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# Part I Conference Schedule

Tuesday, Oct. 24<sup>th</sup>, 2017

Time	Activity	Location
08:30-17:30	Registration	Lobby of Sunworld Hotel

Notes: Please inform us your Paper ID when you register.

Wednesday Morning, Oct. 25<sup>th</sup>, 2017

Time	Activity	Location: 2 <sup>nd</sup> floor, Songhe Room
08:30-08:35	<b>Opening Ceremony and Welcoming Speech</b> <i>Chairman: Dr. William M. Cox</i>	
08:35-09:00	<b>Keynote Speech 1:</b> Plasmonic Properties of Nanoparticles and Nanocomposites <b>Speaker: Prof. Sigitas Tamulevičius</b>	<b>Host by</b> <i>Prof. Harry E. Ruda</i>
09:00-09:25	<b>Keynote Speech 2:</b> Prospects for Nanowire Optoelectronics <b>Speaker: Prof. Harry E. Ruda</b>	
09:25-09:50	<b>Keynote Speech 3:</b> Engineering Forecasts of High-speed Underwater Motion: Supercavitation, Polymer Injection, and Electromagnetic Breakthrough Solutions <b>Speaker: Dr. Alexander Khotsianovsky</b>	
09:50-10:15	<b>Keynote Speech 4:</b> Temperature Dependence of Young's Modulus and Damping of Oxide and Silicate Ceramics and Refractories <b>Speaker: Prof. Willi Pabst</b>	
10:15-10:40	<b>Coffee Break and Group Photo</b>	
10:40-11:05	<b>Keynote Speech 5:</b> Elastic Properties of Composite Materials <b>Speaker: Dr. R. S. Beniwal</b>	
11:05-11:30	<b>Keynote Speech 6:</b> Forensic Coating Inspection- What Is It and Why Does It Differ from Conventional Coating Inspection? <b>Speaker: Dr. William M. Cox</b>	
11:30-12:30	Poster Presentation	Lobby of 2 <sup>nd</sup> floor

**Wednesday Afternoon, Oct. 25<sup>th</sup>, 2017**

Time	Activity	Location
12:30-13:30	Buffet Lunch	1 <sup>st</sup> floor, Sunny Coffee
14:00-18:00	<b>Oral Session 1:</b> Nanomaterials	2 <sup>nd</sup> floor, Multi-functional Room
14:00-18:00	<b>Oral Session 2:</b> Energy Materials and Semiconductors	2 <sup>nd</sup> floor, Songzhu Room
18:00-19:30	Buffet Dinner	1 <sup>st</sup> floor, Sunny Coffee

**Thursday, Oct. 26<sup>th</sup>, 2017**

Time	Activity	Location
08:30-12:30	<b>Oral Session 3:</b> Mechanics and Mechanical Technologies	2 <sup>nd</sup> floor, Multi-functional Room
08:30-12:30	<b>Oral Session 4:</b> Structural Materials	2 <sup>nd</sup> floor, Songzhu Room
12:30-13:30	Buffet Lunch	1 <sup>st</sup> floor, Sunny Coffee
14:00-18:00	<b>Oral Session 5:</b> Characterization and Testing	2 <sup>nd</sup> floor, Multi-functional Room
14:00-16:45	<b>Oral Session 6:</b> Advanced Material Technologies	2 <sup>nd</sup> floor, Songzhu Room
16:45-18:00	<b>Oral Session 7:</b> Surface and Coatings Technology	2 <sup>nd</sup> floor, Songzhu Room
18:00-20:00	Welcome Banquet	2 <sup>nd</sup> floor, Songhe Room

**Friday, Oct. 27<sup>th</sup>, 2017**

Time	Activity
08:30-17:00	Tourism in Beijing: Badaling Great Wall (Gathering at the hotel lobby at 8:30 a.m.)

**Notes: Please show your *Tour Ticket* when getting on the bus as it is the **ONLY** access to the tour.**

## 大会日程

2017 年 10 月 24 日，星期二

时间	日程安排	地点
08:30-17:30	注册报到	天伦松鹤大饭店 1 楼大厅

10 月 25 日，星期三上午

时间	日程安排	地点: 松鹤厅 (2 楼)
08:30-08:35	<b>开幕式</b> 大会主席: William M. Cox 博士	主持人: Harry E. Ruda 教授
08:35-09:00	<b>主题报告 1:</b> Plasmonic Properties of Nanoparticles and Nanocomposites 报告专家: <i>Sigitas Tamulevičius</i> 教授	
09:00-09:25	<b>主题报告 2:</b> Prospects for Nanowire Optoelectronics 报告专家: <i>Harry E. Ruda</i> 教授	
09:25-09:50	<b>主题报告 3:</b> Engineering Forecasts of High-Speed Underwater Motion: Supercavitation, Polymer Injection, and Electromagnetic Breakthrough Solutions 报告专家: <i>Alexander Khotsianovsky</i> 博士	
09:50-10:15	<b>主题报告 4:</b> Temperature Dependence of Young's Modulus and Damping of Oxide and Silicate Ceramics and Refractories 报告专家: <i>Willi Pabst</i> 教授	
10:15-10:40	<b>茶歇及集体合影</b>	
10:40-11:05	<b>主题报告 5:</b> Elastic Properties of Composite Materials 报告专家: <i>R. S. Beniwal</i> 博士	
11:05-11:30	<b>主题报告 6:</b> Forensic Coating Inspection-What Is It and Why Does It Differ From Conventional Coating Inspection? 报告专家: <i>William M. Cox</i> 博士	
11:30-12:30	张贴报告	二楼大堂

**10月25日，星期三下午**

时间	日程安排	地点
12:30-13:30	自助午餐	咖啡厅（1楼）
14:00-18:00	<b>口头报告1:</b> 纳米材料	多功能厅（2楼）
14:00-18:00	<b>口头报告2:</b> 能源材料和半导体	松竹厅（2楼）
18:00-19:30	自助晚餐	咖啡厅（1楼）

**10月26日，星期四**

时间	日程安排	地点
08:30-12:30	<b>口头报告3:</b> 力学和机械技术	多功能厅（2楼）
08:30-12:30	<b>口头报告4:</b> 结构材料	松竹厅（2楼）
12:30-13:30	自助午餐	咖啡厅（1楼）
14:00-18:00	<b>口头报告5:</b> 表征和测试	多功能厅（2楼）
14:00-16:45	<b>口头报告6:</b> 先进材料技术	松竹厅（2楼）
16:45-18:00	<b>口头报告7:</b> 表面涂层技术	松竹厅（2楼）
18:00-20:00	欢迎晚宴	松鹤厅（2楼）

**10月27日，星期五**

时间	日程安排
08:30-17:00	八达岭长城一日游（上午八点半在酒店1楼大堂集合）

**温馨提示：** 请务必带上您的旅游票，凭票上车。

## Part II Keynote Speeches

### Keynote Speech 1: Plasmonic Properties of Nanoparticles and Nanocomposites

**Speaker: Prof. Sigitas Tamulevičius**

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



#### Abstract:

Plasmonic properties and the ultrafast processes taking place in noble metal nanostructures is a hot topic of the recent decades because it leads to vast range of interdisciplinary applications. Noble metal nanoparticle analysis is important in many interdisciplinary areas ranging from electrooptics, sensing to biomedical application. One of the intensively explored fields in ultrafast plasmonics is lattice dynamics of different nanostructures that takes place in picosecond time scales. Acoustical phonon excitation has been observed in different kinds of plasmonic metal nanostructures, including gold nanoparticles, nanorings and nanowires as well as silver nanocubes and even bimetallic core shell structures. Transient absorption spectroscopy traces of such nanostructures demonstrate rapid picosecond decay of the signal followed by clear modulations due to coherently excited vibrational modes. A short picosecond time scale transient signal is due to the ultrafast heating of the electron gas, followed by fast thermalization with the lattice vibrations, while on a longer time scale, clear periodic oscillations are visible together with a slowly varying background that can be ascribed to the thermalization of the nano-object with its environment.

In this work we investigated cubic Ag nanoparticles prepared by wet chemistry of different edge lengths ranging from 39 nm to 104 nm. Ultra-monodispersed colloidal nanoparticles were coated with TiO<sub>2</sub>. Analyzing the nanocube samples by means of transient absorption spectroscopy we studied the coherent oscillations of Ag nanocubes and nanocube core shell structures. The results suggest that oscillation period (40-100 ps), damping time (30-160 ps), phase and  $Q$  factor (6-22) are determined by the nanocube edge length. The presence of TiO<sub>2</sub> shell of different thickness has minor influence on the oscillation period but decreases the  $Q$  factor. We found that adding of TiO<sub>2</sub> layer on Ag nanocubes did not change the structure of cubic Ag nanoparticles showing the selected method promising for synthesis of plasmonic heterostructures.

Thermal expansion analysis was used to examine the continuum dynamics of the nanocubes in the frequency domain using finite element methods. Additionally, regular assemblies of nanocubes were deposited in hexagonal arrays on PDMS templates by employing capillary assisted particle deposition. Dark field optical microscopy demonstrated that number of particles per single trapping site has a big influence on the resonant wavelength and intensity of the scattered light.

In addition to the plasmonic effects in monodispersed particles we have conducted research of diamond like carbon based nanocomposites including metallic (Cu, Ag) nanoparticles, where we have demonstrated possible applications of the effect in photovoltaic cells.

## Keynote Speech 2: Prospects for Nanowire Optoelectronics

**Speaker: Prof. Harry E. Ruda, Department of Materials Science & Engineering, University of Toronto, Canada**



### **Abstract:**

This speech concerns the prospects and limitations for nanowire (NW) optoelectronics. Firstly, we discuss the nature of confinement of carriers in NWs, the role of surfaces and bulk defects, as reflected in the anisotropic optical response and from single NW steady state and time resolved PL. Next we discuss the role of surface state occupation on carrier transport using measurements of random telegraph noise and THz conductivity, and conclude with the implications for NW based optoelectronic devices – this includes devices such as single NW photodetectors with high gain, and ultra-sensitive electrometers.

## **Keynote Speech 3: Engineering Forecasts of High-Speed Underwater Motion: Supercavitation, Polymer Injection, and Electromagnetic Breakthrough Solutions**

**Speaker: Dr. Alexander Khotsianovsky, Pisarenko Institute of Problems of Strength of the National Academy of Sciences of Ukraine, Ukraine**



### **Abstract:**

The in-water motion speed of modern underwater vehicles and projectiles is limited by viscous resistance (drag) of water, which grows exponentially with the motion speed. In this respect, even the latest 7 Mach projectile (electromagnetic railgun), which moves seven times the speed of sound in air, is unable to go through the depth of waters of several hundred meters, unless special drag-reducing technologies are applied.

The presentation covers the state-of-the-art developments worldwide in drastic drag reduction, which can be classified as i) artificial supercavity formation behind a cavitator, ii) injection of aqueous polymer solutions, and iii) electromagnetic effect induced by Lorentz forces.

The first approach was successfully implemented in civil (SWATH) and particular military applications, e.g., Shkval (USSR, 1977) and Barracuda (Germany, 2005) high-speed torpedoes. Its operating principle includes the underwater vehicle hull separation 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, providing a very high motion speed.

The second one, related to the addition of low-concentration polymer solutions into turbulent shear flows, was introduced in 1948 by Toms (who coined the Toms effect of drag reduction by up to 80%), attained its peak of development in mid-70s due to works of Virk, Tulin, and others, but was dwindling in the last three decades, until a breakthrough solution was reported in 2015 by Chinese scientists. It implies the evolution of the cavitation flow by supplying the aqueous solutions of high-molecular linear-chain polymers, which form a “liquid membrane” around an underwater vehicle and ensure its stable in-water ultrasonic motion. In this outlook, the above achievements are compared to those of the post-Soviet school of Shkval developers (Ukraine and Russia) and HSUV (US).

The third aspect comes into light as news-breaking reports on the satisfactory launch of electromagnetic railgun projectiles by the US Navy in 2017. This principle takes the advantage of the well-known Lorentz force, which acts in the perpendicular direction to the plane encompassing the magnetic and electric currents. The underwater motion of these projectiles became the hotspot of recent research, including the ONR Project (US). In this respect, an expected 30% drag reduction and specific flow separation due to the electromagnetic effect can be combined with a conic cavitator and a single or continuous injection of polymer solutions after the moment of water entry, thus providing a quite effective water-penetrating projectile or first-stage carrier for a small-scale underwater vehicle of good maneuverability.

The advantages and limitations of the above approaches and their potentials are summarized.



## Keynote Speech 4: Temperature Dependence of Young's Modulus and Damping of Oxide and Silicate Ceramics and Refractories

**Speaker:** Prof. Willi Pabst, Department of Glass and Ceramics, University of Chemistry and Technology, Prague (UCT Prague), Czech Republic



### Abstract:

The high-temperature mechanical behavior of ceramics and refractories is determined by both elastic and anelastic contributions. While the elastic properties determine the high-temperature stiffness and thermal shock resistance of these materials, damping reflects certain deviations from elastic behavior in the vibrational response of these materials that are indicative of dissipative processes. Both elastic properties and damping are principally dependent on the phase composition, microstructure (especially the content of pores and microcracks), and temperature. While the phase composition and microstructure determines the absolute values of the elastic properties and damping, the temperature dependence of these properties often reveals phase transitions and subtle microstructural features. This contribution summarizes results of high-temperature impulse excitation measurements for several important classes of oxide and silicate refractory ceramic materials (alumina- and zirconia-based ceramics, mullite-based ceramics, kaolin- and talc-based ceramics, and silica refractories). The results indicate that the temperature dependence of the Young's modulus is not always monotonic and reversible, but may exhibit characteristic non-monotonic features due to phase transitions and hysteresis loops between heating and cooling (with or without damage accumulation) because of microcrack closure and re-opening. The temperature dependence of damping exhibits a comparable complexity. It is shown that the temperature dependence of Young's modulus and damping is particularly interesting for silica refractories, that the presence of cristobalite is easily revealed from the temperature dependence of Young's modulus and that the temperature dependence of damping can serve as a very sensitive probe providing additional information on phase transitions that may not be evident from the temperature dependence of elastic properties.

## Keynote Speech 5: Elastic Properties of Composite Materials

**Speaker: Dr. R. S. Beniwal, Sr. Principal Scientist, CSIR-NISCAIR, India**



### **Abstract:**

This speech explains the elastic properties of composite materials and provides a brief description of the knowledge of composites and basic elastic properties needed for understanding the concept. The elastic constants and their applications in the field of science and technology have also been discussed. The parameters on which elastic constants are dependent have been analyzed in brief. Nowadays, the nanostructurization process is an effective way to modify the physical, chemical and mechanical properties of the materials. In this paper, the concept of microstructure and interconnectivity of phases at interface is used. The modified version of Hashin-Shtrikman relations for bulk and shear moduli is discussed. A comparison shows that predicted values of elastic properties using modified relations are quite close to the reported experimental results.

## Keynote Speech 6: Forensic Coating Inspection-What Is It and Why Does It Differ from Conventional Coating Inspection?

**Speaker: Dr. William M. Cox, Director and Principal Consultant, Corrosion Management Limited, UK**



### **Abstract:**

Rigorous adherence to specified clauses covering surface preparation requirements, environmental conditions and methods of coating application along with coating manufacturers recommended procedures are imperative if the predicted integrity and service life of modern high-performance coating systems are to be realised. However, conventional coating inspection procedures are not intended, or necessarily are suitable, to characterize the condition of existing coatings that need either to be removed, refurbished, or left to deteriorate naturally, or to determine the optimum timing for coating maintenance interventions.

This speech outlines the principles of both routine inspection and forensic coating examination, then describes the different procedures that are applied to investigate in-situ coatings to identify aspects such as substrate contamination, toxic contaminants, degree of cure, degradation, inter-coating disbondment, suitability and/or compatibility for overcoating, removal or disposal and what these specific examinations reveal and how they are likely to impact coating removal and/or maintenance activities. Examples are included to illustrate the findings from such an examination should be used to formulate the basis of a reliable long-term corrosion protection scheme for strategic assets such as bridges, storage tanks flood barriers, etc.

## Part III Poster Presentation

### Materials Provided by the Conference Organizer:

- X Racks & Base Fabric Canvases (60cm×160cm, see the figure )
- Adhesive Tapes or Clamps
- Production of the Posters



### Materials Provided by the Presenters:

- Home-made Posters or Posters printed by the Conference Organizer

### Requirement for the Posters:

- Material: not limited, can be posted on the Canvases;
- Size: 160cm (height) ×60cm (width);
- Content: for demonstration of the presenters' paper. Please make sure the poster presentation be clear and easy to be understood, explanation with figures is good;

### Requirement for the Presenters:

- Stand beside his/her Poster through the Session, and discuss with the readers about his/her paper;
- Please **do not print** your poster presentation **with A4 paper**, which is not acceptable to present.

**Time: Oct. 25<sup>th</sup>, 11:30-12:30**

**Location: Lobby of 2<sup>nd</sup> floor**

Paper ID	Paper Title	Presenter
CMSE2887	A new raman mode in Ag doped ZnO microrods deposited via chemical vapour deposition method	Lina Wang
CMSE2903	Investigation of Cerium-lithium Sealing Treatment of Cobalt-based Conversion Coating Formed on Aluminium Alloys	Shubai Li
CMSE2947	Preliminary investigations on short laser pulses generated electromagnetic waves absorption into biological materials	Aurelian Marcu
CMSE3032	Thermal analysis of secondary flywheel in dual-mass flywheel	Yalin Duan
CMSE3047	Effect of slurry composition on the formation of zirconia granules prepared by two-fluid spray drying	Hyeongdo Jeong
CMSE3048	Sinterability of slip-casted 3Y-TZP ceramics with the control of slip viscosity and pH	Dae Sung Kim
CMSE3049	Surface roughness enhancement of zirconia substrate by the room temperature spray coating of zirconia powder	Hyeong jin Kim
CMSE3063	The use of vibrothermography for detecting and sizing low energy impact damage of CFRP laminate	Yin Li

**The 6<sup>th</sup> Global Conference on Materials Science and Engineering (CMSE2017)**

CMSE3071	Synthesis of Ag <sup>+</sup> Ion conducting hot-pressed solid polymer electrolyte	Kiran Thakur
CMSE3085	Electron backscatter diffraction (EBSD) characterization of micro-structure refinement in pure copper processed by torsion deformation	Chengpeng Wang
CMSE3159	Formation of oxide film on the surface of biomaterial Co-Cr-Mo alloy in oxygen mixed gas glow discharge plasmas	Kouichi Furukawa
CMSE3161	Spatial resolution of two-dimensional elemental mapping using scanning laser beam in laser-induced plasma optical emission spectrometry	Tetsuhiko Matsuda
CMSE3173	Studying on the best mixing ratio of coal in a power plant	Jiwei Cheng
CMSE3174	Simulation and analysis of one dimensional heat transfer system based on blended coal combustion	Wenbo Li
CMSE3194	Fluoridoaluminates of sarcosine and <i>L</i> -arginine	Aram M. Petrosyan
CMSE3195	Development of electronic prototype for visual on-site detection of nitroexplosive using organic crystalline material	Anamika Kalita
CMSE3207	ASJ cutting model based on fuzzy relations	Chiheng Qiang
CMSE3209	Design of a new abrasive slurry jet generator	Fengchao Wang
CMSE3211	Photocatalytic activity of nanocomposites of organic-inorganic hybrids of ZnO	E. Benavente
CMSE3261	Enhanced gas-sensing response by incorporating polyoxometalate into a carbonyl-substituted phthalocyanine	Yanling Wu
CMSE3263	Effective photocatalytic degradation of methylene blue by using ZnO, Ag-ZnO, g-C <sub>3</sub> N <sub>4</sub> -ZnO nanoparticles and Ag/C <sub>3</sub> N <sub>4</sub> /ZnO nanocomposite under UV light	Sadia Ata
CMSE3266	Synthesis and characterization of a novel efficiency and recyclable green catalyst for esterification of palmitic acid	Zhen Chen
CMSE3274	Thermoluminescence properties of Mg <sub>2</sub> SiO <sub>4</sub> : Tb dosimeter	Ying Zhao
CMSE3275	The role of rare earth ions on the afterglow luminescence mechanism in aluminate material	Meina Cui
CMSE3276	Thermoluminescence properties of Mg <sub>2</sub> SiO <sub>4</sub> : Tb prepared by sol-gel method	Haitao Jin
CMSE3284	Thermomechanical behavior of alumina and zirconia ceramics- porosity and temperature dependence of Young's modulus, damping, thermal expansion and thermal conductivity	Eva Gregorova

**NOTE:** If you want to make a poster presentation but your paper ID is not included in the list, please contact the organizing committee or the session chair to arrange it.

## Part IV Oral Speeches

### **Devices Provided by the Conference Organizer:**

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

### **Materials Provided by the Oral Presenters:**

- PowerPoint (Note: Please show your paper ID as CMSE\*\*\*\*\* in the last page.)

### **Duration of Each Presentation:**

- 10 Minutes of Presentation, 3-5 Minutes of Q&A

### **Note:**

- Please be access to your corresponding session 15 minutes before the start time, and you also need to tell the Session Chair that you are present.
- Best Oral Presentation: All the attendees in this session should submit the questionnaires to the session chair, and the prize will be awarded at the banquet.

**Oral Session 1: Nanomaterials**

**Session Chair: Guillermo Gonzalez**

**Time: 14:00-18:00, Oct.25<sup>th</sup>**

**Location: 2<sup>nd</sup> floor, Multi-functional Room**

<b>Time</b>	<b>Paper ID</b>	<b>Paper Title</b>	<b>Presenter</b>
14:00-14:15	CMSE2901	Quantum effects in ferromagnetic topological insulators and low-dimensional superconductors	Weiwei Zhao
14:15-14:30	CMSE2985	Development of nano-material reinforced metal matrix composites using laser aided additive manufacturing	Guijun Bi
14:30-14:45	CMSE3059	Polymer and carbon nanomaterials based composites for efficient treatment of contaminated effluents	C.N. Murthy
14:45--15:00	CMSE3065	Nanostructured chiral (salen) co catalyst bearing lewis acid: application in asymmetric ring opening reactions of terminal epoxides	Santosh Singh Thakur
15:00-15:15	CMSE3079	Effect of nanocellulose crystal on interpenetrated polymer network as compatibilizer for LDPE/PET	Vladimir Alonso Escobar Barrios
15:15-15:30	CMSE3110	Superconducting spintronics-artificial spin triplet in a controllable superconductor/ferromagnet heterostructure	Jangyong Kim
15:30-15:45	CMSE3115	Biomass derived sheet-like carbon/palladium nanocomposite for catalytic reduction of toxic hexavalent chromium	King-Chuen Lin
15:45-16:00	CMSE3136	Enhanced therapeutic efficiency with gelatin-based nanoparticles	Maria del Carmen Moran
<b>16:00-16:15</b>	<b>Coffee Break</b>		
16:15-16:30	CMSE3158	The smart actuation system based on triboelectric nanogenerator	Xiangyu Chen
16:30-16:45	CMSE3219	Vapour-Liquid-Solid nanowire grow using laser techniques	Aurelian Marcu
16:45-17:00	CMSE3224	Synthesis strategies to morphology controlling in rhenium disulfide-carbon composites	Guillermo Gonzalez
17:00-17:15	CMSE2933	Hot pressing of nanocrystalline tantalum using high frequency induction heating and pulse plasma sintering	Jaroslav Jakubowicz

**Oral Session 2: Energy Materials and Semiconductors**

Session Chair: Jan Baeyens

Time: 14:00-18:00, Oct.25<sup>th</sup>

Location: 2<sup>nd</sup> floor, Songzhu Room

Time	Paper ID	Paper Title	Presenter
14:00-14:15	CMSE2906	Thermal properties and reliability of polymer and metal-based thermal interface materials	Liangliang Li
14:15-14:30	CMSE3118	Catalyst free continuous synthesis of ZnO nanowire	Simas Rackauskas
14:30-14:45	CMSE3143	Relation of thin-film growth on defect generation in Cu(In,Ga)Se <sub>2</sub>	Takeaki Sakurai
14:45--15:00	CMSE3164	The growing potential of sintered metal fibre filters	Jan Baeyens
15:00-15:15	CMSE3165	Selection of particles for a circulation loop in solar energy capture and storage	Huili Zhang
15:15-15:30	CMSE3187	Composite “LiCl/(multi-wall carbon nano-tubes)” as advanced water sorbent for thermal energy storage: dynamic study	Alexandra Grekova
15:30-15:45	CMSE3200	Photon energy up-conversion processes in Er <sup>3+</sup> doped KYF <sub>4</sub> crystal	Ta-Ryeong Park
15:45-16:00	CMSE3226	Photovoltaic technology for flexible thin-film devices	Shalini Menezes
<b>16:00-16:15</b>	<b>Coffee Break</b>		
16:15-16:30	CMSE3229	Activity of photo production laboratory tabletop synchrotron light center	Hironari Yamada
16:30-16:45	CMSE3024	Influence of Sb substitution on thermal and electrical characteristics of Ge-Sn-Se chalcogenide glass system	Surbhi Sharma
16:45-17:00	CMSE3216	Theoretical design of transparent conductors without doping	Xiuwen Zhang
17:00-17:15	CMSE3230	Lead halide-based layered perovskite films applicable to cavity polariton devices	Masanao Era
17:15-17:30	CMSE3280	Highly charged ion tungsten plasma: material for fusion energy diagnostics	Endre Takacs
17:30-17:45	CMSE3255	High-absorption recyclable photothermal membranes equipped in bionic system for high-efficiency solar desalination via enhanced localized heating	Yizhen Liu
17:45-18:00	CMSE3268	Scaling metal hydrides for hydrogen storage based on vibrational properties	K. P. S. S. Hembram



**Oral Session 3: Mechanics and Mechanical Technologies**

Session Chair: Henry Hu

Time: 08:30-12:30, Oct. 26<sup>th</sup>

Location: 2<sup>nd</sup> floor, Multi-functional Room

Time	Paper ID	Paper Title	Presenter
08:30-08:45	CMSE3023	Simulation of multi-system microstructure evolution by coupling phase field and tensor decomposition techniques	Yuan Yuan
08:45-09:00	CMSE3125	Crystal plasticity based modeling of slip-twinning associated strain hardening for copper single crystal in large plastic deformation	Chaoyang Sun
09:00-09:15	CMSE3145	Assessment of firing patterns on moderately strong and weak sandstone cover rocks in a surface mine	Piyush Rai
09:15-09:30	CMSE3151	Novel microfabrication methodology for self-powered and continuous flow on-chip PCR	Wenming Wu
09:30-09:45	CMSE3177	New concepts for tailoring mechanical properties of alumina composites designed with compressive residual stresses	Yunfei Chang
09:45-10:00	CMSE3199	A joint analysis on the influence of processing parameters on the electrical energy consumption and tribological performance of 316L stainless steel fabricated by selective laser melting	Yi Zhu
10:00-10:15	CMSE3210	Effect of applied pressures on solidification of cast Mg Alloy AJ62	Henry Hu
10:15-10:30	CMSE2885	Effect of cyclic stresses below the endurance limit on the fatigue life of 40cr steel	Lihui Zhao
<b>10:30-10:45</b>	<b>Coffee Break</b>		
10:45-11:00	CMSE2958	Mechanical properties of dissimilar a356/saph440 lap joints by the friction stir spot welding and self-piercing rivet	Seong Min Hong
11:00-11:15	CMSE3001	Thermal properties and reliability of polymer and metal-based thermal interface materials	Feng Liu
11:15-11:30	CMSE3020	Effect of plasma arc welding variables on fusion zone grain size and hardness of AISI 321 Austenitic stainless steels	Siva Prasad Kondapalli
11:30-11:45	CMSE3074	The stochastic model of pitting corrosion of metals	Yanhua You
11:45-12:00	CMSE3102	Isothermal fatigue and creep-fatigue interaction behaviour of Ni-based directionally solidified superalloy	Amin Ul Haq
12:00-12:15	CMSE3269	High-throughput investigation of phase equilibria and diffusion behaviors of some titanium alloy systems	Xingming Huang
12:15-12:30	CMSE3244	Research on short fatigue crack behavior for Iz50 axle steel under rotating-bending load	Sheng Dai

**Oral Session 4: Structural Materials**

Session Chair: Meor Othman Hamzah

Time: 08:30-12:30, Oct. 26<sup>th</sup>

Location: 2<sup>nd</sup> floor, Songzhu Room

Time	Paper ID	Paper Title	Presenter
08:30-08:45	CMSE3106	Synthesis of Ag nanocrystal/few-layer graphite nanoplatelet composites	Shasha Li
08:45-09:00	CMSE2882	Thermoelectric polypyrrole/carbon nanoparticle composites	Cunyue Guo
09:00-09:15	CMSE2897	Superiority of the two-layer porous asphalt mixtures to resist clogging based on laboratory permeability studies	Meor Othman Hamzah
09:15-09:30	CMSE2919	Layered double hydroxides modified with chelator for the uptake of metal ions from an aqueous solution	Tomohito Kameda
09:30-09:45	CMSE2997	Synthesis of thermoelectric $\beta$ -FeSi <sub>2</sub> via directly applied current sintering	Ito Mikio
09:45-10:00	CMSE3075	Structure-Property-Function relationships of environmentally friendly polymers	Yuji Sasanuma
10:00-10:15	CMSE3093	Assessment of In-Situ concrete strength of existing RC buildings in erzurum, Turkey	R üstem G ü l
10:15-10:30	CMSE3098	Multi-phase modelling of multi-component ionic transport in composite materials: in case of recycled aggregate concrete	Qingfeng Liu
<b>10:30-10:45</b>	<b>Coffee Break</b>		
10:45-11:00	CMSE3138	Unique aggregation behavior and functions of amphiphiles having mesogenic and ethoxylated Alkyl tails in water	Masanobu Sagisaka
11:00-11:15	CMSE3139	Uptake of cadmium(II) Ions from aqueous media using new semi-inter penetrating biopolymer networks	Sahar Mostafa
11:15-11:30	CMSE3197	Melt spinning technique for preparation of magnetocaloric alloys	Jose Luis Sanchez Llamazares
11:30-11:45	CMSE3208	Applications of dithienylpyrroles-based electrochromic polymers in electrochromic devices	Tzi-yi Wu
11:45-12:00	CMSE2977	Calculating the effective permittivity and permeability of composites based on the dilution process model	Liming Yuan
12:00-12:15	CMSE3120	A numerical study on electromigration of lithiums and chlorides in concrete when subjected to combined actions: alkali-silica reaction and chloride ingress	Lixuan Mao
12:15-12:30	CMSE3277	Self-assembled monolayers as a smart strategy to arrange electro- and photo-active small organic molecules at surfaces	Patrone Lionel

## Oral Session 5: Characterization and Testing

Session Chair: Zhanli Guo

Time: Oct.26<sup>th</sup>, 14:00-18:00

Location: 2<sup>nd</sup> floor, Multi-functional Room

Time	Paper ID	Paper Title	Presenter
14:00-14:15	CMSE2923	Temper effect prediction of laser temper bead welding repair technique using neural network	Lina Yu
14:15-14:30	CMSE2999	Materials properties for processing simulation – the current status	Zhanli Guo
14:30-14:45	CMSE3033	Investigation of current routes in electrodeionization system resin beds during chromium removal	Lucia Alvarado
14:45--15:00	CMSE3069	Development of efficient multicomponent reactions in an aqueous vesicle system for design of new materials	Ryszard Ostaszewski
15:00-15:15	CMSE3103	Real-time stress measurement during silicon surface reconstruction	Hidehito Asaoka
15:15-15:30	CMSE3121	Microstructure of enhanced aluminum alloys studied by in-situ electron microscopy	Miroslav Cieslar
15:30-15:45	CMSE3133	Triboluminescence dominated by crystallographic orientation	Liran Ma
15:45-16:00	CMSE3152	Bias-current modulation method for improving the analytical performance in radio-frequency glow discharge plasma optical emission spectrometry	Kazuaki Wagatsuma
<b>16:00-16:15</b>	<b>Coffee Break</b>		
16:15-16:30	CMSE3168	Soft contact lenses exhibiting antibacterial activity	Emiliano Salvagni
16:30-16:45	CMSE3193	Crystalline compounds of dimethylglycine with polar symmetry	Aram Petrosyan
16:45-17:00	CMSE3204	Metal oxide surface chemistry and optochemical sensing	James Whitten
17:00-17:15	CMSE3228	Hybrid acoustic metamaterial as super absorber for broadband low-frequency sound	Fengxian Xin
17:15-17:30	CMSE2953	Fluorescence stress sensing with SrSiAlN <sub>3</sub> :Eu <sup>2+</sup> phosphor-silicone composite	Chaofei Qin
17:30-17:45	CMSE3185	Pseudo-in-situ investigations of carbide precipitation in a 10Cr martensitic ferritic steel	Hongcai Wang
17:45-18:00	CMSE3260	Self-assembled film and chemical sensing properties based on a triple-decker (Phthalocyaninato) (Porphyrinato) europium semiconductor	Kiran Abdullah

**Oral Session 6: Advanced Material Technologies**

Session Chair: Kung Chung Hsu

Time: 14:00-16:45, Oct. 26<sup>th</sup>

Location: 2<sup>nd</sup> floor, Songzhu Room

Time	Paper ID	Paper Title	Presenter
14:00-14:15	CMSE2890	A method of carbon fibers ultra-high temperature graphitization via laser tunnel furnace	Weimin Yang
14:15-14:30	CMSE2896	An amphoteric hydrogel: synthesis and application as a self-curing agent of concrete	Kung Chung Hsu
14:30-14:45	CMSE3067	New generation of low-cost metallic bio-implants: mechanical properties control	Mohamed Gepreel
14:45--15:00	CMSE3111	Strategic use of gold(I)/(III)-catalysts for synthesis of 2-substituted piperidines and azepanes; valency-controlled cyclization modes	Nobuyoshi Morita
15:00-15:15	CMSE3117	Atomic and electronic structure of grain boundaries in titanium dioxide	Zhongchang Wang
15:15-15:30	CMSE3129	Correlation between carrier transport and orientation evolution of polycrystalline highly transparent conductive oxide films	Tetsuya Yamamoto
15:30-15:45	CMSE3141	Theoretical analysis of sound insulation performance through multi-layered structures	Toshiaki Natsuki
15:45-16:00	CMSE2950	Low-temperature sintering of ZnO–Bi <sub>2</sub> O <sub>3</sub> -based varistor ceramics for enhanced microstructure development and current-voltage characteristics	Slavko Bernik
<b>16:00-16:15</b>	<b>Coffee Break</b>		
16:15-16:30	CMSE3198	Austenite-ferrite transformation temperatures of low carbon steels	Ivan Kohutek
16:30-16:45	CMSE3273	Cardiovascular implant calcification: an attempt to develop realistic <i>in vitro</i> circulatory model for screening new anticalcification treatments	Dimosthenis Mavrilas

**Oral Session7: Surface and Coatings Technology**

**Session Chair: Michele Ferrari**

**Time: 16:45-18:00, Oct. 26<sup>th</sup>**

**Location: 2<sup>nd</sup> floor, Songzhu Room**

<b>Time</b>	<b>Paper ID</b>	<b>Paper Title</b>	<b>Presenter</b>
16:45-17:00	CMSE2993	Role of intermetallic formation at the joint interface on strength and corrosion characteristics of dissimilar friction stir welded aluminium alloy/steel joints	K.K. Ramachandran
17:00-17:15	CMSE3123	Antifouling amphiphobic coatings for protection in sea environment	Michele Ferrari
17:15-17:30	CMSE3144	Using chloride melts as reaction media for modifying surface layers of fine Ni <sub>4</sub> Nb <sub>2</sub> O <sub>9</sub> powder	Vladimir Khokhlov
17:30-17:45	CMSE3201	Thin-film encapsulation via atomic layer deposition for organic electronic devices	Duan Yu
17:45-18:00	CMSE3096	Transparent, superhydrophobic coating on interlocking clay block for the mitigation of microbial growth	Sitthisuntorn Supothina

## Part V How to Get to Sunworld Hotel

### Sunworld Hotel

**Address:** 88 Dengshikou, Dongcheng District, Beijing, China.

**Homepage:** <http://www.sunworldhotel.com.cn/en/>

**Telephone:** (8610) 5816 8999, **Fax:** (8610) 6513 9088

**E-mail:** info@sunworldhotel.com

#### 1. Beijing Capital International Airport(北京首都国际机场) → Sunworld Hotel (26km)

1) **Taxi:** 40 minutes' drive, about 85 RMB

To taxi driver: Please take me to 北京市东城区灯市口大街 88 号天伦松鹤大饭店

2) **Metro:**

- Start from Beijing Capital International Airport T2 or T3 terminal station(北京首都国际机场) and take the Airport Line towards Dongzhimen
- At the 3<sup>rd</sup> stop(Dongzhimen)(东直门), transfer to line 2 towards Jishuitan
- At Yonghegong Lama Temple Station(雍和宫) to transfer to line 5 towards Songjiazhuang
- Alright at the 5<sup>th</sup> stop(Dengshikou Station)(灯市口)
- Exit from Exit A and walk about 500m to: Sunworld Hotel

#### 2. Beijing Railway Station(北京站) → Sunworld Hotel(3km)

1) **Taxi:** 15 minutes' drive, about 15 RMB

To taxi driver: Please take me to: 北京市东城区灯市口大街 88 号天伦松鹤大饭店

2) **Metro:**

- Start from Beijing Railway Station(北京站) and take the line 2 towards Jishuitan
- At the 2<sup>nd</sup> stop(Chongwenmen Station)(崇文门), transfer to line 5 towards Tiantongyuan North
- Alright at the 3<sup>rd</sup> stop (Dengshikou Station)(灯市口)
- Exit from Exit A and walk about 500m to: Sunworld Hotel

#### 3. Beijing West Railway Station(北京西站) → Sunworld Hotel(10km)

1) **Taxi:** 35 minutes' drive, about 35 RMB

To taxi driver: Please take me to: 北京市东城区灯市口大街 88 号天伦松鹤大饭店

2) **Metro:**

- Start from Beijing West Railway Station(北京西站) and take the line 9 towards National Labrary
- At 4<sup>th</sup> stop(Baishiqiao South Station)(白石桥南), transfer to line 6 towards Lucheng
- At the 7<sup>th</sup> stop( Dongsì Station)(东四), transfer to line 5 towards Songjiazhuang
- Alright at the 2<sup>th</sup> stop(Dengshikou Station)(灯市口)
- Exit from Exit A and walk about 500m to: Sunworld Hotel