nm in thickness and the ZTO is applied as the active semiconductor layer in a thin film transistor (TFT) with SiO<sub>2</sub> dielectrics, which exhibits a good field-effect mobility of ~10cm<sup>2</sup>/Vs, small subthreshold slope of ~0.5 V/decade and high on/off current ratio of ~10<sup>7</sup>. After introducing a Ni charge trapping layer and an AlOx tunneling layer in the gate dielectrics, the ZTO TFT ID-VG transfer characteristics can be horizontally shifted by +3V/-3V when applying positive/negative gate biases. The shift of ID-VG transfer characteristics can be further modulated by visible light illumination. The charge transport between ZTO TFT channel region and Ni trapping layer will be discussed based on the electron tunneling and migration of photo-ionized oxygen vacancies, under the influence of gate bias and visible light illumination.

**Keynote Speaker:** Prof. Chi Tat Kwok

University of Macau, Macau

**Title:** Laser Surface Modification of Engineering Alloys for Combating Cavitation Erosion-Corrosion

**Time:** 10:30-11:10, Anthony Lau Building E4-G062



**Abstract:**

Cavitation erosion-corrosion (CEC) is a nuisance for engineering components such as ship propellers, pump impellers, valves, ultrasonic cleaners, etc, which are exposed to the high-speed flowing or vibratory corrosive fluids. The generation of cavities and followed by their collapse can damage the surface of materials by shock wave and high-speed liquid microjet impingement. Shock waves are formed by the rapid collapse of the cavities and repetitively generates high pressures leading to a fatigue type loading on the surface. Such pressures are strong enough to cause plastic deformation in most engineering alloys, enhance mass transport and electrochemical reactions and thereby accelerate corrosion rates of their surfaces. With synergistic effect of a corrosive medium, the overall damage induced by CEC involves the interaction of hydrodynamic, mechanical, metallurgical, and chemical factors. The presence of oxygen and aggressive ions in the electrolyte is important in controlling CEC rates. The resistance of engineering alloys to CEC depends on hardness, yield strength, fatigue strength, strain hardening rate, passivity, microstructure and imperfections of the materials. CEC is a surface phenomenon, laser surface modification has been applied to avoid and reduce erosion damage. With the merits of refined microstructure, strong metallurgical bond, minimum thermal distortion, high processing speed, precision and versatility, the problem of CEC have been tackled by enhancing the surface properties of the base materials (ferrous and non-ferrous alloys) with various laser surface modification techniques including laser transformation hardening (LTH), laser surface melting (LSM), laser surface alloying (LSA), laser cladding (LC), laser shock peening (LSP) and laser plasma hybrid spraying (LPHS). A review of published data on correlation between CEC resistances of the laser-surface modified alloys, defined as reciprocal of mean depth of erosion rate with the properties of materials is presented.

**Keynote Speaker:** Prof. Zikang Tang

Director of Nano Science and Technology Program  
Hong Kong University of Science and Technology, Hong Kong

**Title:** ZnO ---- A Promising Wide-Gap Semiconductor For Photo Electronic Device Applications

**Time:** 10:10-11:50, Anthony Lau Building E4-G062



**Abstract:**

ZnO is a promising semiconductor material for applications in electronics, photonics and acoustics. Its wide band gap (3.37 eV), high exciton binding energy (60 meV) and abundant resource on the planet makes ZnO very attractive over other semiconductors for ultraviolet photo-electronic device applications. However, reproducible and reliable p-type doping in pure ZnO remains to be the main current obstacle for realization of commercial applications. Among the acceptor dopants, nitrogen is believed to be the best candidate for growing p-type ZnO. However, the solubility of N in pure ZnO is very low. In order to increase the N doping level, lots of efforts were made in the past years, such as temperature modulation epitaxial technique for high level nitrogen doping, co-doping of nitrogen with other metals, such as III- and I- group elements (Al, Ga, In, Li, etc.). Despite a significant progress made, there are still a number of important physical and chemical issues that need to be resolved before ZnO can be transitioned to commercial use. In this presentation, we will review the critical issues for realization of ZnO-based devices and report our recent progress in epitaxial growth of ZnO / BeZnO single-crystal thin film system and their efficient p-type doping.

**Keynote Speaker:** Prof. Sammy L.I. Chan

The University of New South Wales, Australia

**Title:** Carbonaceous Nanomaterials for Hydrogen Storage and Energy Applications

**Time:** 14:00-14:40, Anthony Lau Building E4-G062



**Abstract:**

Carbon-based nanomaterials have continually garnered interest in the field of electronics and energy storage devices owing to their excellent electrical properties and high charge carrier mobility. The high current-carrying capacity of these nanomaterials makes them attractive as interconnects in microelectronic devices and electrodes in supercapacitors and fuel cells. In

addition, following the miniaturisation of microelectronics and advances in portable devices, their lightweight property makes them appealing with the rapid increase in demand for compact and high energy density batteries. Another application of carbonaceous nanomaterials is in the field of hydrogen storage, which utilizes the exceptional high surface area available for effective hydrogen adsorption. In this context carbon nanotubes are being considered as a candidate for next generation hydrogen carrier. This presentation aims to present an overview on the related works carried out at University of New South Wales. The presentation will cover the hydrogen storage in carbon nanotubes and other nanomaterials, as well as the uses of carbon nanotubes and buckypapers in batteries and in other applications. The production of buckypapers and graphene papers with exceptionally high electrical conductivity will also be discussed.

**Keynote Speaker:** Dr. William M. Cox

Editor of Anti-Corrosion Methods and Materials  
Director and Principal Consultant, Corrosion Management Limited, UK



**Title:** Field Application of Electrochemical Noise (EN) Corrosion Monitoring Systems in the Process Industries

**Time:** 14:40-15:20, Anthony Lau Building E4-G062

**Abstract:**

It is now more than thirty years since the electrochemical noise analysis was proposed for the monitoring of corrosion phenomena, yet there is still a degree of contention over its efficacy and reliability. In substantial measure, this has been due to misunderstanding and misapplication of the technology, even by respected practitioners and academics, as well as to a degree of hostility from established suppliers of traditional instrumentation.

EN instrumentation has a unique capacity to operate satisfactorily in circumstances where conventional equipment is unusable. It also has an unmatched capability to detect and quantify localized corrosion phenomena such as pitting attack, stress corrosion cracking, corrosion fatigue and stress-assisted IGA.

The use of electrochemical noise instrumentation to provide an indication of the cumulative rate of attack, in a manner that is similar to the approach when using traditional corrosion monitoring systems, is to overlook its most powerful capability, however, which is its capacity to provide a highly sensitive indication of the onset of attack, enabling timely and effective remedial action to be taken, thereby reducing both the duration and severity of damage.

Example applications will be drawn from field installations to monitor environmentally-assisted

cracking in chemical process and high purity water systems, for condensing environments in the fossil power generation and nuclear reprocessing applications and in high temperature service such as for radiant and superheater tubes in waste-to-energy and oxy-fuel combustion conditions. Particular attention will be paid in respect of specific precautions that need to be taken when utilizing EN instrumentation in process plant applications.

The paper will consider a strategic approach to corrosion monitoring, corrosion surveillance and, ultimately, corrosion management. The role of modern instrumentation in augmenting condition management systems and complementing and enhancing risk-based methods of process plant operation, inspection and maintenance also will be covered.

**Keynote Speaker:** Dr. Alexander Khotsianovsky

Pisarenko Institute of Problems of Strength of the National Academy of Sciences of Ukraine, Ukraine

**Title:** Safe Gliding in Inflated Bubbles: Engineering Solutions and Numerical Simulations of Stable Air-Water-Solid Interfaces in Supercavities Providing a High-Speed Motion in Water

**Time:** 15:20-16:00, Anthony Lau Building E4-G062



**Abstract:**

In-water motion speed of modern surface vessels is limited by viscous resistance (drag) of water, which increases with the motion speed, while the available howercraft and airfoil solutions to this problem with reduced water-vessel contact area have their own limitations, including high energy expenses. This presentation outlines a well-known, but underdeveloped alternative of a drastic drag reduction by separating the vessel hull from water using a disk- or cone-shaped cavitator, which “opens an umbrella” over the major part of the hull to produce an ellipsoidal air bubble (supercavity) inflated by an artificial or natural air inflow, which provides a very high motion speed. This supercavitating principle was implemented in high-speed underwater vehicles (HSUV) and small water plane area twin hull (SWATH) vessels, as well as in famous military applications, such as Shkval (USSR, 1977) and Barracuda (Germany, 2005) high-speed torpedoes.

This keynote report covers the latest experimental and numerical simulation results obtained for the air-water-solid interfaces of supercavities by a team of Ukrainian scientists within a framework of the US (DARPA/ONR) project called “Study of drag-reduction capabilities of cavitation applications for motion in water”. Those include experimental research techniques for investigation of cavitating flows, in particular, underwater photography and tensometric measurements, simulation of ventilated cavity bubbles near a free surface, experimental gas consumption and numerical predictions of cavity gas entrainment on the basis of assessment of characteristics of

laminar-turbulent shear layer of gas at cavity surface, simulation of liquid weightiness and free border effects, organization of the developed cavitation flow by supply of aqueous solutions of high-molecular linear-chain polymers, and interaction of cavities formed by a conic cavitator and a cavitating strut for the SWATH application. The numerical simulation results are compared with the proposed engineering solutions. The most reliable cavitator and hull geometries and materials, providing the optimal supercavity closure around the hull, the minimal gas loss, as well as the maximal motion stability and maneuverability are identified. The deficiencies of the available solutions and follow-up project tasks are discussed.

**Keynote Speaker:** Prof. Sigitas Tamulevičius

Member of the European Materials Research Society  
Kaunas University of Technology (KTU), Republic of Lithuania

**Title:** Laser Based Microfabrication Techniques

**Time:** 16:20-17:00, Anthony Lau Building E4-G062



**Abstract:**

Different techniques and optical setups employing continuous wave as well as pulsed femtosecond lasers in production of microstructures and optical elements will be presented. Features and applications of the direct laser beam writing, interference lithography, laser ablation by direct laser beam as well as by the interference field will be discussed.

Today interference or holographic lithography (HL) is emerging as very promising and powerful technique for creating structures with sub-micrometer to nanometer scale periodicities. Currently fabrication of photonic crystals is perhaps the most common HL application. Besides research trends in photonic crystals, HL is shown to be applicable in vast range of areas where regular microstructures are necessary. Holographic lithography (HL) is high throughput technique capable of patterning complex regular structures with sub-wavelength resolution. There have been shown successful attempts where formation of optical sensors, nanowires, porous membranes, broadband membrane reflectors, magnetic dots, nano-fluidic structures and micro lenses arrays was performed employing HL.

Examples of fabrication and characterisation methods of two-dimensional periodic microstructures in photoresist with pitch of 1.1-1.2  $\mu\text{m}$ , formed using two-beam multiple exposure holographic lithography technique will be presented. The regular structures were recorded employing different angular positions of the sample in between two and three sequential exposures, providing fringes of various symmetries on thin positive tone photoresist layer spin-coated on floated glass substrates. After exposure and development, the resulting structures were analysed employing optical and scanning electron microscopy.



Application of ultrafast pulsed lasers in HL simplifies the surface patterning by integrating different processes utilized in conventional lithography into one direct surface micromachining step. There exists a wide range of HL optical setups but due to the short coherence length of the ultrafast pulsed lasers they are limited to the symmetrical configurations. Such holographic lithography configurations are often based on diffractive optical element (DOE) beam splitters. Rectangular profile phase diffraction gratings have been successfully demonstrated as efficient beam splitters for time resolved four wave mixing technique. In the current presentation DOE were used to produce uniform interference field that was used in structuring of different materials including polymers, diamond like carbon as well as diamond like based nanocomposites.

**Keynote Speaker:** Dr. Willi Pabst

University of Chemistry and Technology, Prague (UCT Prague),  
Czech Republic

**Title:** Analytical and Numerical Modeling of Effective Elastic and Thermal Properties of Porous Materials with Convex, Concave or Anisometric Pore Shape

**Time:** 17:00-17:40, Anthony Lau Building E4-G062



**Abstract:**

The effective elastic and thermal properties of porous ceramics, including highly porous cellular ceramics (ceramic foams) are strongly dependent on the porosity, but also on other details of the microstructure. In this contribution it is shown that pore shape has a far greater influence on the effective Young's modulus and thermal conductivity than the pore connectivity (closed or open), pore distance (cell wall thickness) and pore size distribution (monodisperse, bidisperse, uniform). It is shown that anisometric pore shape can be analytically modeled via the spheroidal model and that the analytical predictions are well confirmed by numerical results. Further it is shown that closed (isolated) pores or cells always result in a slightly higher Young's modulus and thermal conductivity than open (overlapping) pores. While porous model materials with convex isometric pores exhibit effective properties that are systematically higher than our exponential prediction and in most cases closer to the power-law prediction (Gibson-Ashby relation for open-cell foams), those with concave pores between convex particles are often below our exponential prediction, especially in the case of dense periodic arrangements of particles. Finally it is shown that, although a universal parameter-free prediction by analytical models does not exist, our cross-property relation between Young's modulus and thermal conductivity allows a very precise prediction of the Young's modulus when the thermal conductivity is known and vice versa.

## Part III Oral Presentation

Devices Provided by the Conference Organizer:

- Laptops (with MS-Office & Adobe Reader)
- Projectors & Screen
- Laser Sticks

Materials Provided by the Oral Presenters:

- PowerPoint

Duration of Each Presentation (Tentatively):

- Regular Oral Session: 10-15 Minutes of Presentation, 3-5 Minutes of Q&A

Time

- Aug. 4th, 2015 , 09:00-12:00; 14:00-17:00

### Oral Session 1 Characterization & Testing

**Aug. 5<sup>th</sup>, 09:00-12:00**

**Chairperson: Prof. Sigitas Tamulevičius**

**Location: E11 -1025**

Paper ID	Time	Paper Title	Author
MSEC1732	09:00-09:15	Electronic Excitations in Quasi-2D Crystals: What Theoretical Quantities Are Relevant to Experiment?	Vladimir Nazarov
MSEC1847	09:15-09:30	Exceptionally Low Thermal Conductivity of Poly(3-hexylthiophene) Single Nanowires	Kien Wen Sun
MSEC1518	09:30-09:45	An Improved Projection Method for Fatigue Parameters Solving of Metal Structures Based on Spherical Direction Cosine Group Scanning	Bing Yang
MSEC1554	09:45-10:00	Multi-functionality of Moth-eye Film	Yoshihiro Uozu
MSEC1491	10:00-10:15	The Method and Error Analysis of Current Determination of Refractive Index of High Temperature Melt by Brewster's	Qiao Zhu
MSEC1175	10:15-10:30	Predicting Aggregate Quality for Flexible Road Pavement with Bond Work Index	Adigun Oluwole Danile
MSEC1274	10:50-11:05	High Mechanical Properties of Rolled ZK60 Mg Alloy through Pre-equal Channel Angular Pressing	Yuchun Yuan
MSEC1738	11:05-11:20	Effects of Sc and Zr on Texture and Mechanical anisotropy of high strength Al-Zn-Mg alloy sheets	Ying Deng
MSEC1917	11:20-11:35	Superhydrophobic Microcapsules for Multifunctional Smart Coatings	Gang Wu
MSEC1974	11:35-11:50	Effects of Ausforming Strain on Bainite Formation in Nanostructured Bainite Steel	Jianguo He



## Oral Session 2 Characterization & Testing

Aug. 5<sup>th</sup>, 09:00-12:00

Chairperson: Dr. Alexander Khotsianovsky

Location: E11 -1026

Paper ID	Time	Paper Title	Author
MSEC1756	09:00-09:15	Effect of Nucleation and Stereocomplex Formation of Poly(lactic acid)	Yottha Srithep
MSEC1170	09:15-09:30	Effect of Tin on Microstructure and Mechanical Properties of Compacted Graphite Iron	Yezhe Lyu
MSEC1584	09:30-09:45	Studies on a Kind of Catalyst Used in Direct Synthesis of Dimethyl Ether in Fluidized Bed Reactor	Haipeng Zhang
MSEC1886	9:45-10:00	Effect of Chemical Finishing on Cu-coated Polyester Fabric via Magnetron Sputtering Process	Aishu Li
MSEC1930	10:00-10:15	Direct Growth of Multiwall Carbon Nanotubes on the Carbon-fiber-paper by Coupling Alternating Current Arc Discharge and Chemical Vapor Deposition	Michael Liu
MSEC1763	10:15-10:30	Strength and Electrical Conductivity of Cu/Al-Mg-Si/Cu Clad Composite	Won-Nyeon Kim
MSEC1702	10:50-11:05	Vapor - Gas Nucleation Data and Their Presentations as the Nucleation Rate Surfaces	Michael Anisimov
MSEC1471	11:05-11:20	Modeling Analysis of Laser Cladding of a Nickel-based Ceramic Coating	Meiyan Li
MSEC1587	11:20-11:35	A Probabilistic Model for Describing Short Fatigue Crack Growth Behavior of LZ50 Steel	Bing Yang
MSEC1009	11:35-11:50	Development and Application of Nanostructural Materials in Medical X-ray Technique	Mikhail Taubin

## Oral Session 3 Energy Materials

Aug. 5<sup>th</sup>, 09:00-12:00

Chairperson: Prof. Sammy L.I. Chan

Location: E11 -1027

Paper ID	Time	Paper Title	Author
MSEC1630	09:00-09:15	Preparation and Comparison of Silica Spheres Synthesized by Three Stöber Processes	Yuanting Wu
MSEC1506	09:15-09:30	Effect of Solvents on Performance of Polymer Solar Cells	Masaru Nagai
MSEC1625	09:30-09:45	Preparation of Three Dimensionally Ordered Macroporous Inorganic Materials ZrO <sub>2</sub> for Structural Color	Zailei Gong
MSEC1101	09:45-10:00	Wing Structure Design of Solar-powered UAV with High Aspect Ratio	Wei Zhang
MSEC1939	10:00-10:15	Effect of Nanostructure and Catalysis on Kinetics, Thermodynamics and Reaction Pathway in Mg-based Hydrogen Storage Materials	Huaiyu Shao
MSEC1754	10:15-10:30	Influence of Final Heat Treatment on Creep Behaviors of Zr-Nb-Cu Alloy Cladding Tubes	Inwon Kim

MSEC1901	10:50-11:05	Utilization of Glass Waste Containing Boron as Cement Additive	Weiwei Han
MSEC1686	11:05-11:20	Comparison of the Characteristics of Solid Type and Annular Type Nuclear Fuels	Youngdoo Kwon, JIMIN Song
MSEC1695	11:20-11:35	Thermo-mechanical Analysis of the Annular Pellet Nuclear Fuel and Its Comparison with Solid and Annular Nuclear Fuel Types	Bokyoung Shim

## Oral Session 4 Ceramics Materials

Aug. 5<sup>th</sup>, 09:00-12:00

Chairperson: Dr. Willi Pabst

Location: E11 -1028

Paper ID	Time	Paper Title	Author
MSEC1595	09:00-09:15	Structural and Multiferroic Properties of Single-phase $\text{Bi}_{0.95}\text{Ba}_{0.05}\text{FeO}_3$ Thin Films	Xiaoli Wen
MSEC1624	09:15-09:30	The Research of Three Dimensional Printing Device and Technology for Ceramic Products	Xiufeng Wang
MSEC1631	09:30-09:45	Dielectric Properties of $\text{Bi}_4\text{Si}_3\text{O}_{12}$ Ceramics	Hongtao Jiang
MSEC1532	09:45-10:00	A Double Nozzle Mechanism of the Ceramic Material Parts Forming Directly	Jia Wang
MSEC1627	10:00-10:15	Observation and Research of the Eutectic Process of $\text{Na}_3\text{AlF}_6\text{-Al}_2\text{O}_3$ System	Hui Li
MSEC1629	10:15-10:30	Preparation and Characterization of Modified Ceramic Slurry for Ceramic Three Dimensional Printing	Yang Yang
MSEC1626	10:50-11:05	Phase Change of $\text{Bi}_{0.5}(\text{Na}_{0.4}\text{K}_{0.1})\text{TiO}_3$ Ceramics under Low Electrical Filed	Wenyuan Xu
MSEC1923	11:05-11:20	Structure and Dielectric Properties of $\text{Bi}_2\text{O}_3\text{-MgO-Nb}_2\text{O}_5$ Pyrochlores	Libin Gao
MSEC1946	11:20-11:35	Development of Advanced Coating by Thiol-Ene Functionalized Graphene	Sunanda Roy
MSEC1391	11:35-11:50	Estimating Surface Hardening Profile of Blank for Obtaining High Drawing Ratio in Deep Drawing Process Using FE Analysis	Tan Chin Joo

## Oral Session 5 Characterization & Testing

Aug. 5<sup>th</sup>, 14:00-17:00

Chairperson: Prof. Chi Tat Kwok

Location: E11 -1025

Paper ID	Time	Paper Title	Author
MSEC1599	14:00-14:15	Features and Effect Factors of the Carbon Nanotube Based Nanothermophones	Dongdong Wang
MSEC1661	14:15-14:30	Synthesis of ZnO Nanotubes or Hexagonal Prisms and Zinc Vacancy-Induced Single-photon Emission	Yucang Liang
MSEC1465	14:30-14:45	Preparation of FeNi Alloy Thin Film and Their Catalytic Performance in the Reduction of Nitrophenol with Hydrazine Hydrate	Hao Li
MSEC1355	14:45-15:00	Effect of TIG Preheating on Mechanical and Microstructure Properties of FSW Welded Dissimilar Al Alloy and Mild Steel	HanSur Bang
MSEC1849	15:00-15:15	Study on Springback of High Tension Steel according to Various Temperature and Local Pre-heating Shape in the Roll Forming Process	Ya Zhang
MSEC1914	15:15-15:30	Fibre laser Welding of WC-20Co and Carbon Steel Using INVAR as Interlayer	Xiangyuan Yu, Dongran Zhou
MSEC1940	15:50-16:05	Microstructure and Mechanical Properties of Ultrafine CBN-WC/Co by Adding Cr <sub>3</sub> C <sub>2</sub> Constituent	Genrong Zhang
MSEC1800	16:05-16:20	Artificial Neural Networks Application for Modelling of Friction Stir Welding Effects on Mechanical Properties of 7075-T6 Aluminum Alloy	Erfan Maleki
MSEC1635	16:20-16:35	The Experiments for Mechanical Properties of 20Cr2Ni4 and the Coefficient Definition of Constitutive Equation	Lu Pang
MSEC2032	16:35-16:50	Investigation of Composite Materials for Military Applications	Arash Ramezani

## Oral Session 6 Anti-Corrosion Materials

Aug. 5<sup>th</sup>, 14:00-17:00

Chairperson: Dr. William M. Cox

Location: E11 -1026

Paper ID	Time	Paper Title	Author
MSEC1658	14:00-14:15	A New Type Room-temperature Hydrogen Gas Sensor Using Palladium-decorated Single-walled Carbon Nanotube/Si Heterojunction	Yonggang Du
MSEC1623	14:15-14:30	Preparation of Colorful Polystyrene Colloid Crystals Film by Solvent Evaporation Method	Lili Wang
MSEC1419	14:30-14:45	Effect of Ageing on Phase Evolution and Precipitation Behaviour of Duplex Steel	Pavel Podany
MSEC1761	14:45-15:00	Effect of Roll-bonding Temperature on Strength and Electrical Conductivity of $\alpha$ -brass-clad Cu-1Cr Alloy Composite	Gyeong Tae Kang

MSEC1826	15:00-15:15	Quantum Chemical Studies on Some New Bipyrazole Derivatives as Corrosion Inhibitors for Steel Materials	Hong Ju
MSEC1201	15:15-15:30	Facile Synthesis of Silver-tin Oxide Electrical Contact Materials by In-situ Decomposition of a Uniform Mixture Precursor	Zhijie Lin
MSEC1755	15:50-16:05	Skinning of High Thiol Content Polythiols on Copper to Inhibit Corrosion	Jin Han
MSEC1547	16:05-16:20	Effect of High Order Displacement Functions on Analysis of the Creep Behaviour in Fibrous Composites Theoretically	Vahid Monfared
MSEC1447	16:20-16:35	Backwashing Conditions of Novel Bio-Amended Sands and Its Enhanced Filtration Efficiency	Jieman Lin

### Oral Session 7 Ceramics Materials

Aug. 5<sup>th</sup>, 14:00-17:00

Chairperson: Prof. Jen-Sue Chen

Location: E11 -1027

Paper ID	Time	Paper Title	Author
MSEC1029	14:00-14:15	Preparation of ZrW <sub>2</sub> Mo <sub>8</sub> -containing Composites with Zero Thermal Expansion Property Using Al(NO <sub>3</sub> ) <sub>3</sub> •9H <sub>2</sub> O as the Sintering Aid	Qinqin Liu
MSEC1270	14:15-14:30	Real-time Nondestructive Evaluation of C/SiC Composites during Fatigue Loading	Bin Li
MSEC1287	14:30-14:45	Numerical Simulation of Metal Melt Flows in Mold Cavity with Ceramic Porous Media	Changchun Dong
MSEC1378	14:45-15:00	Study of Disorientation Angle Influence on the Thermal Residual Stresses in a Carbon Multilayer Composite Plates with Different Thickness	Jangho Lee
MSEC1424	15:00-15:15	Compound Enhancement and Performance Study of Calcium Phosphate Porous Ceramic	Jinglong Feng
MSEC1360	15:15-15:30	A Parametric Design of Ceramic Faced Composite Armor Subject to Air Weapon Treats	Yingnan Guo
MSEC1114	15:50-16:05	Study on Properties of the Laser Melting Surface Fabricated on Micro Arc Oxidation Coating in Si And Al Electrolyte	Fengbiao Wang
MSEC1809	16:05-16:20	Investigation of Delayed Ettringite Degradation in Concrete during Mass Concreting	Fan Sau Cheong
MSEC1593	16:20-16:35	A Study on the Preparation of Nano-sized Oxide Powder Fabricated from Nickel-based Alloy Scrap	Jei-Pil Wang
MSEC1473	16:35-16:50	Improvement, Characterization and Use of Waste Corn Cob Ash in Cement-based Materials	Phongthorn Julphunthong

## Oral Session 8 Other Materials

Aug. 5<sup>th</sup>, 14:00-17:00

Chairperson: Prof. Houfa Shen

Location: E11 -1028

Paper ID	Time	Paper Title	Author
MSEC1535	14:00-14:15	Accelerated Carbide Spheroidisation of 1.2343 Tool Steel by Induction Heating	Jaromír Dlouhý
MSEC1888	14:15-14:30	Challenges in the Application of 3rd Generation AHSS on Automobile Manufacturing	Fangfang Li
MSEC1890	14:30-14:45	The Application and Marketing Potential of Decorative and Functional Metallizing Textile	Qingxin Peng
MSEC1725	14:45-15:00	The Tribological and Mechanical Properties of a New Water Absorbable Epidermal Skin Equivalent	Xiangqiong Zeng
MSEC1965	15:00-15:15	Influence of Co-additive on the Electromagnetic Properties of Bi-modified 0.4PZT+0.6NiCuZn-ferrite Composites	Lijun Jia
MSEC1891	15:15-15:30	Analysis of Preform Annealing Process for the Aluminum Automotive Door Inner Panel	Yujuan Yang
MSEC1881	15:50-16:05	Biocompatibility of Double-aged High Strength Ti-15Mo-3Nb-3Al-0.2Si Alloy	Sang Yeon Ahn
MSEC1885	16:05-16:20	Motonobu Goto Structure of Electrospun Fiber Fabricated in Pressurized Carbon Dioxide	Motonobu Goto
MSEC1925	16:20-16:35	Constitutive Modeling for Al-Cu-Mg Alloy in Creep Aging Process	Youliang Yang
MSEC1255	16:35-16:50	Study on Solidification of a Steel Ingot with Experiment and Numerical Simulation	Houfa Shen

## Part IV Poster Presentation

Materials Provided by the Conference Organizer:

- 'X' Form Racks & Base Fabric Canvases (60cm×160cm, see the figure)

Materials Provided by the Presenters:

- Home-made poster

Requirement for the Posters:

- Material: not limited, can be posted on the Canvases;
- Size: 60cm×160cm;
- Content: please make sure the poster presentation be clear and easy to be understood, explanation with figures is good;
- Four corners: please make four holes in the four sides of the poster, which will make it easy to be displayed;



### Remark:

1. Each paper only has **one and a half hours** to present.
  2. Please **do not print** your poster presentation **with A4 paper**, which is not acceptable to present.
- Thanks for your cooperation!

**Poster Session 1****Aug. 5th, 09:00-10:30****Location: Faculty of Science and Technology, Learning Commons**

Paper ID	Paper Title	Author
MSEC1007	Research on a Compact Bending Device for In-situ Three-point Bending Tests Under Laser Scanning Confocal Microscope	Jianping Li
MSEC1216	The Effect of Oxygen Plasma Treatment on Nanocrystalline Diamond Films for PH Sensor	Bohr-Ran Huang
MSEC1257	The Enhancing Effect of Mesogen-Jacketed Liquid Crystalline Polymer PBPCS on Epoxy Resin	Chunpeng Chai
MSEC1326	Effect of Hydrogen Storage Ally on Combustion Properties of AP/GAP-based Propellant	Guoping Li
MSEC1375	Estimation of Thickness of Concrete Structures Using Impact Echo Method and Ultrasonic Pulse Velocity Method	SeongUk Hong
MSEC1518	An Improved Projection Method for Fatigue Parameters Solving of Metal Structures Based on Spherical Direction Cosine Group Scanning	Bing Yang
MSEC1819	Luminescent Properties of Platinum Complexes Derived from Benzene-Bridged-Bis(benzimidazolylidene) Ligand	Wan-Jung Lin
MSEC1813	Luminescent Platinum Complexes Bearing Pincer Type Bis-NHC Ligand: Syntheses, Structures and Photo Functional Properties	Wen-Shu Hwang
MSEC1820	Synthesis and Structures of Novel Luminescent Dinuclear Platinum Complexes Derived from Benzene Based Pincer-Bis(carbene) and Pyrazole Ligands	Sih-Ting Wu
MSEC1063	Structure and Magnetic Properties of Pr <sub>0.3</sub> Tb <sub>0.7</sub> Fe <sub>1.9-x</sub> Mn <sub>x</sub> Ribbons	Zhi Ren
MSEC1199	Complementary Resistive Switching of ITO/TiN/ITO Stack with Interfacial TiO <sub>x</sub> Layers	Shyankay Jou
MSEC1207	Tensile Properties of Glass/Natural Jute Fiber Reinforced Polymer Bars for Concrete Reinforcement	Ki-Won Kim
MSEC1328	Engineering of Optical Antireflection Structure by Using Ag Micro-cluster on Indium Tin Oxide Surface	Gyujin Oh
MSEC1825	Silver Triazole Metallomesogens	Ivan J. B. Lin
MSEC1358	Surface Property and Stability of Transparent Superhydrophobic Coating Based on SiO <sub>2</sub> -polyelectrolyte Multilayers	Sitthisuntorn Supothina
MSEC1897	Characterization of Bioproducts from Two Thermotolerant Bacteria	Poonsuk Prasertsan
MSEC1846	Phase Field Simulation on the Effect of Interatomic Potentials at L1 <sub>2</sub> Interface in Ni <sub>75</sub> Al <sub>16</sub> Cr <sub>9</sub> Alloy	Weiping Dong
MSEC1951	Mechanistic Study of Mesoporous SnO <sub>2</sub> Electrode for the Next Generation Li-ion Battery	Won-Sub Yoon
MSEC1530	Understanding of Phase Transformation in Pd/a-Si Bilayered System	Bing Lin
MSEC1689	Numerical Study on Two-phase Flow Erosion on Inserts of Petroleum Pipeline	Jing Cui

**Poster Session 2**

**Aug. 5th, 10:30-12:00**

**Location: Faculty of Science and Technology, Learning Commons**

MSEC1399	Grinding Point Temperature Model of ELID Oxide Film and Its Heat Transfer and Formation Mechanism of $\alpha$ -Fe <sub>2</sub> O <sub>3</sub>	Jicai Kuai
MSEC1726	Luminescence and Energy Transfer of Tm/Tb/Mn Tri-doped Phosphate Glass for White Light-emitting Diodes	Guohua Chen
MSEC1480	Impedance Spectroscopy Reveals Carrier Injection and Transport in Organic light-emitting Diode	Xiaowen Zhang
MSEC1551	Study on the Compression Moulding of Intercrossed Pre-preg GFRP	Jin-Woo Kim
MSEC1611	Coating with Al <sub>4</sub> C <sub>3</sub> Film on Diamond by Using Self-propagation High Temperature Sintering	Wangxi Zhang, Baoyan Liang
MSEC1260	Effect of Microstructure on the High Temperature Mechanical Properties of the A319 Casting Alloy for Automotive Cylinder Heads	Chang-Yeol Jeong
MSEC1354	Creep-fatigue Evaluation of Ultra-supercritical Steel by Reversible Permeability	Chungseok Kim
MSEC1563	Microstructure and Wear Behavior of the Quasi-rapidly Solidified NiAl/Cr(Mo, Dy) Hypoeutectic Alloy	Liyuan Sheng
MSEC1592	Sinus Augmentation Using RhBMP-2 on Hydroxyapatite-coated Collagen Carrier System in Rabbit	Seo Gi Young
MSEC1603	On the Preparation of Nickel Nanoparticles by Chemical Reduction Method: XAS Study	L.S. Chou
MSEC1652	Effects of Inorganic Salts on Morphology of SDS on Glass Surface	M.T.Lee
MSEC1883	Improving Thermal Stability of Natural Rubber by Modified Functionality and Compositing with Para Rubber Seed and Shell	Dutchanee Pholharn
MSEC1884	ZnO Transparent Conductive Electrodes Embedded with Pt Nanoclusters for High-efficiency GaN-based Light-emitting Diodes	Hyunsoo Kim
MSEC1591	The Effect of Controlled Release of BMP-2 Using a Hydroxyapatite-Coated Collagen Carrier System for Ridge Preservation of Extraction Sockets in Beagle Dogs	Dong Jun Kim
MSEC1639	Sb Excess (K <sub>0.458</sub> Na <sub>0.542</sub> ) <sub>0.96</sub> Li <sub>0.04</sub> Nb <sub>0.85</sub> Ta <sub>0.15</sub> Sb <sub>x</sub> O <sub>3</sub> Lead-free Piezoelectric Ceramics	Juan Du
MSEC1895	Liquid Crystals of Gold (I) NHC Complexes	Tina H. T. Hsu
MSEC1857	Computational Investigation of NH <sub>3</sub> Adsorption and Dehydrogenation on W-modified Fe(111) surface	Hui-Lung Chen
MSEC1739	Controlled Fabrication of Porphyrin-fullerene Nanopillar Arrays Regulated by the Phase Separated Infiltration of Polymer in Ternary Organic Thin-films	Jae-hyeong Lee
MSEC1793	Porous Mg Alloy MRI201S as a Structural Platform for Biodegradable Drug Delivery Device	Eli Aghion
MSEC1999	Using Droplet-based Equipment to Develop Insulin Microparticle Coated Ca(OH) <sub>2</sub> Material for Oral Formulations	Keng-Shiang Huang
MSEC2000	Microfluidic Chip Synthesis of Ca(OH) <sub>2</sub> Microspheres by Ion Exchange Method	Yun-Chul Lin



**Poster Session 3****Aug. 5th, 14:00-15:30****Location: Faculty of Science and Technology, Learning Commons**

MSEC1359	Optimization of Laser-Arc Hybrid Welding Parameters of Galvanized Steel (SGACC60) by Experimental Design Method	HeeSeon Bang
MSEC1451	Preparation and Characterization of Porous Bioceramic Layer on Pure Titanium Surfaces Obtained by Micro-arc Oxidation Process	T.Y.Kuo
MSEC1534	FMLs Fatigue Performance Comparison between Different Reinforced Fibers under Different Stress Ratio	Xin Song
MSEC1818	Acoustic Nonlinearity of Planar Slip Material Subjected to Low-cycle Fatigue	Chung-Seok Kim
MSEC1017	Load and Wear Experiment on the Impact Hammer of Impact Crusher	Jianhong Yang
MSEC1227	Ultra-High Frequency Characteristics and Variation Behavior of Double-Walled Carbon Nanotube Resonator	Jin-Tae Kim
MSEC1906	A Convenient Synthesis of Mono Substituted Triazole Mercury(II) NHC Complex	Herbert J. H. Syu
MSEC1940	Microstructure and Mechanical Properties of Ultrafine CBN-WC/Co by Adding Cr <sub>3</sub> C <sub>2</sub> Constituent	Genrong Zhang
MSEC1376	X-ray Application for Precision Measurement of the Cell Structure of Extruded Polystyrene	Ji Youn Lim
MSEC1105	Reduction of the Biodegradation Rate of MgZnSrCa Alloy by Using a Biomimetic Apatite Coating	Linliang Zhao
MSEC1161	Effect of Rapid Set Binder on Early Strength and Permeability of HES Latex Modified Road Repair Pre-packed Concrete	Chan-Gi Park
MSEC1675	Distribution Law of Steel Wire Corrosion Pit for Tied Arch Bridge	Changqing Liao
MSEC1769	Characterizing the Complex Permittivity of High-K Dielectrics Using Enhanced Field Method	Hsein-Wen, Chao
MSEC2020	Dislocation Evolution and Properties Enhancement of GH2036 by laser shock processing	Wangfan Zhou
MSEC1853	Fabrication and Secondary Forming of Al6061 Aluminum Metal Matrix Composite with Carbon Nanotube Reinforcement	Longrui Jiang
MSEC1891	Analysis of Preform Annealing Process for the Aluminum Automotive Door Inner Panel	Yujuan Yang
MSEC1904	Effect of Mn Substitution on Resistivity of LiZnMn Ferrite with Different Iron Deficiency	Xiaona Jiang
MSEC1913	Comparative Study on Mechanical Properties of CR340/CFRP Composites through Three Point Bending test by Using Theoretical and Experimental Methods	Suwon Choi
MSEC1997	Utilize Suspension Technology to Synthesis Oxaliplatin Microparticles Quantitated by High Performance Liquid Chromatography	Chuan-Jung Chou
MSEC1998	Using Microfluidic System to Synthesis Brassica oleracea Chlorophyllase 1 (BoCLH1) and Candida Rugosa Lipase (CRL) Dual-enzymes Composite Microparticles	Mao-Chen Huang

MSEC1841	Structure Analysis of Trabecular Bones by 3D Printing	Ping Ji
MSEC1996	Synthesis of Pycnopus Sanguineus-loaded Magnetic Alginate Composites Particles for Removing Malachite Green Dye by Microfluidic Chip	Ya-Hua Li
MSEC1973	The Effects of the Wavelength of LED Light to the Deposition of Gold Nanocatalysts on Different TiO <sub>2</sub> Nanostructures and Its Reactivity on CO Oxidation	Yue-Lin Yang

#### Poster Session 4

Aug. 5th, 15:30-17:00

Location: Faculty of Science and Technology, Learning Commons

MSEC1909	Finite Element Analysis for Effect of Adhesion Status of Post on Stress Distribution	Young-Tae Cho
MSEC1969	Effect of Polymer Additives on Property of Coal-Tar-Pitch Based Carbon Fiber	Jung-Dam Kim
MSEC1700	Phase Diagram and the Nucleation Rate Surface Fragments for Water	Michael Anisimov
MSEC1684	Fragments of the Helium Nucleation Rate Surfaces	Michael Anisimov
MSEC1683	The Liquid Cavitation Rate for Droplets in a Dry Gas Flow	Michael Anisimov
MSEC1977	Electrochemical Properties of KOH and CO <sub>2</sub> Activated Carbon Aerogel	Hye-In Seo
MSEC1968	Electrochemical Behavior of Alkali-Treated Coal Tar Pitch as an Electric Double Layer Capacitor Electrode	Myung-Soo Kim, Poo Reum Choi
MSEC1376	X-ray Application for Precision Measurement of the Cell Structure of Extruded Polystyrene	Ji Youn Lim
MSEC1590	Enhanced Mercury Removal by Lamella Manganese Oxide Sorbents	Han Wen Cheng
MSEC1508	Validity and Reliability of Estimated Modulus of Elasticity of Cementitious Materials	Niyazi Ugur Kockal
MSEC1453	Effects of Cryogenic Treatment on Microstructure Evaluation of the JIS SKH51 (ASTM M2) High-Speed Steel	Chung-Chun Wu
MSEC1985	Reaction between Zinc Compound and Silica Dioxide during Thermal Treatment	Yu-Ling Wei
MSEC1767	Preparation of Diamond-like Carbon Film on D263T Optical Glass with High Transmittance	Ho Chang
MSEC1749	Preparation and Characterization of LiNi <sub>0.5</sub> Mn <sub>0.5</sub> O <sub>2</sub> Cathode Materials by Pechini's Method	Yen-Pei Fu
MSEC1872	Slow Release of Phosphate Glass and Its Applications in the Lead-contaminated Soil Remediation	Lixing Luo

MSEC1283	First-principles Study of Ferromagnetism in Pd-doped and Pd-Cu-codoped BN	Qing Wang
MSEC1771	Design Optimization for Shear Key on the TF Coil Structure of the KSTAR Tokamak	Jinsik Han
MSEC1927	Structure Transformation of ZnO Nanorod Array with Twice Hydrothermal Treatment	Tingting Feng
MSEC1880	Simulation and Design of ECT Differential Bobbin Probes for the Inspection of Cracks in Bolts	Kwang-Hee Im
MSEC2006	The Fast Synthesis of Stainless Steel Doped VO <sub>2</sub> Thermo-chromic Films through Microwave Heating	Yue-Lin Yang
MSEC1921	Mineralogical Analysis and Mechano-Chemical Purification for High-Purity Silica Powder	Jesik Park
MSEC1995	Microfluidic Synthesis and Application of Vinblastine-loaded Polycaprolactone Magnetic capsules	Yu-Mei Lin

## Part V Venue

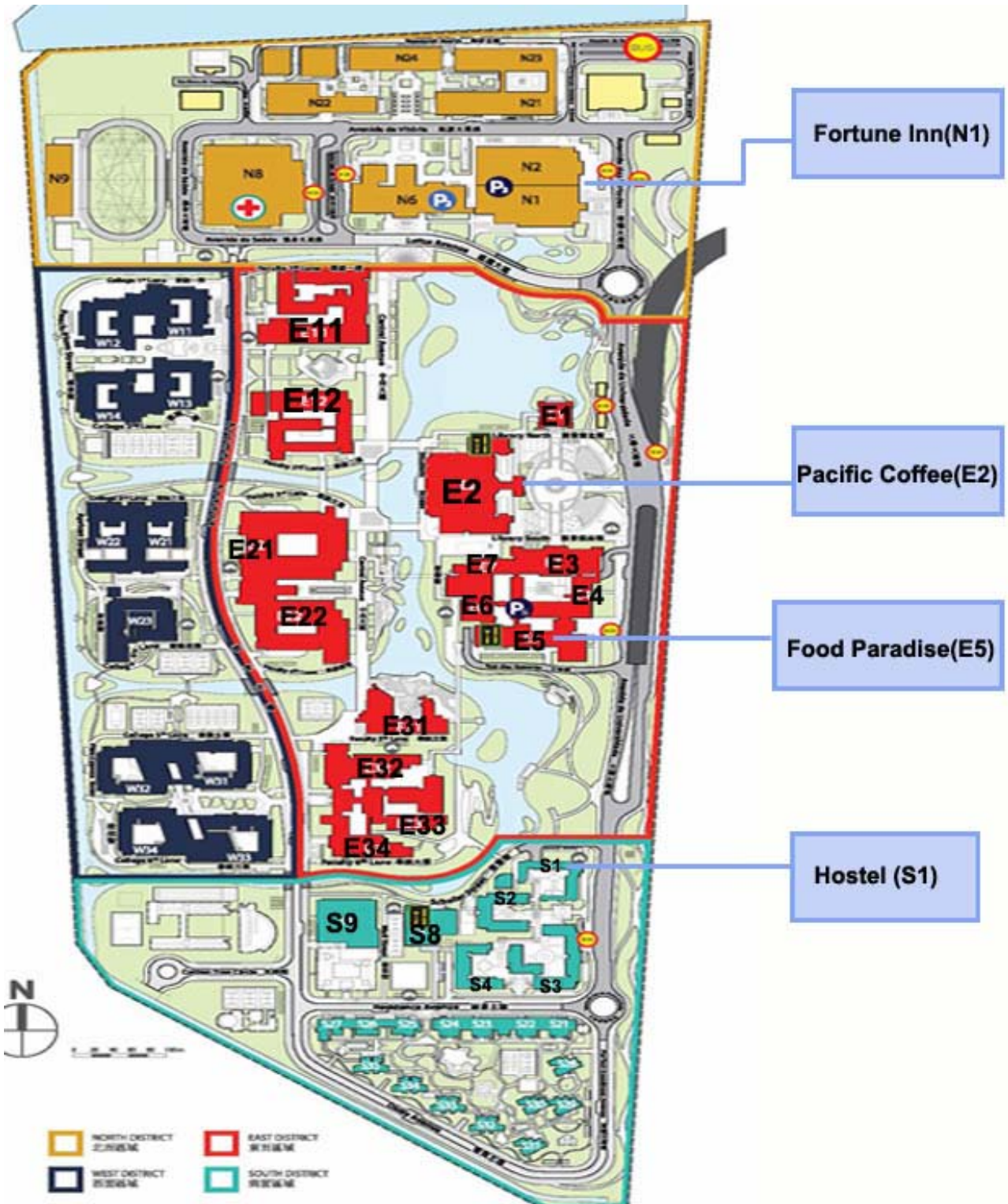
CMSE 2015 will be held during August 3rd-6th, 2015, in University of Macau-new campus located on Hengqin Island.



The University of Macau (UM) was founded in 1981. Its predecessor was the private University of East Asia. Through thirty years of development, UM has become a leading university and also the only public comprehensive university in Macao. Ever since its founding, UM has nurtured over ten thousand outstanding graduates for society.

UM has always vigorously supported scientific research development. In recent years it has developed a blueprint for transforming into a research-focused university, which, combined with a clear, shared goal among academic staff to attain first-class achievements, has led to very good academic results. Compared to the year 2008, the number of SCI research papers by UM academics in 2011 grew 90 percent, and citation frequency of published papers grew 85 percent. In certain areas, such as microelectronics, Chinese medicine, and Internet of Things, UM already ranks among the top in the Greater China region in terms of papers published at major international conferences and in prestigious journals.

## Part VI Campus Map





## Part VII Tourism

Macau is a city where East meets West, a place where traditional Chinese culture has assimilated Portuguese and Western ways to create a unique cultural mix. The many beautiful historic buildings evoke the city's collective memories, and this small city - overflowing with traditional elements – lends a wealth of inspiration to the flourishing local arts community.

### 1. The Venetian Macao-Resort-Hotel

The Venetian Macao-Resort-Hotel is invested by the Las Vegas Sands Group with about 20 billion Yuan investment. The Hotel pursues diversified business and features three thousand luxury rooms and large-scale gambling, exhibition, shopping, sports, entertainment and leisure facilities, etc., among which the exhibition venues cover an area of 110 thousand square meters.



### 2. Ruins of St. Paul

The Ruins of St. Paul's refer to the facade of what was originally the Church of Mater Dei built in 1602-1640, destroyed by fire in 1835, and the ruins of St. Paul's College, which stood adjacent to the Church. As a whole, the old Church of Mater Dei, St. Paul's College and Mount Fortress were all Jesuit constructions and formed what can be perceived as the Macau's "acropolis". Close by, the archaeological remains of the old College of St. Paul stand witness to what was the first western-style university in the Far East, with an elaborate academic program. Nowadays, the facade of the Ruins of St. Paul's functions symbolically as an altar to the city.



### 3. Lotus Flower Square of Macao

The Gold Lotus Square is located at the new port and among the Gaomeishi Street, the Bishida Street and the Youyi Street. The iconic lifelike Lotus is made from bronze and is constituted by the stem, petals and stamens. The lotus flower has a special meaning- it is bestowed to the Macau Administrative Region by the central government in December 1999 at Macau's Return to China and is with the best wish to the forever prosperity of the Macao's economy. The Gold Lotus Square has become one of the Macau's famous landmarks and tourist attractions.

