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Part I Conference Schedule

MONDAY, JULY 8, 2019
1st Floor, Lobby of Pathumwan Princess Hotel

08:30-18:30	Conference Registration

Note: Please show us your acceptance letter or paper ID while registration.

TUESDAY, JULY 9, 2019
M Floor, Jamjuree Ballroom A+B

08:30-08:40	Welcome Speech
08:40-09:15	**Keynote Speech 1:** Progress in the Micro-mechanics of Structural Composites *Prof. Peter W. R. Beaumont, University of Cambridge, UK*
09:15-09:50	**Keynote Speech 2:** Composite Coatings for Improved Rolling Bearing Life *Prof. Esteban Broitman, SKF Research & Technology Development, The Netherlands*
09:50-10:00	PCM2019 GROUP PHOTOGRAPH
10:00-10:10	COFFEE BREAK
10:10-10:45	**Keynote Speech 3:** Cold drawn pearlitic steels as hierarchically structured nanocomposite materials for civil engineering construction - *A tribute to Fray Luis de León, Miguel de Cervantes and Johann Sebastian Bach* *Prof. Jesús Toribio, University of Salamanca (USAL), Spain*
10:45-11:20	**Keynote Speech 4: to be added** *Prof. Mitsuru Akashi, Osaka University, Japan*
11:20-12:30	Poster Presentations
12:30-14:00	BUFFET LUNCH *G Floor, Citi Bistro*
14:00-18:20	**Oral Session 1:** Mechanical, Tribological & Adsorption Properties *M Floor, Jamjuree Ballroom A* **Oral Session 2:** Biomaterials and Eco-friendly Processes *M Floor, Jamjuree Ballroom B*
18:30-20:30	WELCOME DINNER *8th Floor, Vista Bar Terrace*

WEDNESDAY, JULY 10, 2019

08:30-12:30	**Oral Session 3:** Mechanical and Tribological Properties *M Floor, Jamjuree Ballroom A*
	Oral Session 4: Electrical and Optical Properties, and Sensing Devices *M Floor, Jamjuree Ballroom B*
	Oral Session 5: Synthesis, Characterization, and Properties *M Floor, Jamjuree 2*
12:30-14:00	BUFFET LUNCH *G Floor, Citi Bistro*
14:00-18:00	**Oral Session 6:** Medical Applications *M Floor, Jamjuree Ballroom A*
	Oral Session 7: Composite Materials: Fibers, Nanowires and other Fillers *M Floor, Jamjuree Ballroom B*
18:00-21:30	AWARDING BANQUET *Cruise Dinner on Chao Phraya River*

THURSDAY, JULY 11, 2019

08:30-17:00	Field Visit - The Ancient City *Bicycle Tour*

Part II Keynote Speeches

Keynote Speech 1: Progress in the Micro-mechanics of Structural Composites

Prof. Peter W R Beaumont, University of Cambridge, UK

Abstract. Since the discovery and public announcement of carbon fibre 50 years ago, there has been a plethora of papers published in a growing number of journals on a variety of aspects of composite material systems and design methods of composite structures. But remarkably few (in percentage terms) have provided indepth insight of composite material behaviour over a spectrum of industrial applications and public sectors. In scientific terms, there has not been a thorough quantitative formulation of the relationships that connect processing and design of composite on the one hand, and durability of composite structure on the other. As a result, there lacks an understanding of what structural integrity of a composite actually means. Structural integrity requires the optimisation of microstructure and intelligent manufacturing and processing of the material to maximise the mechanical performance and reliability of the final large scale structure to avoid calamity and distress.

A perspective of current design practice, which is largely based on traditional methods of empiricism, shows that the current empirical approach is not well suited for a cost-conscious economic climate. After five decades of composite materials research, it is about time to apply existing knowledge and "know-how" to the development and exploitation of methods for lifetime prediction of large structures; to re-appraise current design practice and future design strategies; and to develop and validate risk-based assessment methodologies. This requires an integration of scientific disciplines, skills and understanding that come from a wealth of knowledge of experimental information and applied analytical procedures, and the application of modelling of various kinds including optimisation studies, and computer-based modelling.

One way forward is to fully utilise the predictive powers of modelling to optimize composite processing and design, structural integrity and performance. Undoubtedly, progress has been made in the past decade in bringing together the basic concepts and mathematical and physical models of composite behaviour and in reconciling them with each other. But progress has been such and the burden of cost enormous that industry and the engineer can reasonably be expected now to ask for a condensation of all this work to a set of effective design and optimisation methods and codes that can be applied by those who understand the underlying principles and recognise the likely dangers and limitations.

It is my contention that progress already made is sufficient to justify responding to the designer's need for computational methods of optimisation and numerical techniques that can be applied to solving a wide range of practical engineering problems. Furthermore, to recognise that the gap that opened up a decade or more ago between the dimensional domains of the physicist or materials scientist and the structural engineer requires bridging finally. This demands an understanding of the management and control of microstructure of material reoptimizing strength and structural integrity, together with a raised level of confidence in predicting performance and lifetime. We need to reconcile the irregularities of the microstructure with the assumed continua of the computational methods of modelling in order to develop the generic material by processing and design optimisation and structural integrity methodologies. This can be accomplished through an integrated approach across disciplines, industrial sectors and life cycle stages to solve problems in composite materials, structural design, performance assessment and lifetime prediction, from the conceptual stage through to processing and finally to obsolescence of the component. It is from detailed consideration of these experiences that effective design codes and methods of optimisation, structural integrity and lifetime prediction will evolve and encourage further improvement of the science and technology to develop.

At the micron level, basic research seeks a detailed understanding of the problem through elegant analysis or experimentation with conspicuous absence of immediate need for solution or time constraints. At the other end of the sizescale solutions to applied problems need not necessarily be complete and in fact a complete understanding of the problem is rarely required. The solutions require synthesis, optimisation, approximation and "feel", and they generally have a time constraint.

A fruitful route is one that begins the discussion of the design optimisation process at the constituent level and progresses by moving from one size level to the next utilising micro-mechanics or mechanism-based physical models. When combined with mathematical and continuum models and computational models, this leads to a powerful alternative to designing the empirical way. And in the hierarchy of discrete modelling methods is finite element modelling where discrete units or cells respond to body forces and temperature via constitutive equations.

An encouraging feature of recent studies is where materials science and various kinds of modelling have brought a unification of concepts and techniques for the optimisation of material microstructure and structural performance of material under load. Such modelling studies combined with continuous efforts to improve the material and manufacturing process have done much to reduce and limit the incidence of flagrant and catastrophic failures.

Thus, the multi-disciplinary approach is set to play a major role: by shortening the design-cycle time (thereby reducing costs); by maximising performance and structural integrity; by increasing reliability of materials; and by raising confidence in lifetime prediction methods for structures. It includes the integration of optimisation in the overall design and manufacturing processes, material behaviour and material modelling, and includes computational modelling across length and time scales characteristic of a variety of material and structural problems.

Keynote Speech 2: Composite Coatings for Improved Rolling Bearing Life

Prof. Esteban Broitman, SKF Research & Technology Development, The Netherlands

Abstract. During the last three decades, carbon-based composite coatings have enjoyed a growing interest in several industrial applications. By tuning the carbon sp3-to-sp2 atomic bonding ratio and by alloying the carbon with other elements, the researchers have been able to tailor unique physical, mechanical, and tribological composite properties in order to satisfy an increased technological demand.

In the first part of the talk we will show how carbon-based composite coatings can be deposited at industrial scale on steel bearings and gears using physical vapor deposition (PVD) techniques at low temperatures. The main deposition methods will be reviewed.

In the second part of the talk, we will explain how is possible to deposit films with different amount of sp2-sp3 bonding ratios by just changing fundamental deposition parameters, leading to six different microstructures: graphite, non-hydrogenated a-C (amorphous) and ta-C (tetrahedral) carbon coatings, hydrogenated a-C:H and ta-C:H films, and a soft polymeric coatings. Furthermore, the mechanical and tribological properties of the different microstructures will be discussed.

In the last part of the talk, we will describe the main applications of SKF's NoWear® carbon-based composite coated bearings to extend maintenance and life expectancy of specialized bearings and gears in the automotive and wind-energy areas.

Keynote Speech 3: Cold drawn pearlitic steels as hierarchically structured nanocomposite materials for civil engineering construction - *A tribute to Fray Luis de León, Miguel de Cervantes and Johann Sebastian Bach*

Prof. Jesús Toribio, University of Salamanca (USAL), Spain

Abstract. Cold drawn pearlitic steels possess an inherent hierarchical microstructure consisting of pearlitic colonies (*first microstructural level*) and pearlite (ferrite/Fe and cementite/Fe_3C) lamellae (*second microstructural level*), so that they can be considered as *nano-composites* from the materials science & engineering point of view. Such a microstructure evolves during the manufacturing process by cold drawing towards a preferential orientation aligned in the drawing (wire axis) direction, so that these materials acquire *microstructural anisotropy* that influences their posterior fracture and structural integrity behaviour at different scales, so that a multi-scale approach to the problem can be established, formulating the innovative concepts of *macro-, micro- and nano-structural integrity*. The paper establishes an analogy with the literature of Spanish writers Fray Luis de León and Miguel de Cervantes (through the alternate distribution of ferrite/cementite lamellae) and the composer Johann Sebastian Bach (through the hierarchical structure of his music).

Keynote Speech 4: to be added

Prof. Mitsuru Akashi, Osaka University, Japan

Abstract.

Part III Poster Presentations

Poster Guidelines

Materials Provided by the Conference Organizer:

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

Materials Provided by the Presenters:

- Home-Made Posters
- Posters printed by Conference

Requirement for the Posters:

- Material: not limited
- Size: 160cm (height) ×60cm (width)

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Best Poster Selection Guidelines

Samples of Stickers

Selection Criteria:

- Research Quality
- Presentation Skill
- Design

Selection Procedure:

- The conference general chair will invite 10-20 volunteers from invited speakers, professors and experienced researchers to serve as the judges to review the posters (Note: A judge would not have a poster or know the participant exhibiting a poster);
- 2 red stickers and 2 green stickers will be provided to the judges. The red sticker stands for "Research Quality" with a value of 2 points; the green sticker stands for "Presentation Skill and Design" with a value of 1 point;
- Each judge will go around the poster session and give the stickers to the poster which he/she think is high quality or well design and good presentation, please be noticed that the judge cannot give 2 red or 2 green stickers to the same poster (one red and one green stickers are acceptable).
- After the poster session, the Chair will count the points from each poster and select one best poster presentation with more points. If there is a tie, the one with more red (Research Quality) stickers wins; if there is still a tie, the Chair will make the final decision.

Nature of the Award

- This award consists of free registration to the PCM2020 and a certificate;
- The awards will be given during the Awarding Banquet on July 10.

List of Posters

Time: July 9, 11:00-12:00

Location: M Floor, Jamjuree A+B

PCM2678	Chick embryo chorioallantoic membrane (CAM) model for in vivo evaluation of vascular changes of polyethyleneimine and chitosan polymers-based mucoadhesive liquid crystalline for vaginal administration of CTT1 peptide *Prof. Marlus Chorilli, São Paulo State University (Unesp), Brazil*
PCM2701	Interfacial characterization of mxene/graphene/polymer matrix nanocomposites *Dr. Andrey Aniskevich, University of Latvia,Latvia*
PCM2731	Effects of cellulose nanofiber on the thermal, mechanical and optical properties of cellulose triacetate nanocomposites *Dr. Chang-Mou Wu, National Taiwan University of Science and Technology,Taiwan*
PCM2736	Radical Chain-growth polymerization computed by coarse-grained molecular dynamics simulation *Dr. Cheng-Kuang Lee, Industrial Technology Research Institute, Taiwan*
PCM2744	Surface Magnetoplasmon Emission on grating structures *Prof. Yung-Chiang Lan, National Cheng Kung University, Taiwan*
PCM2750	Wet strength properties of poly(vinyl alcohol)-microfibrillated wood composites *Assoc. Prof. William Tai Yin Tze, University of Minnesota, USA*
PCM2769	S2-dendrimer as an efficient interferon 1 delivery carrier to enhance innate immunity in zebrafish larvae *Assoc. Prof. Chia-Hsiung Cheng, Taipei Medical University, Taiwan*
PCM2782	Development status and prospect of functional peptide based composites *Ms. Yumei Yao, China Agricultural University, China*
PCM2783	The In-situ thermal conductive chain structure formed in Polyethylene (PE)/Polyethylene Terephthalate (PET) blends *Dr. Bin Yang, Anhui University, China*
PCM2793	Synthesis of complex macromolecular: side chain effects on crystallization and degradation behaviors *Prof. Yang Li, Dalian University of Technology, China*
PCM2816	Failure behavior of composite I-beams under three-point bending *Prof. Shun-Fa Hwang, National Yunlin University of Science and Technology, Taiwan*
PCM2832	Properties of thiol-ene uv-photopolymerized nanocomposites with Thiol (-SH) grafted cellulose nanocrystals as fillers *Ms. Juhyung Lee, Ms. Youna Lee, and Ms. Seosuk Park, Keimyung University, Korea*
PCM2833	One-step assembly of multi-layered structures with orthogonally oriented stripe-like patterns on the surface of a capillary tube *Assoc. Prof. Yuan Lin, Changchun Institute of Applied Chemistry, CAS, China*

PCM2835	In-line rheological properties of rubber toughened wood polymer composite *Dr. Valentina Mazzanti, University of Ferrara, Italy*
PCM2837	Hydrogel formed by organogelator through Surfactant-Mediated Gelation (SMG) method *Assoc. Prof. Kenji Aramaki, Yokohama National University, Japan*
PCM2838	Functionalized nanopaticles from styrene/methyl methacrylate gradient copolymer *Assoc. Prof. Haiying Huang, Changchun Institute of Applied Chemistry, CAS, China*
PCM2843	Electric properties of polyamide film due to temperature change *Dr. Sung Ill Lee, Korea National University of Transportation, Korea*
PCM2850	Superhydrophobic and superoleophilic Nickel foam by a simple immersion method using a mixture of polytetrafluoroethylene, fumed silica and poly (vinylidene fluoride) as binder for oil/water separation *Dr. Isheunesu Phiri, Hanbat National University, Korea*
PCM2867	Piezoelectric Properties of Inorganic $0.97(Na_{0.52}K_{0.443}Li_{0.037})(Nb_{0.923}Sb_{0.04}$ $Ta_{0.037})O_3 - 0.03(Bi_{0.5}Na_{0.5})0.9(Sr)_{0.1}ZrO_3$ Ceramics according to Sintering Time *Dr. Juhyun Yoo, Semyung University, Korea*
PCM2869	Synthesis of cyclic polyurea with CO_2 as carbonyl building blocks *Ms. Ruhui Shi, Changchun Institute of Applied Chemistry, CAS, China*
PCM2883	A Novel film-forming silicone polymer as shale inhibitor for water-based drilling fluids *Dr. Fan Zhang, China University of Petroleum (East China), China*
PCM2884	Preparation and application of a novel high temperature resistant filtration reducer in water-based drilling fluids *Dr. Xiaofeng Chang, China University of Petroleum (East China), China*
PCM2886	Temperature insensitive high dielectric constant of $ZnSnO_3$/P(VDF-TrFE) composite thin films *Dr. Chang Won Ahn, University of Ulsan, Korea*
PCM2890	Malleable polyurethane thermosets containing hindered urea bonds *Ms. Bingjie Zhao, Shanghai Jiao Tong University, China*
PCM2891	Synthesis, characterization and thermomechanical properties of polyhydroxyurethane nanocomposites containing multi-walled carbon nanotubes *Mr. Muhammad Adeel, Shanghai Jiao Tong University, China*
PCM2895	Hydrothermal synthesis of α-MoO_3 nanobelts extending in the [100] direction grown via oriented attachment using amine additive *Mr. Sanghwa Moon, Korea University, Korea*
PCM2911	Computational design of dummy molecularly imprinted polymers via hydrogen bonding investigation for oxytetracycline determination *Mr. Nikko Delos Reyes, University of the Philippines, Philippines*

PCM2912	Feasibility of oxidized soybean oil for rubber devulcanization *Ms. Colleen Anh Pegollo, University of the Philippines, Philippines*
PCM2913	Computational screening of functional monomers for the design of molecularly imprinted polymer for bitertanol for sensor application *Mr. Carlo Angelo Lacson Cayabyab, University of the Philippines, Philippines*
PCM2849	Manufacturing process and characteristics of MgB_2 composites wires *Dr. Ha-guk Jeong, Korea Institute of Industrial Technology, Korea*
PCM2842	The effect of SiC coating of carbon fiber on mechanical property in short carbon fiber reinforced Al matrix composite *Dr. Wonsik Lee, Korea Institute of Industrial Technology, Korea*
PCM2928	shRNA complex with cyclodextrin/dendrimer conjugate for treatment of hereditary amyloidogenic transthyretin amyloidosis *Dr. Masamichi Inoue , Kumamoto University, Japan*
PCM2834	Piezoelectric properties of inorganic $0.965(Na_{0.5}K_{0.5)0.97}Li_{0.03})(Nb_{0.96}Sb_{0.04})O_3 - 0.035(Bi_{0.5}Na_{0.5})_{0.9}(Sr)_{0.1}ZrO_3$ ceramics doped with Fe_2O_3 *Dr. Juhyun Yoo, Semyung University, Korea*
PCM2836	Dielectric and piezoelectric properties of inorganic $Pb(Mn_{1/3}Nb_{2/3})_{0.10-x}(Ni_{1/3}Nb_{2/3})_x(Zr_{0.5}Ti_{0.5})_{0.96}O_3$ Ceramics with High Qm *Dr. Juhyun Yoo, Semyung University, Korea*
PCM2932	Eco-Friend Flame Retarding High Temperature Poly(Cyclohexylene dimethyl terephthalate) For LED packaging application *Prof. Jinhwan Kim, Sungkyunkwan University, Korea*
PCM2933	Improvement of mechanical stability and sensor performance of Ag@MWCNT nanocomposite strain sensor via sintering of silver *Dr. Jangwoong Park, Gachon University, Korea*
PCM2930	Intensification of materials properties by adding graphene nanoribbons on poly(vinyl chloride) matrix *Dr. Young Soo Yun, Kangwon National University, Korea*
PCM2929	One-pot Synthesis of Cyclodextrin-based Polycatenanes as Novel Supermolecules *Mr. Kentaro Morita, Kumamoto University, Japan*
PCM2812	Study on the electrical properties of polypyrrole nanowires/silica composites *Mr. Weng Zhengjin, Southeast University, China*
PCM2801	Fabrication of super-hydrophobic surface on Aluminium substrate and a study of surface frosting behaviours *Dr. Zhijia Yu, Dalian University of Technology, China*
PCM2900	Synthesis of nanocomposites by polymerization of acrylic acid and development of radioactive cesium adsorbent through immobilization of prussian blue *Bokseong Kim, Korea Institute of Civil Engineering and Building Technology, Korea*

Part IV Oral Presentations

Oral Presentation Guidelines

Devices Provided by the Conference Organizer:

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

Materials Provided by the Oral Presenters:

- PowerPoint or PDF file (Please show your paper ID as PCM**** in the first and last page)

For presenters who don't send the PowerPoint to the Conference Secretary, please have your presentation ready in a memory stick, and save it in the laptop of your corresponding session about **15 minutes** before the start time. You also need to tell the Session Chair (before the start of your Session) that you are going to present your talk.

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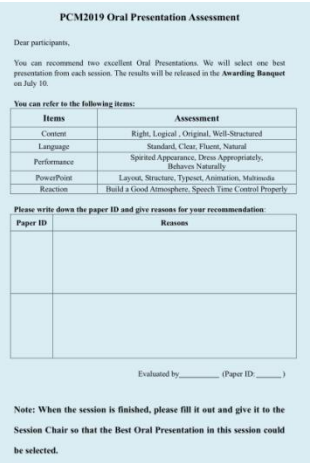
Best Oral Presentations Selection Guidelines

Selection Criteria:

A best presentation will be selected from EACH session based on the following items:

- Research Quality
- Presentation Performance
- Presentation Language
- Interaction with Listeners
- PowerPoint Design



PCM2019 Oral Presentation Assessment

Dear participants,

You can recommend two excellent Oral Presentations. We will select one best presentation from each session. The results will be released in the **Awarding Banquet** on July 10.

You can refer to the following items:

Items	Assessment
Content	Right, Logical , Original, Well-Structured
Language	Standard, Clear, Fluent, Natural
Performance	Spirited Appearance, Dress Appropriately, Behaves Naturally
PowerPoint	Layout, Structure, Typeset, Animation, Multimedia
Reaction	Build a Good Atmosphere, Speech Time Control Properly

Please write down the paper ID and give reasons for your recommendation:

Paper ID	Reasons

Evaluated by_____ (Paper ID: _____)

Note: When the session is finished, please fill it out and give it to the Session Chair so that the Best Oral Presentation in this session could be selected.

Selection Procedure:

- An assessment sheet (see above figure) will be delivered to listeners before the session;
- When the session is finished, each listener is required to fill the sheet (he/she can vote for two excellent presentations) and give it to the Session Chair;
- The Session Chair will count the votes from each presentation and select one best oral presentation with more votes. If there is a tie, the Session Chair will make the final decision.

Nature of the Award

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- The awards will be given during the Awarding Banquet on July 10.

Oral Session 1: Mechanical, Tribological and Adsorption Properties

Session Chairs:

- 14:00-15:55 *Prof. Esteban Broitman, SKF Research & Technology Development, Netherlands*
- 16:10-18:05 *Prof. Sixun Zheng, Shanghai Jiao Tong University, China*

Time: 13:30-18:05, Tuesday Afternoon, July 9

Location: M Floor, Jamjuree Ballroom A

PCM2676	14:00-14:25 *(Invited Talk)*	Acyloxyimide derivatives as peroxides alternatives for the melt functionalization of polyethylene and polyamide-11 with maleic anhydride and diethyl maleate *Prof. Emmanuel Beyou, Université de Lyon, France*
PCM2862	14:25-14:40	Fabrication and testing of a light-weight telescope mirror Using carbon fibre reinforced polymer and polishable resins *Dr. Hadi Baghsiahi, University College London, UK*
PCM2910	14:40-14:55	Processing-induced formation of ribbon-like cyclic olefin copolymer fiber for reinforcement of polyethylene blown film *Ms. Bongkot Hararak, National Science and Technology Development Agency, Thailand*
PCM2889	14:55-15:10	Shape memory and self-healing properties of linear segmented polyurethanes implemented with polyhedral oligomeric silsesquioxanes and hindered urea bonds in the main chains *Prof. Sixun Zheng, Shanghai Jiao Tong University, China*
PCM2881	15:10-15:25	The research about ultimate loadings of CFRP repaired pipe under long time seawater and bending moments *Mr. Jianhang Xin, China University of Petroleum, China*
PCM2840	15:25-15:40	Tribological improvement of Al with CNTs and Nb nanopowder for Industrial application. *Mr. Ujah Chika Oliver, Tshwane University of Technology, South Africa*
PCM2892	15:40-15:55	Prediction of parameters of microscale coating-metal interface phase based on finite element method *Mr. Zhike Jia, China University of Petroleum, China*
15:50-16:10		**COFFEE BREAK**
PCM2757	16:10-16:25	Bending properties of three-dimensional glass fabric reinforced epoxy composite T-beam *Prof. Jieng-Chiang Chen, Vanung University, Taiwan*
PCM2719	16:25-16:40	The influence of the powder additive upon selected mechanical properties of a composite *Dr. Robert Szczepaniak, Polish Air Force Academy, Poland*

PCM2671	16:40-16:55	Modeling the absorption of CO_2 in solvents enhanced by nanoparticle in polymeric membranes *Prof. Nayef Ghasem, UAE University, UAE*
PCM2846	16:55-17:10	Synthesis and characterization of Al-alloy/Al_2O_3 nanocomposites employing mechanical stirring with ultrasonic casting route *Dr. Amitesh Kumar, National Institute of Foundry and Forge Technology, India*
PCM2874	17:10-17:25	An eco-friendly lead-free organic-inorganic tin halide perovskite and its polymer composites for mechanical energy harvesting and sensing applications *Ms. Swathi Ippili, Chungnam National University, Korea*
PCM2856	17:25-17:40	Flow-induced crystallization of β-nucleated iPP investigated by in-situ synchrotron X-ray *Dr. Jianhong Chen, Xiamen University of Technology, China*
PCM2922	17:40-18:05 *(Invited Talk)*	Tensile, thermal, and transparency properties of starch based film prepared without and with ultrasonication *Prof. Hairul Abral, Andalas University, Indonesia*

Oral Session 2: Biomaterials and Eco-friendly Processes

Session Chairs:

- 14:00-16:10 *Dr. Medhat Lotfy Tawfic, National Research Centre, Egypt*
- 16:25-18:20 *Prof. Stanislaw Kuciel, Tadeusz Kościuszko Cracow University of Technology, Poland*

Time: 13:30-18:00, Tuesday Afternoon, July 9

Location: M Floor, Jamjuree Ballroom B

PCM2824	14:00-14:25 *(Invited Talk)*	Design of biomaterials for culture & differentiation of human pluripotent stem cells *Prof. Akon Higuchi, National Central University, Taiwan*
PCM2732	14:25-14:40	Novel hybrid composite based on bioPET with basalt/carbon fiber *Prof. Stanislaw Kuciel, Tadeusz Kościuszko Cracow University of Technology, Poland*
PCM2829	14:40-14:55	Evaluation of thermal and interfacial properties of cf/epoxy composites with bamboo charcoal fractions by 14ehavior14anical techniques *Mr. Jong-Hyun Kim, Gyeongsang National University, Korea*
PCM2863	14:55-15:10	Powder cellulose nanocrystal (CNC) from industrial waste offcut cotton textile for a new sustainable nanofiller *Dr. Toshihiko Arita, Tohoku University, Japan*

PCM2857	15:10-15:25	Effect of storage environment on the crystallinity and compressive load of starch based biodegradable cup *Ms. Ray Anne Garalde, Industrial Technology Development Institute, Philippines*
PCM2904	15:25-15:40	Functionalization of $Fe_3O_4/TiO_2/BiOCl$ nanocomposites using Sargassum crassifolium extract as magnetic nanophotocatalyst for cadmium sequestration *Mr. Rey Marc Cumba, MSU-Iligan Institute of Technology, Philippines*
PCM2914	15:40-15:55	Enhancing the shrinkage, flexural strength and specific puncture load of wood composites using method *Ms. Natcha Prakymoramas, National Science and Technology Development Agency, Thailand*
PCM2916	15:55-16:10	Potential anti-corrosion additives derived from waste plastic sachets *Mr. Francis Darwin Eugenio, University of the Philippines, Philippines*
16:10-16:25		**COFFEE BREAK**
PCM2827	16:25-16:40	Study of poly(lactic acid)/poly(ethylene oxide) blend-based biodegradable nanocomposites *Dr. Kartik Behera, Chang Gung University, Taiwan*
PCM2738	16:40-17:05 *(Invited Talk)*	Novel lignin based porous composites *Prof. Surojit Gupta, University of North Dakota, USA*
PCM2780	17:05-17:20	Polycaprolactone blends with oxo- degradable polyethylene *Dr. Medhat Lotfy Tawfic, National Research Centre, Egypt*
PCM2866	17:20-17:35	Mussel-inspired polymer: a photocurable and degradable polymer network for adhesives *Dr. Xiaoyong Zhang, Harbin Institute of Technology, China*
PCM2814	17:35-17:50	A novel amidoxime-functionalized UV-cured hydrogel for application of uranium recovery from seawater *Dr. Wijittra Wongjaikham, Chulalongkorn University, Thailand*
PCM2915	17:50-18:05	Optimization by RSM for the preparation of bioresin from palm oil *Prof. Mohammad Dalour Hossen Beg, Univeriti Malaysia Pahang, Malaysia*
PCM2934	18:05-18:20	Design and development of CO_2 sensor via nanotechnology for human safety and environmental monitoring *Dr. G. Sarala Devi, CSIR-Indian Institute of Chemical Technology, India*

Oral Session 3: Mechanical and Tribological Properties

Session Chair:

- 08:30-10:35 *Prof. Philippe Olivier, Université de Toulouse, France*
- 10:45-12:15 *Prof. Sergei Alexandrov, Beihang University, China*

Time: 08:30-12:15, Wednesday Morning, July 10

Location: M Floor, Jamjuree Ballroom A

PCM2702	08:30-08:55 *(Invited Talk)*	Multifunctional polymeric nanocomposites *Prof. Soney George, Amal Jyothi College of Engineering, India*
PCM2727	08:55-09:20 *(Invited Talk)*	Singular solutions in the vicinity of frictional interfaces for material models used in the mechanics of polymers *Prof. Sergei Alexandrov, Beihang University, China*
PCM2826	09:20-09:35	Improved wear resistance and mechanical properties of multifunctional polymer nanocomposites for advance engineering applications *Mr. Uyor Uwa Orji, Tshwane University of Technology, South Africa*
PCM2734	09:35-09:50	Effect of wood/basalt hybridization on crystallization and mechanical properties of PLA *Dr. Karolina Mazur, Tadeusz Kościuszko Cracow University of Technology,Poland*
PCM2733	09:50-10:05	Controlled modification of interphase and its influence on shear strength of polymer composites *Prof. Vladimír Cech, Brno University of Technology, Czech Republic*
PCM2691	10:05-10:20	Micromechanical modeling of novel MXene/polymer nanocomposites *Assoc. Prof. Daiva Zeleniakiene, Kaunas University of Technology, Lithuania*
PCM2792	10:20-10:35	Highly toughened polylactide with epoxidized polymer by in-situ reactive compatibilization *Dr. Xuefei Leng, Dalian University of Technology, China*
10:35-10:45		**COFFEE BREAK**
PCM2804	10:45-11:00	Preparation, cure characterization and mechanical properties of bisphenol a dicyanate ester modified thermosetting styrene – butadiene composites *Assoc. Prof. Quan Zhou, East China University of Science and Technology, China*

PCM2831	11:00-11:15	New evaluation of interfacial properties between fiber and matrix of composite materials using microdroplet tests using acoustic emission *Mr. Pyeong-Su Shin, Gyeongsang National University, Korea*
PCM2819	11:15-11:30	Prediction of process-induced strains and deformations during the manufacturing process of co-bonding of composite parts *Prof. Philippe Olivier, Université de Toulouse, France*
PCM2777	11:30-11:45	Development of casing / rolling processing rout for advanced AlSiCp Strips for lightweight constructions *Prof. Mohamed A. Taha, Ain Shams University, Egypt*
PCM2781	11:45-12:00	Microstructure and mechanical properties of Al/SiC surface composite with different volume fractions using Friction Stir Process *Prof. Nahed El Mahallawy, The German University in Cairo, Egypt*
PCM2927	12:00-12:15	Particulate NanoCarbon Synthesis and Mechanical Property Enhancements in Structural Al6061 Aluminium *Dr. O. John Dada, Hong Kong University of Science and Technology, Hong Kong*

Oral Session 4: Electrical and Optical Properties, and Sensing Devices

Session Chair:

- 08:30-10:35 *Prof. Aminul Islam, Technical University of Denmark, Denmark*
- 10:45-12:30 *Prof. Hwan Kyu Kim, Korea University, Korea*

Time: 08:30-12:30, Wednesday Morning, July 10

Location: M Floor, Jamjuree Ballroom B

PCM2749	08:30-08:55 *(Invited Talk)*	Cr^{3+}-activated phosphors: advanced ratiometric luminescent thermometers for biological applications *Dr. Michele Back, Kyoto University, Japan*
PCM2803	08:55-09:20 *(Invited Talk)*	Copolymer-templated tellurium-doped mesoporous carbons as a superior counter electrode for dye-sensitized solar cells *Prof. Hwan Kyu Kim, Korea University, Korea*
PCM2725	09:20-09:35	Pseudocapacitive materials for efficient electrochemical capacitors *Prof. Kim Byung Chul, Sunchon National University, Korea*
PCM2774	09:35-09:50	A novel anion-exchange membrane and its application in electrochemical supercapacitor *Mr. Zhi-Bin Lin, Xiamen University, China*

PCM2772	09:50-10:05	Processing of nano boron carbide reinforced flexible polymer composites with improved shielding properties *Prof. Cengiz Kaya, Sabancı University, Turkey*
PCM2799	10:05-10:20	A Quinacridone-Diphenylquinoxaline-Based copolymer for organic field-effect transistors *Dr. Tae Kyu An, Korea National University of Transportation, Korea*
PCM2871	10:20-10:35	Synthesis and characterization of Sodium Niobate and Zinc Oxide nanorods added nanocomposite PVDF films *Prof. Mukesh Chander Bhatnagar, Indian Institute of Technology*
10:35-10:45		**COFFEE BREAK**
PCM2882	10:45-11:00	Enhanced dielectric property and energy density of poly(vinyl pyrrolidone) modified carbon quantum dots/PVDF nanocomposites *Ms. Nian Li, Wuhan University of Technology, China*
PCM2907	11:00-11:15	A facile approach to fabricate p-Pani/n-Si(100) heterojunction for light sensing application *Ms. Jose Presiphil B. Ontolan Jr., MSU-Iligan Institute of Technology, Philippines*
PCM2858	11:15-11:30	PBAT/PP blend-based nanocomposites with enhanced properties *Prof. Fang-Chyou Chiu, Chang Gung University, Taiwan*
PCM2817	11:30-11:45	Conductive composites based on hybrid fillers: Production and characterization *Prof. Aminul Islam, Technical University of Denmark, Denmark*
PCM2771	11:45-12:00	Fabrication and properties of broadband antireflective coatings on inert perfluoropolymer films treated by inductively coupled oxygen plasma *Dr. Laixi Sun, China Academy of Engineering Physics, China*
PCM2770	12:00-12:15	Preparation and properties of fast–response solid scintillators *Dr. Shufan Chen, China Academy of Engineering Physics, China*
PCM2717	12:15-12:30	Reversible polymer nano molding lithography *Dr. Jae Hong Park, Korea National NanoFab Center, Korea*

Oral Session 5: Synthesis, Characterization, and Properties

Session Chair:

- 08:30-10:35 *Dr. Tomoya Sato, National Institute of Advanced Industrial Science and Technology (AIST), Japan*
- 10:45-12:30 *Prof. Eamor M. Woo, National Cheng Kung University, Taiwan*

Time: 08:30-12:30, Wednesday Morning, July 10

Location: M Floor, Jamjuree 2

PCM2707	08:30-08:55 *(Invited Talk)*	Hybrid quantum-classical dynamics simulation of adhesion strength between Al and epoxy in a moist environment *Prof. Shuji Ogata, Nagoya Institute of Technology, Japan*
PCM2798	08:55-09:20 *(Invited Talk)*	Structured lamellar assembly in correlation with cooling-induced cracking tracks in crystallized polyesters *Prof. Eamor M. Woo, National Cheng Kung University, Taiwan*
PCM2876	09:20-09:35	Synthesis of polyurea via the addition of carbon dioxide to a diamine *Assoc. Prof. Haiyang Cheng, Changchun Institute of Applied Chemistry, CAS, China*
PCM2905	09:35-09:50	Synthesis and characterization of ZnO/cotton composite for the photocatalytic degradation of methylene blue dye *Mr. John Robert Guerrero, MSU-Iligan Institute of Technology, Philippines*
PCM2779	09:50-10:05	Hydrophobic modification by Polydimethylsilane-grafted-silica nanoparticles for enhanced membrane anti-wettability *Dr. Toh Moau Jian, Universiti Teknologi PETRONAS, Malaysia*
PCM2864	10:05-10:20	Influence of short chain branching on crystallization of bimodal high density polyethylene *Dr. Senthil Kumar Kaliappan, Borouge Pte Ltd., UAE*
PCM2785	10:20-10:35	Size control of polymer/Cu composite with ordered array structure *Dr. Bo Yang, China Academy of Engineering Physics, China*
10:35-10:45		**COFFEE BREAK**
PCM2800	10:45-11:00	Effects of dicumyl peroxide on properties of polylactic acid-polybutylene succinate-activated carbon composite foams *Dr. Darunee Aussawasathien, National Metal and Materials Technology Center, Thailand*
PCM2722	11:00-11:15	Novel acid soluble consolidating material to overcome lost circulation problems in reservoir intervals with multiple leakage zones *Dr. Jie Feng, China University of Petroleum (Beijing), China*

PCM2813	11:15-11:30	A scalable green method to fabricate durable PP/PTFE nanocomposite foam *Dr. Xin Jing, Hunan University of Technology, China*
PCM2709	11:30-11:45	Ultra-large-scale preparation of hydrophilic polymer blushes in Air *Dr. Tomoya Sato, National Institute of Advanced Industrial Science and Technology (AIST), Japan*
PCM2885	11:45-12:00	The effect of salts and temperature on molecular aggregation behavior of acrylamide polymer *Ms. Jingyuan Ma, China University of Geosciences (Beijing), China*
PCM2790	12:00-12:15	Studying the effect of Alum as a flame retardant in polyethylene with sawdust composite *Dr. Emad Saad Faheem, National Research Centre, Egypt*
PCM2740	12:15-12:30	Synthesis and application of CoOx-ZrO_2 composite oxide as highly active catalyst on the steam reforming of ethanol *Prof. Chen-Bin Wang, National Defense University, Taiwan*

Oral Session 6: Medical Applications

Session Chair: Prof. Maria Cristina Tanzi, Politecnico di Milano, Italy

Time: 14:00-17:30, Wednesday Afternoon, July 10
Location: M Floor, Jamjuree Ballroom A

PCM2815	14:00-14:25 *(Invited Talk)*	Fundamental study of nanoscale protein-polymer interactions and potential contributions to solid-state protein nanoarrays *Prof. Jong-In Hahm, Georgetown University, USA*
PCM2713	14:25-14:50 *(Invited Talk)*	Biomimetic composites based on polyurethane matrices for bone tissue engineering *Prof. Maria Cristina Tanzi, Politecnico di Milano, Italy*
PCM2767	14:50-15:15 *(Invited Talk)*	Evaluation of Ag doped hydroxyapatite coatings in three different acellular media: SBF, DMEM and PBS *Prof. Alina Vladescu, National Institute for Optoelectronics, Romania*
PCM2699	15:15-15:40 *(Invited Talk)*	Fabrication of hierarchically porous Zinc Oxide scaffolds by Supercritical CO_2 processing *Prof. Sudhir Kumar Sharma, New York University Abu Dhabi, UAE*
15:40-16:00		**COFFEE BREAK**
PCM2712	16:00-16:15	Potentialities of electrospun scaffolds based on PVA for biomedicine *Ms. Marta A. Teixeira, University of Minho, Portugal*

PCM2681	16:15-16:30	Biodegradable PVA/CA dressings functionalized with LL37 peptide reduce microbial action and colonization *Dr. Helena Felgueiras, University of Minho, Portugal*
PCM2870	16:30-16:45	Design and characterization of poly (L-lactic) acid microcarriers with and without modification of chitosan and nanohydroxyapatite *Ms. Liying Li, Dalian University of Technology, China*
PCM2909	16:45-17:00	*In vitro* bioactivity assessment of solution precursor plasma sprayed copper-doped hydroxyapatite coatings using simulated body fluid *Mr. Romnick Unabia, Mindanao State University – Iligan Institute of Technology, Philippines*
PCM2841	17:00-17:15	Corrosion resistance behavior of Magnesium matrix composites for biomedical applications *Assoc. Prof. Ghanshyam Das, National Institute of Foundry and Forge Technology, India*
PCM2761	17:15-17:30	Host-guest complex of oncostatic drug Lomustine/ β-cyclodextrin: NBO, QTAIM and NCI-RDG analysis *Dr. Nadjia Bensouilah, University of Sciences and Technology Houari Boumediene, Algeria*

Oral Session 7: Composite Materials: Fibers, Nanowires and other Fillers

Session Chair: Prof. Volodymyr Chernenko, BCMaterials & University of the Basque Country (UPV/EHU), Spain

Time: 14:00-17:55, Wednesday Afternoon, July 10
Location: M Floor, Jamjuree Ballroom B

PCM2852	14:00-14:25 *(Invited Talk)*	The blast behavior of glass and carbon fibre reinforced composite laminate *Prof. Mohd Yazid Yahya, Universiti Teknologi Malaysia, Malaysia*
PCM2758	14:25-14:50 *(Invited Talk)*	Ni-Mn-Ga/polymer smart composites *Prof. Volodymyr Chernenko, BCMaterials & University of the Basque Country (UPV/EHU), Spain*
PCM2726	14:50-15:05	Evaluation of fibre orientation in fibrous assembly by tracer fibre technique *Dr. Rupayan Roy, Indian Institute of Technology Delhi, India*
PCM2845	15:05-15:20	Assessment of the physical properties of banana pseudo stem/ ABS Composites *Dr. Taiser Attia, Ain Shams University, Egypt*

PCM2743	15:20-15:35	Evaluation the effect of CNT growth by microwave-assisted process in composites materials with recycled carbon fibers *Dr. Carlos Medina, University of Concepción, Chile*
PCM2794	15:35-15:50	Thermal aging mechanism and life prediction model of glass fiber/vinyl ester resin composites *Prof. Ruigang Hou, East China University of Science and Technology, China*
15:50-16:10		**COFFEE BREAK**
PCM2820	16:10-16:25	Distribution of fillers and reinforcements in injection moulded thermoplastic composites: Case study of glass bubbles *Dr. Taiser Attia, Ain Shams University, Egypt*
PCM2847	16:25-16:40	Vibration analysis of fiber reinforced composite hydrofoils using finite element method *Mr. Beom-Jin Joe, Seoul National University, Korea*
PCM2729	16:40-16:55	Synthesis and characterization of in situ reinforced Al-based metal matrix composite processed by spark plasma sintering *Assoc. Prof. Debdas Roy, National Institute of Foundry and Forge Technology, India*
PCM2848	16:55-17:10	Dynamic response analysis of polyoxymethylene hydrofoils using the hybrid pitch mode FSI method *Mr. Won-Seok Jang, Seoul National University, Korea*
PCM2724	17:10-17:25	Breakthrough adsorption of carbon dioxide on biogenic silica-chitosan nanocomposites *Dr. Bryan B. Pajarito, University of the Philippines, Philippines*
PCM2902	17:25-17:40	Metal-oxide nanotubes functional material tailored for membrane water/wastewater treatment *Prof. Hazim Qiblawey, Qatar University, Qatar*
PCM2926	17:40-17:55	*In-situ* reduced graphene filled epoxy nanocomposite with highest storage modulus *Dr. O. John Dada, Hong Kong University of Science and Technology, Hong Kong*

Part V Conference Venue

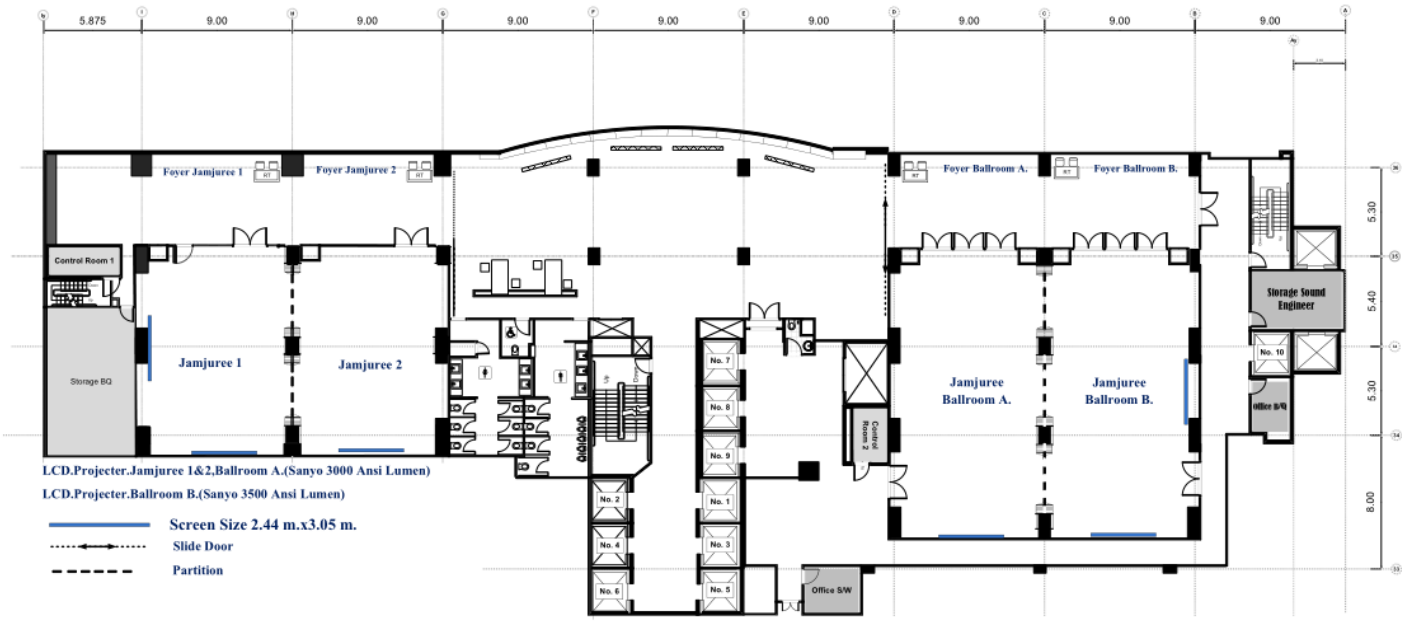
Pathumwan Princess Hotel
Address: 444 MBK Center, Phayathai Road, Wangmai, Pathumwan, Bangkok 10330
Tel.: (+66) 2216 3700 Fax: (+66) 2216 3730
Website: https://www.pprincess.com/

Access to Venue

FROM AIRPORT TO HOTEL BY TAXI
Taxi stands are clearly signposted at both airports. There is a small charge levied by the airports which is added to the taxi fare by the driver. All taxis are metered.

FROM SUVARNABHUMI AIRPORT (ABOUT 50 MINUTES)
Take SRTET City Line to Phaya Thai Station and interchange to Phayathai BTS Station → Take BTS Sukhumvit Line to Siam Station → Alight at Siam Station and walk for 9 minutes until you see the Hotel.

Floor Plan of Conference Rooms



Part VI Field Visit

Schedule

08:30 Depart from the Conference Venue
09:20-12:00 Explore the Ancient City by Bicycle
12:00-13:30 Lunch (Traditional Thai Food)
13:30-17:00 Continue the Exploration
17:00 Back to the Conference Venue

Brief Introduction of the Ancient City

The Ancient City (Muang Boran in Thai), dubbed as the world's largest outdoor museum, spreads over 200 acres (0.81 km2) in the shape of Thailand featuring 116 structures of Thailand's famous monuments and architectural attractions. The Ancient City is like an open book of history and an open door to the real Thailand. Here you will find numerous reproductions of palace halls, temples, stupas, stone sanctuaries and traditional houses. You can also visit several reconstructed historical buildings, authenticated communities with their inhabitants doing their daily chores and sample villages from all regions of the country.

You could visit the spots you are interested. The following are some representative spots in it.

Floating market

The cluster of buildings in this floating market was removed from the original site and rebuilt in Muang Boran. There are several restaurants here and it’s a pleasant place to stop for a meal, drinks and so on.

Pavilion of the Enlightened

The Pavilion of the Enlightened symbolizes the story of 500 monks from different cultural backgrounds who attained Nirvana. It's a stunning structure. The pavilion stood 10 ft. (3 m) off the ground. A lavish golden dome covered the platform.

Bodhisattva Avalokitesavara

Avalokiteśvara is a bodhisattva who embodies the compassion of all Buddhas. Bodhisattva Avalokitesavara (Kuan Yin) depicts the benevolent Goddess of Mercy performing a miracle to fend off evil forces. This is a good place for you in Ancient City once you feel hot.