

**ICCE-26 Paris, France** Monday morning opening ceremony, rector of D.U.Th. at 8:30AM

Monday July 16, 2018 **KEYNOTES LECTURES** Chairs: Kendall Harris, Abdalla Darwish

Monday morning Opening Ceremony speech, 8:15AM-8:30AM

8:30AM-9:10AM

**Clean Energy from Seawater** Lionel **Vayssieres** (Xian, China) mon morning

9:10AM-9:50AM

**Production Of Conductive Hybrid Nanocomposites And Fibre Yarns** **Debes** Bhattacharyya (U. Auckland, New Zealand)

9:50AM -10:30AM

**Literally Big Nano: Nanocomposites and Hierarchical Nanoengineered Advanced Composites for Enhanced Mechanical and Multifunctional Performance** Brian L. Wardle (MIT, Cambridge, Massachusetts)

10:30AM-11:10AM

**Development, Prospect and Challenges of Construction Materials using Nano-engineering Concept** Denvind Lau (City U. Hong Kong, China)

11:10AM-11:50AM

**Status and Prospects of Tough Structural Fibers** Yuris Dzenis (U. Nebraska-Lincoln)

11:50AM-12:30pm

**Development Of Smart Composite Materials For Offshore Wind Applications** Monssesf Drissi Habti (IFSTTAR, France)

12:30PM-1:30PM **LUNCH ON YOUR OWN**

(continued top of next page for keynote talks on Monday afternoon)

Session 1a Tuesday 8:30AM-10:40AM Room A

**GENERAL 1** *Fiber Reinforcement –Application Trends*

Chairs: N. Seetala, M. Cerny, Z. Chlup, Guang-Min Luo

**Magnetic FePt/Fe<sub>2</sub>O<sub>3</sub> Nanoparticle Structures By Conventional And Laser**

**Annealing** Naidu **Seetala**, Deidre Henderson (Grambling State U., Louisiana), Shengmin Guo (Louisiana St.U., Baton Rouge)

**What kinds of CFRP should be selected for Championship class**

**Solar car?** Kimura (Japan) invited

**Exploration Of Multifunctional Properties Of GrapheneNanoplatelet**

**/Carbon Fiber/Epoxy Composite: Mechanical Strength And**

**Midwave Absorption** Maryam **Jahan**, Richard Osuemesi Inakpenu,

Kuo Li, Guang-Lin Zhao, Patrick Mensah (Southern Univ. Baton Rouge, Louisiana)

**Technology Of Partially Pyrolysed Composites Using Advanced Solvent-Free**

**Polysiloxane Resins** Martin **Cerny** (ASCR Prague, Czech Rep.), Zdeněk Chlup

(ASCR, Brno), Adam Strachota, Jaroslava Svitilová (ASCR Prague), Martina

Halasová (ASCR Brno), Jana Schweigstillova (ASCR Prague)

**Effect Of Reinforcing Fibres Composition On The Behaviour Of Partially**

**Pyrolysed Composite** Zdeněk **Chlup** (ASCR, Brno, Czech Rep.), Martin Černý

(ASCR, Prague, Czech Rep.), Martina Halasova (ASCR, Brno), Adam Strachota

(ASCR, Prague)

**Study On Strength Improvement Of FRP-To-Steel Heterogeneous Joints**

**Guang-Min** Luo, Cheng-Huan Tsai (Nat Kaohsiung UST, Taiwan)

**Cutting And Thermal Analysis Of Crusher Machine For Soybean Powder**

**Production** **Wonsik** Choi, Pandu Sandi Pratama, Supeno Destiani, Jaeyoung

Byun (Pusan Nat.U., S.Korea) Tues-wed morn

**Elements Of Nano Safety Policy In Armenia** Anahit **Aleksandryan**

(Min Nature Protection, Armenia)

Session 1b Tuesday 8:30AM-10:40AM Room B

**MATH 1** *analysis of multiphysics coupling and functional composites*

Chairs: P. Jindal, Haixiao Hu, S. Sikulskyi, Zhen-bing Cai

**Relation Between The Dynamic And Static Instability Load Of The**

**Shallow Hybrid Composite Cylindrical Shells With Shape Memory**

**Alloy Wires Under Impulse Load** Ghazaleh **Soltanieh**, Mohammad Z

Kabir (Amirkabir U.T., Tehran, Iran)

**Studies on Fiber Reinforced Polypropylene Thermoplastic Composites by**

**Film Stacking Method** M. **Mudhukrishnan**, K.R. Senthilkumar, S. Raja

Sabarinath, R. Karthik (RMK Eng. Coll., Chennai, India)

**Dynamic Mechanical Characterization of PC/MWCNT Composites Under**

**Variable Temperature Conditions** Prashant **Jindal** (Panjab U., Chandigarh,

India)

**Analysis Of Load Distribution In Multi-Bolt Composite Joints With Liquid**

**Shim** Guoqiang Gao, Luling AN, Xuande Yue (NUAA, Nanjing, China)

**Patterning of Graphene Nanoplatelets on Sensing for Piezoresistive Hybrid**

**Nanocomposites** Y. **Gola**, A. Gbaguidi, Daewon KIM, S. Namilae (Embry

Riddle Aero U., Daytona Beach, FL) Tues-Wed

**On the Performance of Soft Active Composites with Helical Dielectric**

**Elastomer Actuators** S. **Sikulskyi**, D. Kim, and Y. ZHAO (Embry Riddle Aero

U., Daytona Beach, FL) Tues-Wed

**Impact Resistance Of Bionic Functional Composite Materials inspired**

**Frombeetle** Zhen-bing **Cai**, Zheng-yang Li, Yuan Ding, Min-hao Zhu (Southwest

Jiaotong U., Chengdu, China)

**A Strategy Of Microstructure-Based Simulations Of Deformation**

**Phenomena In Composite Materials** Varvara A. **Romanova**, Ruslan R.

Balokhonov, Evgeniya S. Emelianova, Maxim V. Sergeev (RAS, Tomsk, Russia)

Session 1c Tuesday 8:30AM-10:40AM Room C

**Energy 1 (Oxide)** *key issue: Engineering Applications*

Chairs: Tamio Endo, J. Hato, M. Godlewski, Zuying Feng

**Improvement Of Photovoltaic Properties Of Doctor Blade-Based**

**ZnO/Cu<sub>2</sub>O Heterojunction By Graphene Oxide** Nelly Ma. **Rosas-**

Laverde, Jesus Cembrero, Javier Orozco-Messana (U. Politec Valencia,

Spain), Alina Pruna (U. Bucharest, Romania)

**Prediction Of Properties Of Graphene Oxide Reinforced Aluminium**

**Matrix Composites** Bhagya Lakshmi Dasari, Jamshid M Nouri (City U.

London, UK), Dermot Brabazon (Dublin City Univ., Ireland), Sumsun

Naher (City U. London, UK)

**3D Printed SM-Doped Ceria-Na<sub>0.6</sub>CoO<sub>2</sub> Composite Electrolyte Membrane**

**For Low Temperature Solid Oxide Fuel Cells** Zuying Feng, Yuhong Liu,

Jiahe Chen, Liang Hao, Yan Wu (China Univ. Geosciences, Wuhan, China)

**Improvement Of Photovoltaic Properties Of Doctor Blade-Based ZnO/Cu<sub>2</sub>O**

**Heterojunction By Graphene Oxide** Nelly Ma. **Rosas-Laverde**, Jesus Cembrero,

Javier Orozco-Messana (U. Politec Valencia, Spain), Alina Pruna (U. Bucharest,

Romania)

**Cuprous Delafossite Oxides for High Temperature Thermoelectric**

**Application** Yining **Feng**, Na Lu (Purdue U., W. Lafayette, IN)

**Enhanced Performance of Perovskite Solar Cells through Fast Hole**

**Extraction** **Ming Wang**, Zhigang ZANG (Chongqing U., China)

**Palladium Supported Graphene Oxide Based Metal Organic Framework**

**Nanocomposite With Improved Properties** Mpitloane J. **Hato**, Mogwasha D.

Makhafola, Thabang Somo, Kabelo E. Ramohlola, Gobeng R. Monama (U.

Limpopo, Sovenga, S. Africa), Siyabonga B. Mdluli, Kerleng M. Molapo,

Emmanuel I. Iwuoha (U. WesternCape, Cape Town, S. Africa), L. Katata-Seru

(North-west U., Mmabatho, S. Africa), Kwena D. Modibane (U. Limpopo)

**High-K Oxides By ALD For Novel Applications** Marek **Godlewski**, R.

Pietruszka, B.S. Witkowski (Inst Phys, Polish Acad Sci, Warsaw), A. Slonska-

Zielonka, J. Cymerys-Bulenda, Karolina Amaro, Hubert Buksinski, I.

Serafinska, M.M. Godlewski (WULS-SGGW, Poland)

session 1d Tuesday 8:30AM-10:40AM room D

*Highly Efficient Cladding Eco-Panels With Improved Nano-Insulation*

*Properties (Gelclad)*

(Gelclad has received funding from the European Union’s Horizon 2020

research and innovation programme under grant No 723425)

**GELCLAD 1**

Chairs: Mizi Fan, I. Marques, M. Goncalves, C.P.dos Santos

**overview of GELCLAD** Mizi Fan (Brunel University London, UK)

**3D Printed Autonomous Humidity Responsive Ventilation System**

**For Building Facades** Mariana Goncalves (Rua Pedro Nunes (IPN),

Portugal)

**Applying Ambient Pressure Drying Aerogel For The Development**

**Of A Building Superinsulation System** Ivania Marques (IPN, Portugal)

**Development Of Gelclad Eco WPC Frame** Omar Abo Madyan (Brunel

University London, UK)

**Interface Characterization Of Biopolymer And Composites In**

**Additive Manufacturing** Yuxuan Wang (Brunel University London,

UK)

**Circular Development Of Sludge Cellulose/PHA Biocomposites** Yonghui

Zhou (Brunel University London, UK)

**Initial Evaluation of the Mould Susceptibility of WPC Panel Components**

Luis Nunes (Lab Nac de Engenharia Civil (LNEC), Portugal)

**Thermogravimetric Analysis of wood Plastic Compounds** Carlos Pina Dos

Santos (LNEC, Portugal)

1:30PM-2:10PM 2:10PM-2:50PM	<b>Metal, Oxide And Metal-Oxide Composite Nanophase Sponges From Solution</b> Gunnar Westin (U. Upsalla, Sweden) <b>High Efficient Dissolution of Natural Cellulose and Spinning Process</b> Zuowan Zhou (Southwest Jiaotong U., Chengdu, China)
2:50PM-3:30PM 3:30PM-4:10PM	<b>Earth-Abundant Oxides For Energy Harvesting</b> Na Lu (Purdue U., West Lafayette, IN) <b>Long Fiber Thermoplastic-Based Carbon Fiber /Acrylonitrile-Butadiene-Styrene Composites: Effect Of LFT And ABS Variables on the Composite Properties</b> Donghwan Cho (Kumoh Nat. Inst.Tech., Gyeongbuk, S. Korea)
4:10-PM-4:50PM	<b>State of the Art Report on Utilization of FRP Composites in Reinforced Concrete and Unreinforced Masonry Structures Rehabilitation</b> Ayman S. Mosallam (UC Calif. Irvine)
4:50PM-5:30PM 5:30PM-6:10PM	<b>Petrogel Technology for Oil Spill Recovery and Cleanup</b> T. C. Mike Chung (Pennsylvania State U.) <b>Tuning The Morphology Of Metal/Polymer Nanostructures By Photochemical Approach</b> Balan Lavinia (IS2M, Mulhouse France)
6:10PM-6:50PM	<b>Ionic Conduction In Semiconductors And Heterostructure Composites For Next Generation Energy Devices</b> Bin Zhu (KTH, Sweden and Hubei U., Wuhan, China)

Session 2a Tuesday 10:40AM-12:50PM Room A

**GENERAL 2 Innovative Fiber Types**  
Chairs: Na Lu, Udo Schwingenschlogl, M. Abouhamzeh, Byung-Joo Kim  
**Manufacturing Issues Of Fibre Metal Laminates** Morteza Abouhamzeh (TU Delft, Netherlands) Tues Wed

**A Simple Method To Evaluate Adhesion Strength Between Metal Layer And Carbon Fiber Surface In Metal-Coated Carbon Fibers** Kwan-Woo Kim, Byung-Joo Kim (Korea Inst. Carbon Conv Tech, and Chonbuk Nat. U.)

**Development Of Polyethylene-Based Low-Cost Carbon Fiber Using Dry-Wet Hybrid Crosslinking Method** Kwan-Woo Kim, Byoung Suhk Kim, Byung-Joo Kim (Chonbuk Nat. U., Seoul, S. Korea)

**Effect of Interlayer Hybridization of Carbon, Kevlar and Glass Fibers with Oxidized Polyacrylonitrile Fibers on Mechanical Behavior of Hybrid Composites** Hossein Ebrahimnezhad-Khaljiri, Reza Eslami-Farsani, Ebrahim Akbarzadeh (Toosi Univ. Tech., Tehran, Iran)

**A Study On Mechanical Strength Enhancement Of Carbon Fibers By Electrochemical Etching** Byung-Joo Kim, Jin Soo Jeong, Kwan-Woo Kim, Hyun-Il Kim, Hae-Seong Lee, Kay-Hyeok An (Korea Inst. Carbon Conv Tech, and Chonbuk Nat.U.)

**Preparation Of Cobalt/Iron-Coated Carbon Fibers And Their Composites For Electromagnetic Shielding Applications** Byung-Joo Kim, Woong Han, Hyun-Il Kim, Dong-Chul Chung, Kay-Hyeok An (Korea Inst. Carbon Conv Tech, and Chonbuk Nat.U.)

**Analysis Of Pressure Variations Over Material Properties Of Cu Deposited By SC-CO<sub>2</sub> And Post SC-CO<sub>2</sub> Techniques For Application In Through Silicon Vias** Ho-Chiao Chuang, Chih-Jer Yeh (Nat. Taipei U.T., Taipei), Ai-Ho Liao (Nat. Taiwan Univ. Sci. Tech., Taipei)

**Steel-Polyurethane Sandwich Panel Construction For Ship Hull Strengthening** Maziar RAMEZANI, Meyrick Pereira, Timotius Pasang (Auckland Univ.Tech., New Zealand)

**BIOCHAR: The New Low Cost Carbon Filler Able To Improve Mechanical Proprieties In Epoxy Resin Composites** A.A. Khan, P. Jagadale, C. Rosso, A. Tagliaferro (U. Torino, Italy) Tues-Thurs

Session 2b Tuesday 10:40AM-12:50PM Room B

**MATH 2 Wave and Dynamics in Composites**  
Chairs: Ada Amendola, A. Montanaro, Ali Al Aloosi, K. Kotrasova  
**New Statistical Learning To Study The Biodegradation Of Collagen Scaffolds In Bone Regeneration** Salvador Naya, Javier Tarrío-Saavedra (Univ. a Coruna, Spain), Yaroslava Robles-Bykbaev (Univ Poli Salesiana, Cuenca, Ecuador) Tues-Wed

**A Cumulative Damage Indicator For Composite Panels By Lamb Waves** Sergio Cantero-Chinchilla (U. Nottingham, UK), Manuel Chiach'io-Ruano (U. Nottingham, UK, and U. Granada, Spain), Juan Chiach'io-Ruano, Dimitrios Chronopoulos (U. Nottingham, UK)

**Effects Of Transverse Shear And Rotary Inertia On Wave Propagation In A Smart Laminated Composite Cylindrical Shell** Hossein K. Bisheh, Nan Wu (U. Manitoba, Canada)

**Wave Dynamics Of Composite Tensegrity Metamaterials** Ada Amendola (U. Salerno, Italy), Anastasiia Krushynska (U. Turin, Italy), Chiara Daraio (Calif. Inst.Tech.), Nicola M. Pugno (U. Trento, Italy), Fernando Fraternali (U. Salerno)

**On Time Reversal of Linear Thermoelastical Waves** Adriano Montanaro (U. Padova, Italy)

**Dynamic Response Of CFRP Retrofitted Steel Structure Sub-Assemblage Under Impact Loading** Ali Al Aloosi (Washington DC), Zia Razaq (Old Dominion U., Norfolk)

**Vibrating Analysis Of Cylindrical Short Fibers Reinforced Composite Container** Kamila Kotrasova, Eva Kormanikova (TU Kosice, Slovak Rep.)

**Viscoelastic Behaviour Of Hybrid Laminates With Nano-Enhanced Resin** P.N.B. Reis, M.P. Silva, P. Santos (U. Beira Interior, Covilha, Portugal) Tues-Wed

Session 2c Tuesday 10:40AM-12:50PM Room C

**NANO 1 processing conditions**  
Chairs: Monica A. Silva, Peng Zhu, Kwang-Ho Jung, C.L. Chiang  
**Preparation Of Polyetherimide (PEI) Nanoparticles On Carbon Fiber Surface** Peng Zhu, Limin Bao (Shinshu U., Ueda, Nagano, Japan)  
**Effects of Polyvinylpyrrolidone Molecular Weight on Pressureless Transient Liquid Phase Sintering Bonding with Cu Nanoparticles and Sn-58Bi Particles** Kwang-Ho Jung, Kyung Deuk Min, Seung-Boo Jung (Sungkyunkwan U., S. Korea)

**Performance Of Membranes Based On Carbon Nanotube Network And Cellulose Acetate** Monica A. Silva, M.T.P. Amorim (U. Minho, Portugal)

**A Study On Mechanical Properties Of Graphene Nanoplatelets /Epoxy Nanocomposites By Planetary Dispersion Method** Chin-Lung Chiang (Hung Kuang U., Taichung, Taiwan), Wei Jen Chen, Chien-Wei Hsu (China U.Sci.Tech., Hsinchu, Taiwan), Ming-Yuan SHEN (Southern Taiwan U.Sci.Tech., Tainan, Taiwan)

**XRD and ATR/FTIR Investigations Of Various Montmorillonite Clays Modified By Monocationic And Dicationic Imidazolium Ionic Liquids** Amna Ahmed (U. Picardie Jules, Amiens, France), Y. Chaker, El H. Belarbi (Ibn Khaldoun U., Algeria), O. Abbas (Walloon Agricultural Res Cen, Gembloux, Belgium), J.N. Chotard (U. Picardie Jules Verne, France), H.B. Abassi (CNRS FRE, Amiens, France), S. Bresson (ESPE, Amiens, France)

**Facilitating High Reinforcement Of Polymer Nanocomposites By Controlled Modification Of Filler Surfaces** Sunanda Roy, Hyun Chan Kim, Jung Woong Kim, Ruth M. Muthoka, Jaehwan Kim (Inha U., Incheon, S. Korea)

**Nanoscience And Nanotechnology In Nigeria** William Okochu (Univ. Benin, Nigeria)

**Synthesis And Electromagnetic Wave Absorption Property Of Amorphous Carbon Nanotube Networks On A 3D Graphene Aerogel /BaFe<sub>2</sub>O<sub>9</sub> Nanocomposite** Tingkai ZHAO, Jingtian Hu, Xiarong Peng, Wenbo Yang, Tiehu Li (Northwestern Poly U., Xian, China)

**New Approach of Interfacial and Wetting Properties between Glass Fiber and Epoxy Matrix with Different Pot Life by VARTM** Joung-Man Park, Pyeong-Su Shin, Jong-Hyun Kim, Yeong-Min Baek, Ha-Seung Park, Dong-Jun Kwon (Gyeongsang Nat U., S. Korea), K.L. DeVries (U. Utah) Tues or Wed

Session 2d Tuesday 10:40AM-12:50PM room D

**Highly Efficient Cladding Eco-Panels With Improved Nano-Insulation Properties (Gelclad)**  
(Gelclad has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 723425)

**GELCLAD 2**  
Chairs: Lina Nunes, Mizi Fan, V.P. Berardi, F. Bencardino  
**GELCLAD Vetreu kit: Moisture Related Properties** Carlos Pina Dos Santos (LNEC, Portugal)  
**GELCLAD Vetreu kit: Optimizing Thermal Performance** Lina Nunes (LNEC, Portugal)  
**GELCLAD Vetreu kit: Optimizing Thermal Bridge** Lina Nunes (LNEC, Portugal)

**Stainless Steel-FRCM System for Strengthening Of RC Beams** Francesco Bencardino, Mattia Nistico (U. Calabria, Italy)

**Simulation and Analysis of Aluminium Silicon Carbide MMC** C.N. Chandrappa, R. Kumar (Acharya Inst Tech, India)

**Mechanical Modeling Of The Static Of Masonry Vaults Reinforced With Composite Materials** Valentino Paolo Berardi, Mariella DePIANO, Rosa Penna, Luciano Feo (U. Salerno, Italy)

**Effect of 3-D Passive Confinement on the Mechanical Behavior of Concrete under Monotonic Loading** C.W. Lim, Tijani Ibrahim AJANI (City U. Hong Kong, China)

**Nonlinear Stability Analysis Of Functionally Graded Graphene Nanocomposite Fixed Arches Under Uniform Radial Load** Zhicheng Yang, Airong Liu, Jiyang Fu (Guangzhou U., China)

Session 3a Tuesday early afternoon Room A

### **GENERAL 3** *Fiber Reinforcement-Characterization of Materials*

Chairs: K. Okamoto, S. Kitagawa, Viktor Gribniak, Qi, Wang

**Direct Bonding Between Carbon Fiber Reinforced Thermoplastics And Aluminum Alloys And Its Soundness Evaluation By Non-Contact Ultrasonic Testing** Kazuki **Okamoto**, Joon Cheol Chung, Hikaru Abe, Atsushi Hosoi (Waseda U., Tokyo, Japan), Naoki Ishida, Shingo Matsukawa (Fukuoka, Japan), Kristine Munk Jespersen, Hiroyuki Kawada (Waseda U.)

**Microwave Technology For Processing Metal Matrix**

**Nano composites** Akeem Damilola **Akinwekomi**, Man-Tik Choy, Ling Chen, Ka-Wai Yeung, Wing-Cheung Law, Wai-Kwok Kelvin Yeung, Wai-Man Tam, Chak-Yin Tang (Hong Kong Poly U., China)

**Plasmon Resonance Energy Transfer In Gold-Semiconductor**

**Nanocomposites For Improving Light-To-Heat Conversion Efficiency** **Zhou-Rui** Xu, Nan-Xi Rao, Wing-Cheung Law, Chak Yin Tang (Hong Kong Poly U., China)

**Effect Of Thermal Aging On Mechanical Properties Of Short Glass Fiber Reinforced Polyphenylene Sulfide (PPS) Composites** **P. Zuo**

(PIMM-UMR, Paris, France), R.C. Benevides (La varriere,France), J. Fitoussi, M. Shirinbayan (PIMM-UMR, Paris), F. Bakir (Arts et Metiers Paris Tech, Dynfluid, France), A. Tcharkhtchi (PIMM-UMR, Paris)

**Studies On Fiber Reinforced Polypropylene Thermoplastic Composites By Film Stacking Method** M, K.R. Senthilkumar, S. Raja Sabarinath, R. Karthik (RMK Eng Coll., Tamilnadu, India)

**Study On Mechanical Properties Of Domestic High Modulus Carbon Fiber Composite Cylinder** **Jibai** Tao, Ming Zhang, Weiqiang Chen, Yu Li, Xin Guan, Feng Gao, Zhenlu Zhao (Beijing Inst Spacecrafts, China)

**Simulation Of Resin Flow/Fiber Compaction In Filament Winding Process** **Qi Wang**, Mingfa Ren (Dalian U.T., China)

**The Structural, Electronic And Optical Properties Of Double Perovskite  $Ba_2NiWO_6$  by the Ab-initio Method** Amel **Rachedi**, R. Baghdad, S. Reguieg (Univ. Ibn-Khaldoun, Algeria)

Session 3c Tuesday early afternoon Room C

### **INFRA 1** *key issue: Durability and Cost*

Chairs: Denvid Lau, V. Gribniak

**Bonding Behavior Of FRP-Concrete System Under High Temperature** **Ao Zhou**, Denvid LAU (City U. Hong Kong, China)  
**Effect Of Nano-Strengthening On The Mechanical Properties And Microstructure Of Recycled Concrete** Tao **Meng** (Zhejiang U., Hangzhou, China), Jiaolong Zhang (Tongji U., Shanghai, China), Jiajia Shen (Zhejiang U. and Imperial Coll., UK)

**Finite Element Analysis Of Deficient RC Columns With Square And Rectangular Section Under Pseudoseismic Load And Comparison With Retrofit Code Predictions** Evgenia Anagnostou, Theodoros Rousakis, Nikolaos Georgiadis (D.U.Th., Xanthi, Greece)

**The Application Carbon-reinforced Concrete for Lightweight Noise Barriers** Henrik L. **Funke**, Sandra Gelbrich, Lothar Kroll (TU Chemnitz, Germany)

**Modelling Elastic Properties of Laminated Strand Lumber** Chunping **Dai**, Zhiyong Chen (FPInnovations, Vancouver, Canada)

**3D Finite Element Pseudoseismic Analysis Of CFRP Strengthened RC Columns** Theodoros Rousakis, Nikolaos Georgiadis, Evgenia **Anagnostou** (D.U.Th., Xanthi, Greece)

**Effective CFRP Retrofitting For Prestressed Concrete I-Beams** Herish A. **Hussein**, Zia Razzaq (Old Dominion U., Norfolk, Virginia) Tuesday

**Design Concept And Verification Of Temporary Rescue Bridge Using Lightweight Composite And Steel Hybrid Structures** **Fang-Yao** Yeh (Nat. Cen Res Earthquake Eng., Taiwan), Kuo-Chun Chang (Nat. Taiwan U., Taipei), Yu-Chi Sung (Nat Taipei Univ. Tech., Taiwan) Tues

Session 3b Tuesday early afternoon Room B

### **MATH 3** *Response of Advanced Composites & Structures*

Chairs: R.N. Yogeshvaran, Wei-Yuan Guan, Kuang-Chong Wu, Zbigniew Bieniek

**Out-Of-Plane Compressive Response Of 3D-Printed Kevlar Cross-Ply Composites** R.N. **Yogeshvaran**, F. Farukh, K. Kandan (deMontfort U., Leicester, UK)

**Influence Of Induced Square Holes On Initial Of Thin-Walled Square Tubes** **Wei-yuan Guan**, Guang-jun Gao (Central South U., Changsha, China)

**Influence of Studded Tires Rutting on Pavement Materials in Cold Regions** Osama A. **Abaza**, Mahmoud Arafat, Tanay Datta Chowdhury (U. Alaska, Anchorage)

**Tuning Snap Through Loads Of Bistable Composites Using Tunable Stiffness Mechanism** Tanzeel **urRehman**, Zeeshan Qaiser, Shane Johnson (U. Michigan and Shanghai Jiaotong U., China)

**Bending of Thin Elastic Plates Containing Two Circular Holes** **Kuang-Chong** Wu, T. Tsai (Nat. Taiwan U., Taipei)

**An Influence Analysis Of The Number Of Layers And The Thickness Of The Plate On Displacements And Stresses In A Layerwise Plate Theory** Marina **Rakocevic** (U. Montenegro, Podgorica), Svetislav Popovic (Europoles GmbH, Germany)

**On The Form-Finding Of Innovative Composite Metamaterials** Zbigniew Bieniek (UT Rzeszow, Poland), Ida Mascolo, Ada Amendola, Mariella De Piano (U. Salerno, Italy), Chiara Daraio (Cal Tech, Pasadena), Fernando Fraternali (U. Salerno)

**A Study Of Transverse Bending Behavior Of composite T-Joint Of Car Body** Wenbin **Hou**, Xianzhe Xu, Haifeng Wang, Hongzhe Zhang (Dalian U.T., China)

**Grafting Of Alkoxysilane On Alumina And Zirconia Nanoparticles** S. **Bayou** (U. El-Oued, Algeria), Mohamed Mouzali (USTHB, Algeria), L. Lecamp, P. Lebaudy (Normandie U, INSA-Rouen, France) poster

**Implementation of Electric Heating Concrete for Deicing Pavement Structure** **Rui Rao**, Christopher Y. Tuan (Guangzhou U., China) POSTER

Session 3d Tuesday early afternoon Room D

### **TEXTILE 1** *Materials for Applications*

Chairs: Q.H. Pham, J. Militky, R. Kumar, H. Hadji

**The Microscopic Compression Behavior Of A Yarn Of Aramid Fibers: A Numerical Analysis** **Quoc Hoan** Pham (U. Lille, France), Cuong Ha-Minh (U. Paris Saclay, Cachan, France), Abdellatif Imad, Toufik Kanit (U. Lille), Tuan-Long Chu (Thuy Loi Univ., Hanoi, Vietnam)

**Layered Nanostructures Containing PCM** Jiri **Militky**, Jakub Wiener, Mohanapriya Venkataraman, Jaromir Marek (T.U. Liberec, Czech Rep.), Guocheng Zhu, Juming Yao (Zhejiang Sci T.U., Hangzhou, China)

**Influence Of Construction On Dynamic-Mechanical Behavior Of Staple Yarn** Dana **Kremenakova**, Jiri Militky, Zdena Tasarova (T.U. Liberec, Czech Rep.)

**Extraction And Characterization Of Nanocellulosic Fiber From Jute Fiber To Prepare Biodegradable Polymer Nanocomposite** **Ritesh** Kumar, Sanju Kumari, Shivani Singh Surah, Bhuvneshwar Rai, Gulshan Kumar (Indraprastha University, New Delhi, India)

**Folding Of A Bistable Tape-Spring Structure Based On Plain-Woven Composite** **Bing Wang**, Keith A. Seffen, Simon D. Guest (U. Cambridge, UK)

**Evaluation Of The Mechanical Properties And Damping Performances Of Nonwoven Composites Based On Natural Fibres** Hajer **Hadji**, M. Assarar, W. Zouari (U. Reims Champagne-Ardenne, France), K. Behloul (EcoTechnilin SAS, France), B. Zouari (Nat. Eng Sci Sfax, Tunisia), R. Ayad (U. Reims)

**Verification Of Bond Behavior And Model With Modification Reinforcing Condition Of Transverse Strand In Textile Reinforced Concrete** **Jongho** Park, In Gu Kang, Sun-Kyu Park, Jun Myung Park, Sungnam Hong (Sungkyunkwan U., Suwon, S. Korea) Tues-Wed  
**A Composite Polyvinyl Alcohol/ Silk Fibroin Nanofibers For Tissue Engineering Application** Mostafa M. **Sayed** (Aswan U., Aswan, Egypt), Hamouda M. MOUSA, Abdalla Abdal-hay (South Valley U., Qena, Egypt), M. R. El-Aassar, Montasser M. Dewidar (SRTA-city, Alexandria, Egypt)

Session 4a Tuesday 4:00PM-6:10PM Room A

## GENERAL 4 *Green Materials & Recycling Technologies*

Chairs: G.G. delPino, F. Agrebi, L. Rodier, F. P.LaMantia

### Study Of Hybrid Composites With Organophilic Clay And Vegetable

**Fibers In Epoxy Resin Composites** Gilberto Garcia **delPino**, Antonio Claudio Kieling (State U. Amazonas, Manaus, Brazil), Costa de Macêdo Neto (U. Sao Paulo), Jose Luis Valin Rivera (Pontifical Catholic U. Valparaiso, Chile), Marcos Dantas dos Santos, Aristides Rivera Torres, Gabriel Federico Llerena, Jamile Dehaini, Bruno Mello de Freitas, Francisco Rolando Valenzuela Díaz

**Influence of Sea Water Treatment on the Dielectric Properties of Sugar Palm Fiber Reinforced Phenolic Composites** Fatma **Agrebi**, N. Ghorbel (U. Sfax, Tunisia), B. Rashid (Middle East T.U., Baghdad, Iraq), M. Jawaid (U. Putra Malaysia, Selangor), A. Kallel (U. Sfax)

**The Effect Of Blending Condition On Mechanical Properties Of Cellulose Microfiber Extraction From Bagasse Using A Modified Kitchen Blender** Romi **Sukmawan** (Politek Lembaga P.P., Indonesia), Muhammad Waziz Wildan (U. Gadjah Mada, Indonesia), Lestari Hetalesi Saputri, Rochmadi, Heru S. B. Rochardjo (Indonesia)

**Mechanical Properties Of Fibers Cement Composites Reinforced By Cellulose Pulp** Loic **Rodier**, Viviane da Costa Correia, Holmer Savastano Junior (U. Sao Paulo, Brazil)

**Effect Of The UV Exposure On The Creep Behaviour Of Pla Based Green Composites** Francesco Paolo **LaMantia**, Vincenzo Fiore, Maria Chiara Mistretta (U. Palermo, Italy), Marco Morreale (Kore Univ Enna, Italy), Luigi Botta, Antonino Valenza (U. Palermo, Italy)

**Study of Optical Constants of the Ti-SiO<sub>2</sub> Nanocomposite Film Tuned by Co-Sputtered Power In The Deposition Process** E.T. **Hu**, X.X. Liu (Nanjing U. Post Tele, China), Q.Y. Cai (Shanghai Inst Tech Phy, China), Y. Yao, K.Y. Zang (Fudan U., China), K.H. Yu, W. Wei (Nanjing U. Post Tele), X.X. Xu (Nanjing Normal U.), Y.M. Yang, Y.X. Zheng, S.Y. Wang, R.J. Zhang, Liang-Yao Chen (Fudan U., China)

**Towards A Circular Economy: Reprocessing And Re manufacturing Of End-Of-Life Glass Fibre Reinforced Composites With A Photo- And Thermocurable Styrene-Free Unsaturated Resin** Raffaella **Suriano**, Gianmarco Griffini, Andrea Mantelli, Marinella Levi, Stefano Turri (Politec Milano, Italy)

**Preparation of Alumina Composite Supports For Hydrogen Production and Separation** Murat **Duran**, Fatma Nihal Tuzun (Hitit U., Corum, Turkey)

Session 4b Tuesday 4:00PM-6:10PM Room B

## MATH 4 *Analysis of Composites & Structures with Enhancements*

Chairs: M. Brahim, V. Baheti, B.A. Alshammari, Minjing Liu

**Improving The Bearing Strength Of Pin Loaded Composites Manufactured Using VARTM** Malek **Brahimi**, Sidi Berri (City Univ New York)

**Creep Behavior Of Particle Filled Epoxy Composites** Vijay **Baheti**, Daniel Karthik, Jana Novotna, Alzbeta Samkova, Roman Pulíček, Mohanapriya Venkataraman, Pavel Srb, Karolína Voleska, Jiri Militky (T.U. Liberec, Czech Rep.)

**A Comparative Study Of Unidirectional Carbon-Flax Hybrid Composites Under Static And Fatigue Tests** Mariem Ben **Ameur**, Abderrahim El Mahi, Jean-Luc Rebiere (Le Mans Univ., France), Moez Abdennadher, Mohamed Haddar (Ecole d'Ing Sfax, Tunisie)

**Effect Of Graphite On Storage Modulus Of Poly (Ethylene Terephthalate) Matrix** Basheer A. **Alshammari** (King Abdul-Aziz City SciTech, Riyadh, S. Arabia), Arthur N. Wilkinson (U. Manchester, UK)

**Fatigue Analysis Of Composite Bolted Joints With Bolt-Hole Delamination** Minjing **Liu**, Song Yu (Dalian U.T., China)

**Design Of Imperfection-Insensitive Hierarchical Cylindrical Shells Enhanced By Hybrid Fibers** Kuo **Tian**, Xiangtao Ma (Dalian U.T., China), Jiaxin Zhang (Johns Hopkins U., Baltimore, MD), Peng Hao, Bo Wang (Dalian U.T., China)

**Influence Of Material Distribution On Initial Impact Force Of Flexible Composite Structure** Guang-jun **Gao**, Wei-yuan Guan (Central South U., Changsha, China)

**Application Of Randomly Distributed Niti SMA Fibers To Crack-Closing In Cementitious Beams** Jong-Han **Lee**, Kun-Joon Lee, Hyung-Woo Lee, Kabuyaya Kighuta (Daegu U., Gyeongsan, S. Korea)

**Thermal Conductivity Temperature-Pressure Dependence Of Natural And Artificial Composite Materials** S.N. **Emirov**, V.D. Beybalaev, A E Ramazanov, A.A. Amirova (Makhachkala, Russia), Abutrab A. ALIVERDIEV (Inst. Geothermal Res, Makhachkala, and Dagestan State U., Russia) poster

Session 4c Tuesday 4:00PM-6:10PM Room C

## NANO 2 *processing conditions*

Chairs: M. Campo, J. Majak, Fanbin Meng, V.I. Kodolov

**Development Of Polymer Matrix Nanocomposites Circuits Using 3D Printing Techniques For Anti-Icing Systems** Monica **Campo**, A. Cortes, A. Jiménez-Suarez, A. Urena (U. Rey Juan Carlos, Madrid, Spain)

**Higher Order Haar Wavelet Method. Application To Nanostructures** Juri **Majak**, K. Karjust, M. Pohlak, M. Eerme (Tallinn U.T., Estonia), B. Shvartsman (Estonian Ent. U. App. Sci., Tallinn, Estonia)

**Graphene Aerogel Microspheres For Broadband And Tunable High-Performance Microwave Absorption** Fanbin **Meng** (Southwest Jiaotong U., Chengdu, China)

**Nanostructured Polymeric Materials Creation With The Using Of Chemical Mesoscopies Principles** V.I. **Kodolov**, V.V. Trineeva, Yu.M. Vasil'chenko, Yu.V. Pershin, R.V. Mustakimov (RAS, Izhevsk, Russia)

**Synthesis Of High Electrical Conducting Graphene Oxide Using Eco-Friendly Method In Water** Ok-Kyung **Park**, Seung Hee Yu, Maiti Kakali, Nam Hoon Kim, Joong Hee Lee (Chonbuk Nat. U., S. Korea)

**Photoelectrochemical Properties Of ZnS- And CaS-TiO<sub>2</sub> Nanostructured Photocatalysts: Aqueous Sulfidation As A Smart Route To Improve Catalyst Stability** Samiha **Chaguetti**, Larissa Chaperman, Sophie Nowak, Delphine Schaming, S. Lau, Philippe Decorse (U. Paris Diderot, France), Patricia Beaunier (U. Pierre & Marie Curie, France), Cyrille Costentin (LEM, U Paris Diderot), Fayna Mammeri, Slimane Achour, Souad Ammar

**Electrochromic Properties of V<sub>2</sub>O<sub>5</sub> Thin Films Doped By Molybdenum Deposited By Spray Pyrolysis Technique** A. **Mrigal** (Ibn Tofail U., Morocco), R. Temsamani, M. Addoua, H. Ftouhi (U. Abdelmalek Essaadi, Morocco), H. Cherrad (Ibn Tofail U.), M. El Joud (Chouaib Doukkali Univ., Morocco)

**The Effect of Nanoparticles Addition To Molten A356, is it a Refining Or Strengthening Effect?** I.S. **El-Mahallawi**, M.Sc. Othman Mohamed (Cairo U., Giza, Egypt)

**Magnetic Impurities in Cold Atom Systems** Yshai **Avishai** (Ben Gurion U., Israel) invited

**Synthesis Of Ternary Hybrid RGO/PANI/Fe<sub>3</sub>O<sub>4</sub>, And Its Application Towards Selective And Sensitive Non-Enzymatic Chronoamperometric-Based Hydrogen Peroxide (H<sub>2</sub>O<sub>2</sub>) Detection** Jane **Gabunada**, Dong Jin Yoo (Chonbuk Nat.U., S.Korea)

Session 4d Tuesday 4:00PM-6:10PM Room D

## BIO 1 *Bio Composites*

Chairs: C. Prakash, B. Yilmaz, S. Concilio, R. Mishra

**Anisotropic Behavior Characterization Of Cortical Tissue In Long Bones Under Dynamic Loads** G. Kharmanda, A. El-Hami (INSA Rouen, Normandie, France), A. Shokry (Fayoum U., Egypt)

**Synthesis of Bio-inspired Mg-HA-MWCNT Porous Composite by Spark Plasma Sintering** Chander **Prakash**, Sunpreet Singh (Lovely Professional Univ., Punjab, India), Ilenia Farina (U. Naples Parthenope, Italy), Fernando Fraternali (U. Salerno, Italy)

**Inclusion Complexation Studies Of Water-Soluble Soluble Calixarene Derivatives And Toxic Ethidium Bromide** Bahar **Yilmaz**, Mevlüt Bayraktci (Mehmetbey U., Karaman, Turkey)

**Mechanical And Thermal Properties Of Biobased Cork Composites** Charlotte **Menager**, Xuan Wu, Nathanael Guigo, Luc Vincent, Nicolas Sbirrazzuoli (U. Cote d'Azur, France)

**Computational Study Of Alginate/Gelatin Aerogel Formulations** Stefano **Piotto**, Simona Concilio, Lucia Sessa (U. Salerno, Italy), Rosita Diana, Ugo Caruso (U. Napoli Fed II, Italy), Pio Iannelli (U. Salerno, Italy)

**Azobenzene-Based Antimicrobial Composite Biomaterials** Simona **Concilio**, Lucia Sessa (U. Salerno, Italy), Barbara Panunzi (U. Napoli Fed II, Italy), Rosita Diana, Pio Iannelli, Stefano Piotto (Italy)

**Bio Based Composite Materials From Basalt** Rajesh **Mishra** (TU Liberec, Czech Rep.), Hafsa Jamshaid (Nat. Textile U., Faisalabad, Pakistan), Jiri Militky, Jakub Wiener, Blanka Tomkova, Mohanapriya Venkataraman, Dana Kremenakova, Veerakumar Arumugam, Kasthuri Venkatesh, Jaromir Marek (TU Liberec)

**Conceptual Analysis Of Delamination Effects In Nacre Using Finite Element Modelling With Continuum Framework** Mikko **Kanerva**, J. Jokinen, K. Ramakrishnan, E. Sarlin (Tampere U.T., Finland)

**Polymeric Quaternary Ammonium Salt-grafted Carbon Nanotubes for Antibacterium** Xiaoling Xu, Xuedong Xie, Minhao Zhang, Ying Zhou, Peizi Liao, Hewei Zhen, Zuowan Zhou (SWJTU, Chengdu, China)

Session 5a Wednesday 8:30AM-10:40AM Room A

## GENERAL 5 *Solar Energy*

Chairs: M. Song, E. Akhazadeh, A. Darwish, J.R. Zhang  
**Passivation Of Black Silicon Solar Cells** Davit Aghabekyan, Gagik Ayvazyan, Laura Lakhoyan (Nat Poly U. Armenia, Yerevan)  
**Intermediate-Band Solar Cell Based On ZnTe:Cr Thin Films Grown By Pulsed Laser Deposition** Kyoung Su Lee, Gyuji Oh, Eun Kyu Kim (Hanyang U., Seoul, S. Korea)  
**Enhanced Efficiency In  $ABi_3I_{10}$  With Post Treatment Based On Hole Conductor Free Lead-Free Perovskite Solar Cell** Myungkwon Song (KIMS, Gyeongnam, S. Korea)  
**Light and Impact Resistant Composite Reflector for Solar Energy** Ebrahim Akbarzadeh, Reza ESLAMI-Farsani, Hassan Norouzzinejad (Toosi U.T., Tehran, Iran)  
**Theoretical and Experimental Studies of ZnO/Si Heterojunction Solar Cells** Rafal Pietruszka, Bartłomiej S. Witkowski, P. Sybilski (Polish Acad Sci, Inst. Physics, Warsaw), E. Zielony, K. Gwozdz, E. Placzek-Popko (Wrocław U. SciTech., Poland), Marek Godlewski (Polish Acad Sci, Warsaw)  
**Polymer Nanocomposite Luminescent Films For Solar Energy Harvesting Made By Concurrent Multi-Beam** Multi-Target Pulsed Abdalla M Darwish, Shaelynn Moore, Aziz Mohammed, Kevin Thomposon, (Dillard U., New Orleans), Sergey Sarkisov (Huntsville, AL), Brent Koplitz (Tulane U., New Orleans), David Hui (U. New Orleans)  
**Numerical Study of the Nanocomposite-based Solar Selective Absorber with High Photo-Thermal Conversion Efficiency in the Broad Solar Spectral Region** J.R. Zhang, H.T. Tu, K.Y. Zang, E.T. Hu, Y. Yao (Fudan U., Shanghai, China), A.Q. Jiang (Waseda U., Japan), Z.J. Tu (Fudan U.), O. Yoshie (Waseda U., Japan), W. Wei (Nanjing U. Post Telecom, China), R.J. Zhang, Y.X. Zheng, S.Y. Wang, H. B. Zhao, Y.M. Yang, Liangyao Chen (Fudan U.)  
**Recyclable Thermosets with Self-healing Capability based on Thermoplastic Addition Phase** Moulero Akobi, Pengfei ZHANG (U. Louisiana at Lafayette)

Session 5b Wednesday 8:30AM-10:40AM Room B

## MATH 5 *Fracture and Failure Analysis in Composites*

Chairs: Hyunwoo Song, M. Mokhtari, Minkook Kim, Fengrui Liu  
**Fatigue Durability Evaluation Of Thermal Barrier Coating (TBC) Depending On Crack Spacing** Hyunwoo Song, Jung-Min Lee, Junghan Yun, Keontae Park, Soo Park, Chang-Sung SEOK, Jae-Mean Koo (Sungkyunkwan, Suwon, S.Korea)  
**Using A Cohesive Damage Model To Predict The Compressive And Tensile Behavior On The Failure Load Of Single Lap Bonded Joint** M. Mokhtari, F. Hamadouche, H. Benzaama, K. MADANI (Nat. Polytec Oran, Algeria)  
**Hybrid Carbon Composite Bipolar Plate for LT-PEMFC** Minkook Kim (KIST, Jeonbuk, S. Korea), Jun Woo LIM (Chonbuk Nat. U., S.Korea)  
**Behaviour Of The Fracture And Impact Of Unmodified Graphene / Epoxy Nanocomposites Produced By Using Different Mixing Procedure** Harun Sepet, Necmettin Tarakcioglu (Selcuk U., Konya, Turkey)  
**Effect of High Strain Rate and Low Temperature On Mode II Fracture Toughness Of Ductile Adhesive** Zheming Jia (Jiangnan U., Wuxi, China), Guoqing Yuan (Tongji U., Shanghai, China), David Hui (U. New Orleans)  
**A Failure Envelope Method Based Probabilistic Model For Failure Prediction Of Composite Double-Lap Multi-Bolt Joints** Fengrui Liu, Libin Zhao (Beihang U., Beijing, China), Jianyu Zhang (Chongqing U., China)  
**Environmental Degradation Of Fracture Toughness Of Epoxy Based Composite Pipes** Zuhair M. Gasem (King Fahd U. Pet. Min., Dhahran, S. Arabia)  
**On Multi-Parameters Perturbation Method For Structural Problems Of FGPM: Problem And Difficulty** Jun-Yi Sun, Rui Li, Xiao-Ting He (Chongqing U., China)

Session 5c Wednesday 8:30AM-10:40AM Room C

## INFRA 2 *key issue: Durability and Cost*

Chairs: Denvid Lau, T. Rousakis  
**Innovative Structures Enabled by Filament-Wound FRP Tubes** Jin-Guang Teng (Southern U. Sci. Tech., China) distinguished lecture 40 min  
**Assessment Of Deficient Three-Storey School Building In High Seismic Region And Composite Retrofit According To The Greek Retrofit Code** Theodoros Rousakis, Evangelia Visviki (D.U.Th., Xanthi, Greece)  
**Self-Healing Concrete** Wasef Yousef (Brunel University London, UK)  
**Computational Study on Delamination Detection in FRP Beam with Ultrasonic-Optic Technique** Ying Xu, Yi Yu (Harbin I.T., Shenzhen, China)  
**Influence Of Elastic Material Properties On Static And Dynamic Responses For Pultruded FRP Beams** Justin Russell, Stana ZIVANOVIC, Xiaojun Wei, Toby Mottram (U. Warwick, UK)  
**Plasticity Properties Of Thermally Modified Timber In Bending – The Effect Of Chemical Changes During Modification Of European Oak And Norway Spruce** Milan Gaff, Marian Babiak, František Kačík, Dick Sandberg, Marek Turcani, Peter Hanzlik, Veronika Vondrova (Czech U. Life Sci Prague)  
**Preliminary Numerical Analyses of Masonry Infill Walls before Shaking Table Testing** A. Tugrul Akyıldız, Arkadiusz KWIECIEN (Cracow U.T., Poland), Theodoros C. Rousakis (D.U.Th., Xanthi, Greece), Miha Kramar (Poland) Tues

Session 5d Wednesday 8:30AM-10:40AM Room D

## Energy 2 (oxide) *key issue: Engineering Applications*

Chairs: M. Huskic, J. Neamtu, K. Chebbah, S.O. Jeje  
**The Developmental Toxicity of Different Surface Modification Of Zinc Oxide Nanoparticles By Using Zebrafish Model** Yu-Hsuan Lee, Yi-Chun Yang, Ying-Jan WANG (Nat. Cheng Kung U., Tainan) Tues, Wed  
**Epoxy Resin –Amine Curing Agent Modified Graphene Oxide Nanocomposites** Miroslav Huskic, Silvester Bolka, Alojz Anzlovar, Ema Zagar (Nat. Inst. Chem)  
**Influence Of Annealing Temperature On The Structural, Optical And Electrical Properties of Li-Sn co-doped ZnO Thin Films Prepared By Spray Pyrolysis Technique** Amal Rherari (Ibn Tofail U., Morocco), M. Haris (Karunya U., Tamil Nadu, India), R. Adhiri (U. Hassan II, Casablanca, Morocco), M. Addou (Ibn Tofail U.)  
**Sensitive Hydrogen Gas Sensors Based On Palladium/Silicon Oxide/Silicon Carbide Thin Film Structures** Jenica Neamtu, Andrei Sorin Neamtu (Nat. Inst., Bucharest, Romania)  
**The Microstructural And Optical Properties Of The Nitrogen Doped ZnO Thin Films Prepared By Ultrasonic Pyrolysis Spray** K. Chebbah, R. Baghdad (U. Ibn-Khaldoun, Algeria), A. Belfedal, K. Zellama (U. Stambouli, Algeria)  
**Nanocrystalline Boron Doped-Cerium-Bismuth Oxides: Synthesis, Characterization And Application In Hydrogen Generation Via Water Splitting** Khaskasha Ansari (U. Kota, India), Sudhesh Kumar (MLS Univ., Udiapur, India), Hari Shanker Sharma (Kota, India), Neelu CHOUHAN (U. Kota, India)  
**Gd<sub>2</sub>O<sub>3</sub>:Eu(III) @ Silica and Gd<sub>2</sub>O<sub>3</sub>:Er(III) @ Silica Nanophosphors Synthesis, Optical Properties And Application Potential** Kim-Anh Tran, Pham Thi Minh Chau, Nguyen Thi Quy Hai (Duy Tan Univ., Danang, Vietnam), Vu Thi Thai Ha, Nguyen Thanh Huong, Pham Thi Lien (VAST-Hanoi, Vietnam), Ho Van Tuyen (Duy Tan Univ.), Lai Ngoc Diep (LPQM, Cachan, France), David Hui (U. New Orleans), Le Quoc Minh (Duy Tan U. and VAST-Hanoi)  
**Synthesis and Characterization of Tantalum Oxide Deposited by Metal Organic Chemical Vapour Deposition** Samson Olaitan Jeje (Tshwane U.T., Pretoria, S. Africa), O.O. Akinwunmi (Obafemi Awolowo U., Nigeria), Mxolisi Brendon Shongwe (Tshwane U.T.), Peter A. Olubambi (U. Johannesburg, S. Africa) poster

Session 6a Wednesday 10:40AM-12:50PM Room A

## GENERAL 6 *Energy and applications*

Chairs: Udo Schwingschlogl, Jie Chen, Jaesang Yoon, E. Peled  
**Salt Caverns In China Are Becoming The Most Effective Underground Energy Storages** Jie Chen, Jinyang Fan, Deyi Jiang, Wei Liu (Chongqing U., China)

**Exceptional Li Storage Of Nanostructured Electrode Materials For Next Generation Li Batteries** Jaesang Yoon, Hyunchul Kim, Yunok Kim, Taewhan Kim, Woosung Choi, Hyunwoo Kim, Won-Sub Yoon (Sungkyunkwan U., Suwon, S. Korea) Tues-Wed morn

**Ferroelectric Polymer-Based Nanocomposite Capacitors For Energy Storage** Dou Zhang, Hang Luo, Xuefan Zhou, Kechao Zhou (Central South U., Changsha, China)

**Fabrication And Characterization Of Novel Low-Platinum Core-Shell Nano Catalysts For PEM Fuel Cell** Emanuel Peled, Dima Kaplan, Meital Goor, Tania Ripenbein, Larisa Burstein (Tel Aviv U., Israel), Irina Popov (Hebrew U., Israel) Tues-Wed

**Ab-initio Calculations of the Thermoelectric Properties of MXenes** Udo Schwingschlogl (King Abdullah U Sci Tech, Thuwal, S. Arabia) invited  
**3D Hierarchical Porous Cu-Based Composite Current Collector With Enhanced Ligaments For Notably Improved Cycle Stability of Sn Anode in Li-ion Batteries** Z. Luo, Bin YUAN (South China U.T., Guangzhou)

**In-Situ Hydrothermal Fabrication Of Graphene/Polyimide Composites As High-Capacity Anode For Li-Ion Batteries** Guanyu Lin, Qing Zhang, Xiaoyan Han, Yingkui Yang (South-Central U. for Nat., Wuhan, China)

**High Throughput Experimental Study of Garnet-type Inorganic Electrolytes for Solid-state Lithium Ion Batteries** Zongkai Yan, Shuai Wu, Zhi Peng, Shipai Song, Yanlin Zhu, Xiaokun Zhang, Yong Xiang (UESTC, Chengdu, China)

Session 6c Wednesday 10:40AM-12:50PM Room C

## NANO 3 *processing and morphology*

Chairs: A.m. Pande, Lubomir Lapcik, A.Mrigal, H. Ftouhi  
**Non-Covalent Functionalization of GO in Order To Improve Composite Films Performances** Andreea Madalina Pande, Corina Andronesco, Horia Iovu (U. Politeh Bucharest, Romania)  
**Experimental Study Of The Mechanisms Of Electrical Conductivity And Thermopower In Composites Based On Carbon Nanostructures And Chalcogenide** Anatoly I. Romanenko, G.E. Yakovleva, V.E. Fedorov, A.Yu. Ledneva, S.B. Artemkina, V.A. Kuznetsov, Ya.A. Bryantsev, V. E. Arkhipov, A.S. Berdinsky, A.V. Gusel'nikov, A.V. Okotrub (Nikolaev Inst., Novosibirsk, Russia)

**Filler/Matrix Interface Surface Heterogeneity Characterization In Polyolefines Nanocomposites** Lubomir Lapcik, B. Lapcikova (Tomas Bata U., Zlin, Czech Rep.), E. Otyepkova (Palacky U. Olomouc, Czech Rep.)

**Change In Surface Resistance Of Gold And Silver Nanofilms Co-Cured On Fiber Reinforced Composites Under Tensile Loads** P. K. Bollavaram, M. M. Rahman, and R. Asmatulu (Wichita State U., Kansas)  
**TiO<sub>2</sub>NWS@AuNPS Composites And Its Application In The Methylene Blue Removal** Fan Fu, Yan Zhang, Ping Wang (Soochow U., Suzhou, China)

**Morphology and Mechanical Properties of Bagasse Nano Particles Reinforced Epoxy Composites** S.B. Hassan, L.A. Sulyman (U. Lagos, Akoka, Nigeria), V.S. Aigbodon (U. Nigeria, Nsukka)

**Ultrafast Laser Synthesis Of Nanodiamonds** Chen-Hon Nee (Multimedia U., Selangor, Malaysia), Hun-Seng Poh, Seong-Ling Yap (U. Malaya, Kuala Lumpur), Teck-Yong Tou, Seong-Shan Yap (Multimedia U.) INVITED

**High Performance Thermosetting Composites Interleaved With Amino Functionalized Aligned Carbon Nanotube Bundles/Polybenzimidazole Hybrid Films** Yuan Li, Qingbao Guan, Zehao Wang, Aijuan Gu, Guozheng Liang (Soochow U., Suzhou, China)

**Developing best Compromises among Performance Measures for a Multifunctional Nanopaper** Dan Zhang (Ohio State U., Columbus), Maria G. Villarreal (CIMAT, Monterrey, Mexico), Eusebio Cabrera, Avraham Benatar, L. James Lee, Jose M. CASTRO (Ohio State U.) Wed

Session 6b Wednesday 10:40AM-12:50PM Room B

## MATH 6 *Buckling of Composites*

Chairs: M.B.Sirjani, H.M. Tabas, N. Escobales, J.S. Moita  
**Buckling Strength Of FRP Portal Frame With And Without Bracing** Mojtaba B. Sirjani (Norfolk State U., Virginia), Zia Razzaq (Old Dominion U., Norfolk, VA) Tuesday

**Effect Of Geometrical And Physical Important Parameters On Buckling And Free Vibration Of Laminated Composite Plates With Partial Elastic Foundation** Hora Moraveji Tabasi, K. Malekzadeh, Jafar Eskandari-Jam (Melek-Ashtar Univ. Tech., Tehran, Iran)  
**CFRP Retrofitted Steel Tapered Column Buckling** Nestor Escobales, Zia RAZZAQ (Old Dominion U., Norfolk, VA)

**Buckling Behavior Of Composite And Functionally Graded Material Plates** Jose S. Moita, Aurelio L. Araujo (IDMEC, U. Lisboa, Portugal), Victor Franco Correia (Ecola Sup Nautica Infante D. Henrique, Portugal), Cristovao M. MOTA SOARES (U. Lisboa, Portugal), Jose Herskovits (U. Dederal do Rio de Janeiro, Brazil)

**Free Vibration And Buckling Analysis Of Laminated Composite And Sandwich Plates Using Non-Polynomial Zigzag Theory** Rosalin Sahoo (Indian Inst. Tech., Varanasi), Bhriugu Nath Singh (Indian Inst. Tech., Kharagpur), Neeraj Grover (Thapar U., Patiala, India)  
**Interactive Local Buckling Of Composite Laminated Beams Under Compressive Load** Philip Schreiber, Christian Mittelstedt (TU Darmstadt, Germany)

**Post Buckling Of Delaminated Composite Beams With Interfacial Interactions Based On Extensible Theory** Jianghong XUE, Ping Li, Fusong Jin, Fei Xia, Ying Xiong (Jinan U., Guangzhou, China)

**The Cracking And Buckling Behaviors Of Nanostructured Metallic Multilayer Films Adherent To Compliant Substrates** K. Wu, J.Y. Zhang, Gang Liu, J. Sun (Xian Jiaotong U., China)

**Superparamagnetic Polymer Microbeads Prepared By Simple Precipitation Of Enzymatically Synthesized Short-Chain Amylose** Young-Rok Kim, Ke Luo (Kyung Hee U., Yongin, S. Korea), Tae-Joon Jeon, Sun-Min Kim (Inha U., Incheon, S. Korea) POSTER

Session 6d Wednesday 10:40AM-12:50PM Room D

## BIO 2 *Bio Materials*

Chairs: Zhen-Bing Cai, A. Varela, M. Juneja, Bum-Geun Park  
**Impact Resistance Of Bionic Functional Composite Materials Inspired From Beetle** Zhen-bing Cai, Zheng-yang Li, Yuan Ding, Min-hao Zhu (Southwest Jiaotong U., Chengdu, China)  
**Novel Magnetic Sensitive Composites Based On Biopolymers And Functionalized Nanoparticles** Alberto Varela, Williams Brett, Fayna Mameri, Souad Ammar Merah, Alain PONTON (U. Paris Diderot, France)  
**A Comparative Analysis Of Different Materials And Rapid Prototyping Techniques For 3D Printing Of Surgical Guides** Mamta Juneja, (Panjab U., Chandigarh, India) invited  
**Activation Of Peroxymonosulfate By High-Efficiency Carbon Catalysts For Effective Degradation Of Organic Pollutants** Xie Quan (Dalian U.T., China)

**Mechanical and Thermal Reliability of Sn-58wt.%Bi Solder Joints with Ag-decorated MWCNT for LED Package Component During Aging Treatment** Bum-Geun Park, Woo-Ram Myung, Choong-Jae Lee, Seung-Boo Jung (Sungkyunkwan U., Suwon, S. Korea)  
**3DP of Bioceramics With Accurate Porosity For Craniomaxillofacial Bone Repair** Changchun Zhou, Yujiang Fan, Boqing Zhang, Xuan Pei, Ping Song, Hongyuan Fan, Jun Wang (Sichuan U., Chengdu, China), Zhihong Dong (Chengdu U., China), Xingdong Zhang (Sichuan U.)

**Regulation of Cell Alignment through Micro-nano Pattern Fabricated by Two-Photon Nano-lithography** Y. Deng (GDUT/HKPolyU), Gary C.P. Tsui, Z.J. Huang, C.Y. Tang, L. Chen, W.F. Huang, Will K.W. Yeung (PolyU, Hong Kong, China)

**Dynamic Mechanical Properties of Recycled Low Density Polyethylene/Bean Pod Ash Biocomposites** Victor S. Aigbodon (U. Nigeria, Nsukka, Nigeria), S.B. Hassan (U. Lagos, Akoka, Nigeria)

**Green Biocomposites from Nanoengineered Hybrid Natural Fiber and Biopolymer** Muhammad Arshad, Aman ULLAH (U. Alberta, Canada)

Session 7a Wednesday 1:50PM-4:00PM Room A

### **GENERAL 7** *Innovative Technologies*

Chairs: S. Klawe, M. Duran, Jingyi Wu, Hong-Xia Zeng

#### **Production Of Nano-Composite Photocatalyst For Hydrogen**

**Production From Water At Neutral pH** Stephen **Klawe**, Brett Kite, Diep V. Ca (Shenandoah U., Winchester, Virginia)

#### **2D MoS<sub>2</sub>-Based Hybrid Composite Polymer Electrolyte For High Performance Lithium-Metal-Batteries**

**Jingyi** Wu, YunSheng Ye (Huazhong UST, Wuhan, China)

#### **Enhanced Thermal Conductivity Of Epoxy Resin Via A Hybrid Of H-Bn And Bn Nanosheet**

**Xiong Wei** Li, Yun Sheng Ye, Xiao Lin Xie (Huazhong UST, Wuhan, China)

#### **Poly(propylene carbonate)/Graphene Hybrid Cellulose Nanocrystal Composites**

**Hong-Xia** Zeng, Yun-Sheng Ye, Xiao-Lin Xie (Huazhong UST, Wuhan, China), Yiu-Wing Mai (U. Sydney, Australia)

#### **A Thermoset Polymer With Giant Rubbery State Stress And Energy Output**

**Jizhou** Fan (Louisiana State U., LA), Samuel I. IBEKWE (Southern U., Baton Rouge), Guoqiang Li (Louisiana State U.)

#### **Polymer Foam-Based Triboelectric Nanogenerator With Enhanced Mechanoelectric Energy Conversion Efficiency**

Hossein **Abdoli**, Siu N. LEUNG (York U., Toronto, Canada)

#### **Study On The Physical And Chemical Compatibility Between Epoxy Resin and Carbon Fibers With Respect To Various Sizing Agents**

Su Hyun Lim, Seung Yoon On, Seong Su Kim (KAIST, Daejeon, S. Korea)

Session 7b Wednesday 1:50PM-4:00PM Room B

### **MATH 7** *Reliability and Durability of Composites*

Chairs: J. Sladek, A. Anand, D.K. Rathore, Zixiang Zhang

#### **Size Effect In Quantum-Dot Nanostructures Under Thermal Loads**

Jan Sladek (Slovak Acad Sci, Bratislava), P. L. Bishay (Calif State U., Northridge), M. Repka (Slovak Acad Sci, Bratislava), E. Pan (U. Akron, OH), V. Sladek (Slovak Acad Sci)

#### **Environmental Durability Assessment Of CNT Enhanced GFRP Composites**

Abhijeet **Anand** (Nat. Inst Tech, Rourkela, India), Dinesh Kumar Rathore (KIIT Univ., Bhubaneswar, India), Rajesh Kumar Prusty, Bankim Chandra Ray (Nat. Inst. Tech Rourkela)

#### **Roles Of Interfaces And Nano-Fillers On Environmental Durability And Structural Integrity Of FRP Composites**

Dinesh Kumar **Rathore** (KIIT Univ., Bhubaneswar, India), Rajesh Kumar Prusty, Snehanshu Pal, Bankim Chandra Ray (Nat. Inst. Tech., Rourkela, India)

#### **Non-Linear in-Plane Elastic Stability Of CFRP Circular Shallow Arches Subjected To A Central Concentrated Load**

**Zixiang** Zhang, Airong Liu (Guangzhou U., China)

#### **Reliability Test Tailoring in Mechanical Environment for Polymers**

Henri **Grzeskowiak** (HGC Paris, France), David Delaux (Valeo Paris, France), Abdelkhalac El Hami (INSA Rouen, France)

#### **Reliability Analysis Of Lightweight Hybrid-Composite Beams**

Souad Ait **TALEB** (USTHB, Algeria), Abdelmadjid SI SALEM (Univ. A. Mira Bejaia, Algeria), Kamel AIT TAHAR (LM2D, Algeria)

#### **Methodology For Vibration Isolation Of Snorkel Duct**

Kumar **Yeshwantha**, B. Rammohan (PES Univ., Bangalore, India), Sreenath Kishan (Volvo Group India, Bangalore)

#### **Stress Amplitude-Fatigue Life Relationship in Hybrid Nanocomposites**

**J.Y. Lin**, N. Yu (Yuan Ze Univ., Taiwan)

Session 7c Wednesday 1:50PM-4:00PM Room C

### **INFRA 3** *key issue: Durability and Cost*

Chairs: D. Falliano, A. Buzov, Yuan Gao, T. Zhelyazov

#### **Effects of Superelastic SMA Fiber Diameter And Anchoring Length On Displacement Recovery Capacity**

**Eunsoo** Choi, Behzad Mohammadzadeh, Eunsol Kwon, Sangyong Lee, Hanchool Park (Hongik U., Seoul, S. Korea) Tues-Wed

#### **Experimental Investigation On Lightweight Foamed Concrete With Embedded Fiber Reinforcement**

Devid **Falliano**, Dario De Domenico, Giuseppe Ricciardi (U. Messina, Italy), Ernesto Gugliandolo (Aercem Srl, Messina, Italy)

#### **The Effect Of Bolt Parameters On Seismic Resistance Of Composite Multi-Drum Stone Column**

Ante **Buzov**, J. Radnic, Nikola Grgic (U. Split, Croatia)

#### **Compressive Behaviour Of The Repaired Cement Composites**

Krzysztof **Ostrowski** (AGH U. Sci. Tech., Cracow, Poland), Lukasz Sadowski (Wroclaw U. Sci. Tech., Poland)

#### **Stress-Strain Behavior Of FRP Confined Ultra-Lightweight Concrete**

**Pengda** Li, Yingwu Zhou (Shenzhen U., China)

#### **Delamination Between CFRP Plate And Steel With CFRP**

**Yuyang** Pang, Gang Wu, Haitao Wang, Yuyang Pang (Southeast U., Nanjing, China)

#### **Enhancing Effect Of Carbon Nanomaterials On The Hydraulic Permeability Of Cement Based Grout**

**Yuan Gao**, Hongwen Jing (China U. Mining Tech, Xuzhou), Mingrui Du, Shujian CHEN (Monash U., Australia)

Session 7d Wednesday 1:50PM-4:00PM Room D

### **METAL 1** *key issue: Engineering Applications*

Chairs: Farid Akhtar, O. Prilutsky, Jeong-Min Lee, Xiao-song Jiang

#### **The Microstructure And Property Evolution Of As-Cast 7005 Aluminum Alloy After Solution Treatment**

**Yu Zhang**, Jun Wang, Hongyuan Fan (Sichuan U., China)

#### **Microstructure And Properties Of Additive Manufactured Stainless From Room To Intermediate Temperatures**

Kamran **Saeidi**, Farid Akhtar (Lulea U.T. Sweden)

#### **X-Ray Amorphous Bn Powder: Preparation At Low-Temperature By Thermomechanical Synthesis And Its Possible Applications**

Oleg **Prilutsky**, Dan Yardeni, Roni Shneck (Ben Gurion U. Negev, Israel)

#### **A Study On The Prediction Of Thermo-Mechanical Fatigue Life For Ni-Based Superalloy**

**Jeong-Min** Lee, Hyunwoo Song, Junghan Yun, Soo Park, Chang-Sung Seok (Sungkyunkwan, Suwon, S. Korea)

#### **Microstructure And Mechanical Properties Of Al/Si/Al<sub>2</sub>O<sub>3</sub>/Graphenes/MWCNTs Composites Sintered By Powder Metallurgy**

**Xiao-song Jiang**, Zhen-yi Shao, Jing-rui Li, De-gui Zhu and Min-hao Zhu (Southwest Jiaotong U., Chengdu, China)

#### **Multiscale Numerical Simulation Of Deformation And Fracture In Materials With Metal Matrix Composite Coatings**

Ruslan R. Balokhonov, Varvara A. Romanova, Evgeniya S. Emelianova, Maxim V. Sergeev (RAS, Tomsk, Russia)

#### **Analysis On Enhancement Of Material Properties With Nanoparticles In The Metal Matrix**

Sunny **Lalwani**, Sibi Chacko (Heriot Watt U., Dubai, U.A.E.)

#### **Influence of Microporosity And Hybridization on PAN/PVDF Composites-Based Adsorbents For CO<sub>2</sub> Capture**

Young-Jung Heo, Ji Won Lee (Inha U., Incheon, S. Korea), Kyong Yop Rhee (Kyung Hee U., Yongin, S. Korea), Soo-Jin Park (Inha U.) POSTER

#### **Impact Behaviors Of Biodegradable Epoxy-Reinforced With Epoxidized Soybean Oil**

Yoon-Ji Yim (Inha U., Incheon, S. Korea), Kyong Yop Rhee (Kyung Hee U., Yongin, S. Korea), Soo-Jin Park (Inha U.) POSTER

#### **Numerical Simulations Of The Mechanical Response Of Concrete And Reinforced Concrete Structural Elements With External Or Internal FRP Reinforcement**

**Todor** Zhelyazov (T.U., Sofia, Bulgaria) poster

Session 8a Wednesday 4:00PM-6:10PM Room A

## GENERAL 8 *Nano-materials: Development Tendencies*

Chairs: X.W. Deng, L. Lapcinskis, A. Lawan, Yanlei Wang

**Date-Driven Modeling Of Fatigue Damage In Large-Scale Composite Wind Turbine Blades** X.W. Deng (U. Hong Kong, China)  
**Increasing The Thermal Conductivity Of Polymer Nanocomposites Filled With Carbon Nanotubes Via Molecular Dynamics Simulation** Yangyang Gao (BUCT, Beijing, China), Florian Müller-Plathe (TU Darmstadt, Germany)

**Polymer/Alumina Nanofiber Composite Sheets with Anisotropic High Thermal Conductivity** Akiyoshi Ohgoshi, Shuya Gao, Kazuya Takahashi, Koji Nakane (U. Fukui, Japan)

**Effect of Nano-Al on Thermal Decomposition Characteristics and Sensitivities of FOX-7 based PBX** Jia-lin Cai, Bao-hui Zheng, Yuan-tong Shi (CAS, Mianyang, China)

**Flexible Wide Potential Window Solid-State Supercapacitor With Porous Rubber And Carbon Nanostructure Composite Electrodes** Linards Lapcinskis, I. Cirulis (Riga Tech U., Latvia), P. Lesnicens (U. Latvia, Riga), A. Linarts (Riga T.U.), A. Sutka (Riga T.U.), M. Knite (Riga T.U., Latvia)

**Effect Of Various Nanotube Lengths On Thermal And Electrical Properties Of Polyester Resin Reinforced With CNT/GNP Hybrid** Arash Badakhsh, Chan Woo Park, Byung-Joo Kim (Korea Inst. Carbon Conv Tech, and Chonbuk Nat. U.)

**Piezoresistive Property Of Carbon Nanofibers/Epoxy Composite** Yanlei Wang, Yongshuai Wang (Dalian U.T., China)

**Homogeneity Of Glass Bubbles/ Thermoplastic Composites In Injection Molding** Ahmed Elsabbagh (Ain Shams U, Cairo, Egypt), Tayseer Attia, Amna Ramzy (German U. in Cairo, Egypt), Leif Steuernagel (Clausthal U.T., Germany) poster

**Development And Characterization Of Nanocrystalline Cobalt Powder Via High Energy Ball Milling Process** Azeez Lawan Rominiyi, Mxolisi Brendon Shongwe (Tshwane U.T., Pretoria, S. Africa), Peter A. Olubambi (U. Johannesburg, S. Africa) poster

Session 8b Wednesday 4:00PM-6:10PM Room B

## MATH 8 *Damage Mechanisms in Composites*

Chairs: J.B. Bai, L.Evgeny, R. Yassine, M. Mokhtari

**Progressive Damage Behaviour of Composite Tee Joint under Tensile Loading** J.B. Bai, C.H. Dong, J.J. Xiong, D. Chen (Beihang U., Beijing, China)

**Nonlinear Elasticity In Composites And Its Influence On Damage And Failure** Lomakin Evgeny (Lomonosov Moscow State U, Russia), Fedulov Boris, Fedorenko Alexey (Aircraft Design Cen, Moscow, Russia)

**Assessment And Modeling Of Dynamic Properties And Material Assignment Of Bovine Tibia Via CT Scans** Reem Yassine, Samir Mustafa, Mohammad Karim Elham, Ali Fakhreddine, Mohammad Sayegh, Ramsey Hamade (American U. Beirut, Lebanon)

**Damage Prediction Of Aluminum 2024T3 Notched Under Tensile Load Using XFEM Techniques** M. Mokhtari, H. Benzaama, S. Gouasmi, Slamen, I. Mrabent (Nat. Polytec Oran, Algeria)

**Damage Characterization Of Flax Fibre Composite Using Linear And Nonlinear Vibration Resonant Techniques** Mondher Haggui, A. EL Mahi (Maine U., LeMans, France), Z. JENDLI (ESTACA, Laval, France), A. Akrouf, M. Haddar (LA2MP, Sfax, Tunisia)

**Crack-Tip Stress Fields In Orthotropic Composites** Pu-Rong Jia (Northwestern Polytech U., Xian, China)

**Study Of Crack Propagation Mechanisms Of Skin-Stringer Composite Sub-Elements Joined With Carbon Nanotube Adhesive Films** Xoan F. Sanchez-Romate, María Sánchez, Alberto Jiménez-Suárez, Alfredo Güemes (U. Rey Juan Carlos, Madrid, Spain), Angel Renato Pozo (U. Politec Madrid, Spain), Alejandro Urena (U. Rey Juan Carlos, Madrid)

**Modeling And Validation Of Coupling Damage Mechanisms In Laminated Composites** Minh-Quan Le, Pierre Ladevèze, David Néron, Cuong Ha-Minh (LMT, Univ Paris-Saclay, France)

**Graphene For Biomedical Applications** Mariana Ionita, Teddy Tite, Sebastian Muraru, Diana Becheru (U. Politeh. Bucharest, Romania)

**Graphene Oxide Processing And Characterization For Advanced Manufacturing Applications** George Mihail Vlaseanu, Teddy Tite, Diana F. Becheru, Eugeniu Vasile, Jorge S. Burns, Mariana Ionita (U. Politeh. Bucharest, Romania)

Session 8c Wednesday 4:00PM-6:10PM Room C

## INFRA 4 *key issue: Durability and Cost*

Chairs: V. Gribniak, Yoseok Jeong, M. Kyoung, Tiejiong Lou

**A New Approach For Quantification Of Residual Stiffness Of Flexural Concrete Elements With Composite Reinforcement** Viktor Gribniak, Aleksandr Sokolov (VGTU, Vilnius, Lithuania), Lluís Torres (U. Girona, Spain), David Hui (U. New Orleans), Haji Akbar Sultani, Murat Can Tuncay (VGTU)

**Advances In Macro Defect Free Polymer-Cement Composites (MDF)** Silvia Patachia, Liana Baltas, Mircea Tieren (Transilvania U. Brasov, Romania), Ozgur Ekincioglu, Hulusi M. Ozkul (Istanbul T.U., Turkey)

**Effect Of Mechanical Stress On Electrical Impedance Of Strands Embedded In Prestressed Concrete** Byeong Hua Kim (Kyungnam U., Gyeongnam, S. Korea), Do Hyung Lee (Paichai U., Daejeon, S. Korea)  
**Coadjacent Mode Model For Stacked Stone Pagoda System** Byeong Hua Kim (Kyungnam U., Gyeongnam, S. Korea), Do Hyung Lee (Paichai U., Daejeon, S. Korea)

**Study Of Concrete Beams Prestressed With Partially Bonded CFRP Bars Subjected To Cyclic Loads** Yoseok Jeong, Wooseok Kim (Chungnam Nat. U., Daejeon, S. Korea)

**Electromechanical Response Of Self-Sensing Concrete Beam Under Flexure** Min Kyoung Kim, Dong Joo Kim (Sejong U., Seoul, S. Korea)

**Effect Of Bonded Reinforcing Bars On The Flexure Of Concrete Beams With External FRP Tendons** Tiejiong Lou (Wuhan U.T., China, and U. Southampton, UK), Di Min (Wuhan U.T.)

**Application Of Carbon Fiber-Reinforced Polymer (CFRP) Tendons On Precast Segmental Prestressed Concrete Beams** Tan D. Le, Thong M. Pham, Hong Hao (Curtin U., Bentley, W. Australia)

**Main Parameters Concerning Concrete Columns Confined With External FRP: Experimental Tests** A. DeDiego, Sonia MARTINEZ, L. Echevarría, J.P. Gutiérrez (IETCC, CSIC, Spain) Wed

Session 8d Wednesday 4:00PM-6:10PM Room D

## BIO 3 *Bio Composites and Applications*

Chairs: Ji Hong Min, A.U.M. Shah, Jumana Mahmud, M. Bindu

**Fabrication Of The Grooved Conductive Scaffold To Mimic The ECM Structure Of Nerve Cells For Neural Regeneration** Ji Hong Min, Min-Ho Hong, Hyo Jung Lee, So Young Noh, Seong Yi, Won-gun KOH (Yonsei U., Seoul, S. Korea)

**Direct-Write Nano-Wrinkled Polystyrene Fibres For Guided Cell Migration** Xia Li, Wenyu Wang, Duo Zhang, Yan Yan Shery Huang (U. Cambridge, UK)

**Coordination Triggered Hierarchical Folate/Zinc Supramolecular Hydrogels Leading to Printable Biomaterials** Kaerdun Liu, Yun YAN (Peking U., Beijing, China)

**Characterization Of Nanostructured Bioactive Ti-Ta Alloys For Medical Applications** Julia Claudia Mirza-Rosca (U. Las Palmas, Gran Canaria, Spain), Alexandru Pascu, Mircea Horia Tieren (Transilvania U. Brasov, Romania)

**Microscope Observations On Bamboo Composites After Different Period Of Soil Burial Procedure** Ain U. M. Shah, Mohamed T. H. SULTAN (U. Putra Malaysia)

**Effect Of Nature And Concentration Of Alkali Metal Ions On Doped Mesoporous Silica For Humidity Sensing Characteristics** Suhasini Kunchakara, Meenakshi Dutt, Amar Ratan, Vaishali SINGH (Indraprastha U., New Delhi, India) Tues-Wed

**Fabrication And Characterization Of Synthetic And Biodegradable Polymeric Films For Packaging Applications: Effect Of Gamma Radiation** Jumana Mahmud, Md. Naimul Islam, Farhana Islam, Ruhul A. Khan (Inst. Radiation and Polymer Tech., Dhaka, Bangladesh)

**Designing Of Nano-Hydroxylapatite Modified Silicone Rubber Composites: Correlation With Biocompatibility Aspects** M. Bindu, G. Unnikrishnan (Nat. Inst. Tech., Calicut, India)

**Experimental Modeling Of Microwave-Pyrolysis-Biochar Reinforced GFRP Composites** Chase A.J. Wallace, Gobinda C. SAHA, Muhammad T. Afzal (U. New Brunswick, Canada)

**Towards The Improvement Of The Mechanical Properties Of Chicken Feathers Based Thermoplastic Biocomposites** Fernando CARRILLO, Casadesús M., Macanás J., Colom X., Cañavate F.J., Álvarez M.D., Garrido N., Molins G. (U. Politec. Catalunya, Colom, Spain)



Session 9a Thursday 8:30AM-10:40AM Room A

## GENERAL 9 Nano-Materials: Production Technologies

Chairs: P. Boisse, A. Aleksandryan, Zhou-Rui Xu, F. Fendrych  
**Bending And Wrinkling Of Composite Fiber Preforms And Prepregs** Philippe Boisse, J. Colmars, N. Hamila, N. Naouar, Q. Steer (U. Lyon, France)

**A Shell Approach For Textile Composite Forming Simulations** R. Bai, P. Boisse, L. Biao, J. Colmars (U. Lyon, INSA-Lyon, France)

**Interconnection of Polymers to Ti by Using CF Plug** Yoshitake Nishi (Tokai U., Hiratsuka, and Ecole Cen Lyon, France), Naruya Tsuyuki, Sagiri Takase, Shodai Kitagawa, Hitoki Hasegawa, Yuichi Enomoto, Sho Ishii, Shigehito Inui, Atsushi Kasai, Kazuma Shiraishi, Helmut Takahiro Uchida, Hideki Kimura, Yoshihito Matsumura, Akira Tonegawa, Michael C. Faudree (Tokai U., Hiratsuka, Japan), Michelle Salvia (Ecole Cen Lyon, France) invited Wed, Thurs

**Effects of Carbon Fiber Covering with Sizing Resin Film in Polypropylene Matrix Composites on Bending Strength** Shodai Kitagawa, Hideki Kimura, Sagiri Takase, Naruya Tsuyuki, Daisuke Kitahara, Anna Takahashi, Michael C. Faudree, Helmut T. Uchida, Akira Tonegawa I, Masae Kanda, Noriyuki Inoue (Tokai U., Kanagawa, Japan), Satoru Kaneko (KISTEC, Kanagawa), Tamio Endo (Sagamihara Surf Lab, Kanagawa), Michelle Salvia, Yoshitake Nishi (Ecole Cen Lyon, France) Wed, Thurs

**Microwave Plasma CVD Deposited Nanocrystalline Diamond Films For Protection Of Zirconium Nuclear Fuel Rod Cladding** Frantisek Fendrych, Irena Kratochvilova, Petr Ashcheulov, Andrew Taylor, Jan Vlcek (ASCR, Prague, Czech Rep.), Radek Skoda, Jan Skarohlid (Czech Tech U., Prague), Milan Simonik (Westinghouse Prague), Steven Johnson (Westinghouse, Columbia, South Carolina)

**Flame Retardant Nanocomposites By Using Inorganic-Organic Hybrid Modifiers** Ewa Kicko -Walczak, Grazyna Rymarz (Inst.Eng. Polymers Mat., Gliwice, Poland)

**Interfacial Thermal Conductance Of Cu/Ti/Diamond Multilayer Films** Guo Chang, Xitao Wang and Hailong Zhang (Univ. Sci. Tech. Beijing, China)

**Characterization Of Nanostructured Ni- Binary And Ternary Alloys Developed Via Spark Plasma Sintering Technique** Babalola Bukola Joseph, Mxolisi Brendon Shongwe (Tshwane U.T., Pretoria, S. Africa), Babatunde A. Obadele, Peter A. Olubambi (U. Johannesburg, S. Africa) poster

Session 9b Thursday 8:30AM-10:40AM Room B

## MATH 9 Modeling & Analysis of Laminate/Sandwich Composites

Chairs: Ying Tie, G. Rama, R. Moheimani, Jianghong Xue  
**Investigation On The Low-Velocity Impact Resistance Of CFRP Laminates Repaired With Adhesively Bonded External Patches** Ying Tie (Zhengzhou U., China), Yuliang Hou (Zhengzhou U. and U.T. Compiegne, France), Cheng Li (Zhengzhou U.)

**FE Analysis Of Composite Laminates By High-Performance 3-Node Shell Element** Gil Rama, Dragan Marinkovic, Manfred Zehn (TU Berlin, Germany)

**Co-Rotational Piezoelectric Shell Element For Active Composite Laminates** Dragan Marinkovic, Gil Rama, Manfred Zehn (TU Berlin, Germany)

**Effect Of Non-Flat Interface And Fracture Mode On The Novel Bonded Joint** Kuan-Yu Wang, Po-I Chen, Hsin-Haou Huang (Nat. Taiwan U., Taipei)

**Finite Element Analysis Of Sandwich Composite Laminates Having Skin/Core Delamination Defect** Reza Moheimani, Reza Sarayloo, Hamid Dalir (Purdue School Eng & Tech, Indianapolis)

**Delamination Propagation Of Laminated Beams Including Anti-Penetrating Contact Effect** Jianghong Xue, Mingqiao Tang, Ping Li, Fei Xia, Jizhu Xu (Jinan U., Guangzhou, China)

**Numerical Analysis Of Performance And Failure Of Composite corrugated Core Sandwich Structures Using Cohesive Zone Model** Wen-bin Hou, Ye Yu, Ping Hu, Hui-hui Yang (Dalian U.T., China)

**Low-velocity Impact Resistance Behaviors of Bio-inspired Helicoidal Composite Laminates with Non-linear Rotation Angle** Hongyong Jiang, Yiru Ren (Hunan U., Changsha, China)

**Impacts Of Zinc Oxide Nanoparticle Interactions With Protein Matrices On Biological Responses** Soo-Jin Choi (Seoul Women's Univ., S. Korea) POSTER

Session 9c Thursday 8:30AM-10:40AM Room C

## INFRA 5 key issue: Durability and Cost

Chairs: Zhifang Zhang, Caiqian Yang, A. Sokolov, Wael Zatar  
**Frequency-Based Delamination Detection In Frp Curved Plates** Zhifang Zhang, Jingwen Pan (Guangzhou U., China)

**Study On The Creep Behaviours Of Engineered Cementitious Composites** Caiqian Yang (Xiantan U., China), Kefeng Li (Southeast U., Nanjing, China), Yeyong Zheng (Xiantan U.), Yanbing Zhao, Wenping Du (Southeast U.)

**Seismic Response Of A Bridge Under Recent Earthquake Of 2016 Gyeongju Korea** Do Hyung Lee (Paichai U., Daejeon, S. Korea), Byeong Hwa Kim (Kyungnam U., Gyeongnam, S. Korea)

**Residual Physical And Mechanical Properties Of Concrete Made With Siliceous And Calcareous Sand Exposed To High Temperature** Samia Hachemi, A. Ounis (U. Biskra, Algeria)

**Numerical Analysis Of The Effects Of PBO-FRCM Confinement On RC Columns** Piero Colajanni, Alessia MONACO (U. Palermo, Italy) Thurs

**Experimental Analysis Of Mechanical Aspects Of Bond Behavior Of Synthetic Macro-Fibers In Concrete** Aleksandr Sokolov, Viktor Gribniak, Arvydas Rimkus (VGTU, Vilnius, Lithuania), David Hui (U. New Orleans), Mantas Garnevicius, Linas Plioplys (VGTU, Vilnius, Lithuania)

**FRP Wrapping For Rehabilitation Of Transportation Infrastructure** Wael Zatar, Hai Nguyen (Marshall U., West Virginia)

**Cyclic Response Of Shear-Deficient Rc Beam-Column Joints Strengthened With Additional Transverse Steel Bars** Emmanuil Golias, Klaus Wittemann, Constantin E. Chalioris, Chris G. Karayannis (D.U.Th., Xanthi, Greece)

**Impact Resistance Of Large-Rupture-Strain FRP-Confined Concrete** Y.L. Bai, Z.W. Yan (Beijing U.T., China), J. G. Dai (Hong Kong Poly U., China), Q. Han<sup>1</sup>, X.L. Du (Beijing U.T., China)

Session 9d Thursday 8:30AM-10:40AM Room D

## Energy 3 (Oxide) key issue: Engineering Applications

Chairs: N. Budhiraja, M. Proenca, A.R. Setoodeh, H. Palza  
**Investigation Of Photocatalytic Activity Of Sn Substituted Cu<sub>2</sub>O Nanostructures** Narender Budhiraja, Sapna, S.K. SINGH (DCRUST, Sonapat, India)

**Effect Of Carbon Nanotube On Magnetic Properties Of Iron Oxide Reinforced Aluminum Matrix Composites** Alexandre Tugirumbano, Yong-Sun Kim, Sun Ho Go (Jeonju U. Inst. Carbon Tech, S. Korea), Vijay S.J. (Karunya U., Coimbatore, India), Hee Jae Shin, Lee Ku Kwac, Hong Gun Kim (Jeonju U., S. Korea)

**Development of Thin Films Composed Of Plasmonic Nanoparticles (Au, Ag) Dispersed In An Oxide Matrix (CuO), for LSPR (Gas) Sensing** Manuela Proenca, Joel BORGES, Marco S. Rodrigues, Filipe Vaz (U. Minho, Braga, Portugal)

**Influences of Fiber Surface Treatment and Iron Oxide Nanoparticles on Tensile behavior of Kenaf/Polyester Nanocomposites Fabricated by VIP** A.R. Setoodeh, M.S. Soltani (Shiraz Univ. Tech., Iran), S.M. Zebarjad (Shiraz U.)  
**Graphene Oxide Paper With Chitosan Having Multifunctional Behavior** Humberto Palza, Patricia Palma, Diego Cortinez (U. Chile, Santiago)

**Preparation and Characterization of Bortezomib and FITC-Albumin Loaded Poly Caffeic Coated Iron Oxide Nanoparticles for Hyperthermia Therapy** Pierre Cybulski (U.T. Belfort Montbeliard, France), Ghizlane Choukrani, Ludwig Erik Aguilar, Chan Lee Park, Cheol Sang Kim (Chonbuk Nat. U., S. Korea)

**Morphology And Properties Of Poly(Lactide Acid)/Epoxide Natural Rubber Blends By Melt Processing** Pengli Zhang, Rentong Yu (Hainan U., Haikou, China)

**Thermal And Electrical Properties Of Composite Electrolyte Based On F-Doping Barium Indate** Natalia Tarasova, Nadezhda Kochetova, Irina Animitsa, Anzhelika Galisheva, Egor Matveev, Irina Alyabysheva (Ural Fed. Univ., Ekaterinburg, Russia)

**Evaluation Of Different Metal Oxide Nano Particle Finishes, For Self-Cleaning Of Cotton Fabric** Sheikh Muhammad Nawaz, Zeeshan Nawaz, Rameez Ibraheem (U. Agriculture Faisalabad, Pakistan)

Session 10a Thursday 10:40AM-12:50PM Room A

## **GENERAL 10** *New Trends in Production Technology*

Chairs: A. Benfdila, S.V. Kotomin, G.Brunetti, D.K. Aktas

**From Silicon to Post Silicon CMOS Technology** Arezki **Benfdila** (Univ. M. Mammeri, Algeria)

**Electrospinning And Mechanotropic Phase Separation** S.V. **Kotomin**, V.G. Kulichikhin, I Yu. Skvortsov (Russian Acad Sci, Moscow)

**Research Progress On Laser Treatment Of Adhesive Surface Of Composite Materials** Qi **Chen**, Guoqing Yuan (Tongji U., Shanghai, China)

**Photonic Devices For Biosensing And Trapping At Nanoscale** F. **Dell'Olio**, D. Conteduca, G. Brunetti, M.N. Armenise, Caterina CIMINELLI (Politec Bari, Italy)

**Photonic Devices for Space Applications** Giuseppe **Brunetti**, F. Dell'Olio, D. Conteduca, M.N. Armenise, C. Ciminelli (Politec Bari, Italy)

**Reprocessing Of the Composites Based On the poly(Lactic acid) Loaded With Olive Husk Flour** Samra Isadounene, Amar Boukerrou, Dalila Hammiche (Univ. A. Mira,Bejaia), Denis Rodrigue (U. Laval,Quebec City, Canada), Hocine Djidjelli (Univ. A.Mira)

**Volume Phase Transitions In Anionic Hydrogels By Fast Transient Fluorescence Technique** Demet Kaya **Aktas**, Filiz Oztekin (Istanbul T.U., Turkey)

**Detection Of Dna On Electrochemical Biosensor Based On Graphene For Healthcare Applications** Elena Chiticaru, Teddy Tite, Jorge S. Burns, Mariana Ionita (U. Politeh. Bucharest, Romania)

**Mechanical Behavior Of Tuff Mortars Preserved In Seawater** Ourdia **Fedaoui**-Akmoussi, F. Oulmas, S. Kaci (U. Mouloud Mammeri, Algeria)

Session 10c Thursday 10:40AM-12:50PM Room C

## **NANO 4** *processing and engineering applications*

Chairs: Andre Schirmeisen, J. Diaz-Reyes, M.A. Safari, Shuai Zhang, **Physical Property Characterization of Rare Earths (Ce,Eu)-Doped CdS Nanofilms Synthesised by Chemical Bath Deposition Influence of the synthesis time** Joel **Diaz-Reyes** (Inst Polit Nac Mexico), Jorge Indalecio Contreras-Rascon (U. Poli Met Puebla, Mexico), José E. Flores-Mena

(Benemerita U. Auto Puebla, Mexico), Roberto S. Castillo- Ojeda (U. Poli Pachuca, Mexico)

**Janus Green B Photo-Degradation By Applying Synthesized Ag/TiO<sub>2</sub> And Ag/P-25 Nano Composites** Mohammad Amin **Safari** (Islamic Azad U., Tehran, Iran)

**Dry Wear Resistance And Its Relation To The Density Of CNT-Al Nano-Composite Developed Using Powder Metallurgy Route** U. **Abdullahi**, M.A. Maleque, I.I. Yaacob, M.Y. Ali (Int. Islamic U., Malaysia)

**Electrical Conductance And Mechanical Strength Of Bulk Aluminum/Graphene Composites Fabricated By Friction Stir Processing** Shuai Zhang, Gaoqiang Chen, Timing Qu, Qu Liu, Gong Zhang, Qingyu Shi (Tsinghua U., Beijing, China)

**Band Gap Tuning Of Cu<sub>2</sub>ZnSnS<sub>4</sub> Thin Film By Residual Stress** **Sungwook** Hong (Daegu U., Gyeongsan, S. Korea), Chan Kim (Kyungpook Nat U., Daegu, S. Korea)

**Molecular Alignment-Dependent Surface Features in Sequentially Polymerized Polyurea Films** Jin **Seok** Lee (Sookmyung Women's U., Seoul, S. Korea)

**Normalized Approach To Nano-Film Topography And Magnetism Characteristics: A Study Of Their Interdependence** Jean **Ebothe** (U. Reims, France)

**Nanocomposites of MOF/HNBR and Its Properties** Naiqun Yao, Liqun Zhang, Dongmei Yue (BUCT, Beijing, China)

**High Flame Retarding Performance Bismaleimide Resin Interleaved With Polybenzimidazole/Aminated Aligned Carbon Nanotube Bundles Hybrid Films** **Qingbao Guan**, Li Yuan, Zehao Wang, Aijuan Gu, Guozheng Liang (Soochow U., Suzhou, China)

Session 10b Thursday 10:40AM-12:50PM Room B

## **MATH 10** *Composites Thermal Properties Analysis, Applications*

Chairs: Igor Burmistrov, S. Sadoghi, P.N.B. Reis, Nan Ye

**Heat Transfer In A Pulsating Heat Pipe Using Al<sub>2</sub>O<sub>3</sub>-H<sub>2</sub>O Nanofluid** Muhammad Zufar **Ahmad Faudzli**, Prem GUNNASEGARAN, Ng Khai Ching (U. Tenaga Nasional, Kajang, Malaysia), Hemantkumar Mehta (Sardar Vallabhbhai Nat.Inst.Tech., India)

**Thermoset Curing Through Joule Effect** S. **Gomez-Barreiro**1, C. Gracia-Fernández2, J. López-Beceiro1, R. Artiaga (Univ. a Coruna,Spain)

**Experimental And Theoretical Study On Thermal Conductivity Of Porous PDMS** **Chengfeng** Fang, Zuguang Bian, Xin Song, Peng Pan (Zhejiang U., Hangzhou, China)

**Enhancement Of Percolation Threshold By Control The Structure Of Composites Based On A Mixture Of Elastomer And Thermoplastic** Igor **Burmistrov**, N. Gorshkov (Yuri Gagarin St.Tech U. Saratov, Russia), S. Anshin, E. Kolesnikov, K. Kuskov, I. Ilinykh (MISIS, Russia), J.-P. Issi (U.Cath. Louvain,Belgium), M. Vikulova, D. Kuznetsov (Russia)

**New Numerical Method for Predicting Transient Heat Transfer In Composite Materials** Sogol **Sadoghi** (Bank of Industry and Mine, Tehran, Iran)

**An Experimental Study on Effect of Face Sheet Thickness of Lightweight Sandwich Structure on Impulsive Sensitivity** Nan **Ye** (HeBei U.T., Tianjin, China), Wei Zhang (Harbin I.T., China)

**High Velocity Impact Experiment Of A Carbon Fiber Reinforced Plastics**

Wenbo Xie, Wei Zhang, Xiongwen Jiang (Harbin I.T., China)

**Comparison Study On The Dynamic Response Of Metallic And Composite Lightweight Structures Subjected To Underwater Impulsive Loading** Wei **Huang** (Huazhong U.Sci.Tech., Wuhan, China), Wei Zhang (Harbin Inst.Tech., China)

Session 10d Thursday 10:40AM-12:50PM Room D

## **Metal 2** *key issue: Engineering Applications*

Chairs: M. Madej, Huan Yu, Joo Sung Kim, M.K. Abbass

**The Reaction of the HSS Matrix With The Addition Of Tungsten Carbide During The Production Of Composites By Copper Infiltration** Marcin **Madej**, Beata Leszczynska-Madej (AGH U.Sci.Tech., Krakow, Poland)

**Analysis Of The Microstructure And Selected Properties Of The Aluminium Reinforced With SiC Particles** Beata **Leszczynska-Madej**, Anna Wasik, Marcin Madej (AGH U.Sci.Tech., Krakow, Poland)

**A New Method to Produce Hydroxyapatite-Gelatin Coating On Titanium** O.A. **Golovanova** (Dostoevsky State U., Russia)

**Progress on Numerical Simulation in the Laser Cladding Process** Nusrat **Tamanna**, Roger Crouch, Sumsun Naher (City Univ. London, UK) wed-thurs

**Structural And Lattice Dynamic Properties Of Mg<sub>2</sub>Sn And Mg<sub>2</sub>Pb Compounds** Yassine **Chaouche**, Mohammed Loutfi Benkhedir (U. Larbi Tebessi, Algeria)

**Ultrafine Grained AZ61Mg/Ti Composite With High Mechanical Strength** Huan **Yu**, Lianxi HU, Yu Sun (Harbin I.T., China), Lili Ren (Beijing, China), Yuan Yuan, Zhipeng Wan (Harbin I.T., China)

**Electrodeposition Of Ternary Copper Indium Selenide Compounds Using Multibath Precursors And Separated Selenization** Joo **Sung** Kim, Young Been Kim, Dong Su Kim, Hyung Koun Cho (Sungkyunkwan U., Suwon, S. Korea)

**Influence Of Addition Of Al<sub>2</sub>O<sub>3</sub> And SiO<sub>2</sub> Nanoparticles On Corrosion Behavior Of Aluminum Alloy ( Al-4.5%Cu-1.5%Mg) Produced By Powder Metallurgy** Muna Khethier **Abbass**, Basma Finner Sultan, Omar.Hashim HASSOON (Univ.Tech., Baghdad, Iraq) **Study Of Microstructure And Properties On ZM6 Magnesium Alloy Surface Induced By Laser Cladding** Rongjuan Yang, Dongyun Ge (\*), Xuan Zhao (Tsinghua U., Beijing, China)

**Investigation Of Free Volume Of Oriented Electrical Conducting Polymer Composites By Spin Probe Method** Jimsher **Aneli** (Inst Machine Mechanics, Tbilisi, Georgia), Levan Nadareishvili (Georgian Tech U.) poster  
**Effect Of Hot Isostatic Pressing On The Alumo-Matrixcomposite Al-7cu-7si Alloy Structure And Mechanical Properties** T.K. **Akopyan** (Baikov Inst,Moscow, Russia), A.G. Padalko (MISIS, Moscow, Russia) poste

Session 11a Thursday 1:50PM-4:00PM Room A

## GENERAL 11 *Additive Production Technologies*

Chairs: Zhenyu Wang, A.V. Malakhov, S.A. Ngah, R. Sterkenburg  
**3D Printed Cellular Graphene/ Polydimethylsiloxane Composites For Flexible Strain Sensors** Zhenyu Wang, Yanqiu Chen, Yu Liu (Jiangnan U., Wuxi, China)

**Rheological Study Of Ceramic Nanocomposites For Its Viability In 3D Printing** Jorge Salgado-Beceiro, Manuel Sanchez-Andujar (Univ a Coruna, Spain), Antoine Desjardins (Ecole Nat. Sup. Arts Decoratifs, Paris, France), Socorro Castro-Garcia (U. a Coruna)

**Design And Manufacture Of Bolted Joints In Variable Stiffness Composite Structures Made By 3d Printing** Andrey V. Malakhov, A.N. Polilov (RAS, Moscow, Russia), K. Sugiyama, R. Matsuzaki (Tokyo U. Sci., Japan)

**Extrusion-Based 3-D Printing Of Thermoset Polymer Composites** Shamsiah Awang Ngah, Richard J Ball (U. Bath, UK)

**3D Printing Of Continuous Carbon Fiber Reinforced PLA Composites** Tengfei Liu, Xiaoyong Tian (Xian Jiaotong U. China)

**Secondary Machining Operations for Carbon Fiber 3D Printed Molds** Ronald Sterkenburg, Peng Wang & Garam Kim (Purdue U., Indiana)

**Vibration Analysis Of A Magneto-Rheological Sandwich Structure Under Continuous Variation Of The Magnetic field Intensity** Vincent Ammovilli, Massamaesso Bilasse, Isabelle Charpentier (U. Strasbourg, France)

**Composite AlSi-SiC Foams** Jerzy Nowacki, A. Sajek (West Pomeranian U.T., Szczecin, Poland)

Session 11c Thursday 1:50PM-4:00PM Room C

## INFRA 6 *key issue: Durability and Cost*

Chairs: Rafiqul Tarefder, P. Bodzak, L. Madouni, A. Zanichelli  
**Dynamic Tensile Properties Of Polyethylene Naphthalene Fiber Bundle With Large Deformability** Y.L. Bai, Z.W Yan (Beijing U.T., China), J. G. Dai (Hong Kong Poly U., China), Q. Han, X.L. Du (Beijing U.T., China)

**Analysis Of Strengthening Capability Of RC Plates With Prestressed CFRP Strips** Przemyslaw Bodzak (Lodz U.T., Poland)

**Contribution Of Externally Bonded FRP To Shear Performance Of RC Coupling Beam** . Lyliia Madouni (Univ Mouloud Mammeri, Algeria), M. Ould Ouali (LEC2M, Belgium), N.E. Hannachi (U. Mouloud Mammeri)

**Effect Of Matrix Strength And Fiber Content On Dynamic Increase Factors Of Tensile Response Of High Performance Fiber Reinforced Cementitious Composites (HPFRCCs)** Jun-Kil PARK (Sejong U., Seoul, S. Korea), Sung-Wook Kim, Gi-Joon Park (KICT, S. Korea), Dong Joo Kim (Sejong U.)

**Fracture Behaviour Of Hybrid Roller-Compacted Concrete** Andrea Zanichelli, Andrea Carpinteri, Giovanni Fortese, Camilla Ronchei, Daniela Scorza, Sabrina Vantadori (U. Palma, Italy)

**Fuzzy Linear Modeling Of RC Beams Strengthened In Shear With CFRP Sheets** Theodoros Rousakis, Anastasios SAPALIDIS, Basil Papadopoulos (D.U.Th., Xanthi, Greece)

**Experimental Investigation And 3D Finite Element Analysis Of Solid And Hollow Clay Bricks** Athanasia Thomoglou, Theodoros Rousakis, Athanasios Karabinis, Nikolaos Mellios (D.U.Th., Xanthi, Greece)

**Nanoindentation Creep Data Modeling Of Mastic Materials** Rafiqul Tarefder, Hasan Faisal (U. New Mexico, Albuquerque)

Session 11b Thursday 1:50PM-4:00PM Room B

## MATH 11 *Analysis of Bi-composites & Polymer Composites*

Chairs: F. Cecchini, A. Singh, B.J. Blinzler, Chensong Dong  
**Numerical Analysis Of Polymeric Pentamode Systems** Federico Cecchini, Valeria Cherubini, Francesco Fabbrocino, Francesca Nanni (U. Rome Tor Vergata, Italy)

**Dynamic Response And Design Consideration Of Ultra-High Molecular Weight Polyethylene Composite Target Under Ballistic Impact With Shock** Amandeep Singh, Suhail AHMAD (IIT Delhi, India)

**Homogenization Method For 2-D Nanostructure Reinforced Epoxy** Brina J. Blinzler, R. Larsson (Chalmers U.T., Goteborg, Sweden), D.J. Carastan, D.V.A. Chiaretti, M.K.M. Moritugui, A. G. Táboas (Univ. Fed ABC, Santo Andre, Brazil)

**Mechanical Properties of Unidirectional Nanotube and Nanoplatelet Reinforced Hybrid Epoxy Nanocomposites** Chensong Dong (Curtin U., Perth, Australia)

**Thermal Forced Vibration Analysis Of Nanocomposite Sandwich Plates Reinforced By Randomly Dispersed CNTs** Babak Safaei (Tsinghua U., Beijing, China), Rasool Moradi-Dastjerdi (Islamic Azad U., Iran), Zhaoye Qin, Fulei Chu (Tsinghua U.)

**Structure and Property of the Modified and Predispersed Ultra-fine Short Fiber Masterbatch Filled Rubber Based Materials Based Materials** Weidong WU, Liqun Zhang (BUCT, Beijing, China)

**Analytical Model for Predicting Tensile Behaviour of Corrugated Flexible Composite Skin** Jiangbo Bai, D. Chen, J.J. Xiong, C.H. Dong (Beihang U., Beijing, China)

**Experimental Study On Drop-Weight Impact Response Of Basalt Fiber Aluminum Laminates (BFMLS)** Dongliang Zhang (China Acad Eng Physics, Mianyang), Xiaoyan Zhang (Sichuan U. Jinjiang Coll, China), Jun Mo (Chiona Acad Eng Phys, Mianyang), Qingyuan Wang (Sichuan U. and Chengdu U.)

**An Experimental Investigation On Fundamental Natural Frequency And Damping Ratio Of Graphene Reinforced Epoxy Composites** Mohammad Raffiee (U. Ottawa, Canada), F. Nitzsche (Carleton U., Canada), M. R. Labrosse (U. Ottawa)

Session 11d Thursday 1:50PM-4:00PM Room D

## TEXTILE 2 *Mechanical Properties*

Chairs: Hu Xiong, A.S. Ismail, Jiaping Wu, G. O. Shonaiki  
**An Efficient 3D Analytical Model For Woven Fabric Composites During The Simulation Of Curing Process** Hu Xiong, Cédric Lequesne, Frederic Pascon (Siemens Plm, Liege, Belgium), Thomas Germain, Johann Panrace (Safran Aero Boosters, Liege, Belgium)

**Void Content And Tensile Properties Of Woven Kenaf/Bamboo Mat Reinforced Epoxy Composite** Ahmad S. Ismail, Mohammad Jawaid, Mohamed T. H. Sultan (U. Putra Malaysia), Azman Hassan (U. Teknologi Malaysia)

**Fatigue Damage Growth In Plain Weave Composites Containing Artificial Flaws** Jiaping Wu, Ahmed Maslouhi (U. Sherbrooke, Quebec, Canada)

**Melt-Electrospun Fibers Obtained From Polypropylene / Poly (Ethylene-Co-Vinyl Alcohol) / Polypropylene Three-Layer Films** Koji Nakane, Yuto Mizutani, Takayuki Fujii (U. Fukui, Japan)

**Mechanical Characterizations Of Braided Composite Stents** Qingli Zheng (Taiyuan U.T., China), Pengfei Dong, Linxia Gu (U. Nebraska-Lincoln)

**Mechanical Properties Of Surface Treated Coir Fibre Reinforced Polyethylene** Gabriel O. Shonaiki, K.F.K. Oyedeko, H.O. Opaleye (Lagos State U., Nigeria)

**Prediction Of Cohesive Parameters In Z-Pin Reinforced Composite** Qiang Ye, Bihui Peng (NUAA, Nanjing, China)

**Nanoparticles for Textiles and Composites: Actual Status** Paul Kiekens (Ghent U., Belgium)

**An Two-Subcell Integration Scheme In The Strain Smoothing Technique For Plain-Woven Fabric Buckling With Clamped Edges Conditions** Trong-Quyen Nguyen (U. Minho, Portugal), Dinh-Tru Nguyen (Ho Chi Minh City Ind Trade Coll., Vietnam), Abel. J. P. Gomes (U. Beira Interior, Covilha, Portugal), Fernando. N. Ferreira (U. Minho)

**Analysis Of Surface Temperature And Heat Gain Depend On Applying Electrochromic Glazing Into Building Envelope** Myunghwan Oh, Sungho Tae (Hanyang U., Ansan, S. Korea) POSTER

Session 12a Thursday 4:00PM-6:10PM Room A

## **GENERAL 12** *Coating Technologies*

Chairs: Jie Cao, H. Tebassi, Baohui Zheng, M.M. Krayushkin

**Corrosion Protection of Petroleum Pipelines Using Anticorrosive Organic Layer** Mohammed shuhaib khalaf , Abdalla Abdal-hay, Hamouda M. Mousa (SouthValley U., Qena, Egypt), Mahmoud Agour (Minia U., Egypt), GT Abdel-Jaber (South Valley U., Qena, Egypt)

**Anti-Oxidation Property of CVD-SiC Coated PIP-CSiC Composites** Jie Cao (Beijing Aero Tech Inst,China)

**Performance Study Of Coated Composite Ceramic (Si<sub>3</sub>N<sub>4</sub>) During The Machining Of Inconel 718** Hamid Tebassi, Hamza BENSOUILAH, Mohamed Athmane Yaltese, Salim Belhadi (Guelma, Algeria),Tarek Mabrouki (U. Tunis El Manar, Tunisie)

**A Convenient Method To Prepare Energetic Boron Powder By Surface Modification And Its Properties** Baohui Zheng, Tao Liu, Shangbin Li, Guan Luo (China Acad Eng Phys, Mianyang)

**UV-Irradiation As A Method For Cyclization Of Organic Compounds And Creating Recording Media For Optical Memory Devices (Multilayer Optical Discs)** M.M. Krayushkin, K.A. Chudov, V.A. Migulin, V.G.Melekhina, V.S. Mityanov, V.N. Yarovenko (Zelinsky Inst, Moscow, Russia), T.M. Valova, V.A. Barachevsky (RAS, Moscow, Russia)

**Structural Behavior Of Modular System Connection Applying Bracket** Heonjun Ha, Keunyeong Oh, Byeonghyeon Jo, Daehee Jang, Kangmin Lee (Chungnam Nat. U., Daejeon, S. Korea)

**Zn-Doped Borosilicate Glass Powder As ZnO Substitute In Rubber Compounds** Hans-Joachim Radusch (Martin Luther U. Halle-Wittenberg, Germany), Melanie Keller, Andre Wutzler(Merseburg, Germany), Uwe Ferner, Hans-Jürgen Voß (TROVotech GmbH, Germany)

**Erosion Response Of Cenosphere/Epoxy Syntactic Foams** Kiran Shahapurkar,

Mrityunjay Doddamani, G.C. Mohan Kumar (Nat Inst. Tech, Karnataka, India)  
**Direct Activation Of Copper Electroplating On Conductive Composite Of Polythiophene Surface-Coated With Nickel Nanoparticles** Jiujuan Li, Guoyun Zhou, Yan Hong, Wei He, Yuanming Chen (UESTC, Chengdu, China)

Session 12c Thursday 4:00PM-6:10PM Room C

## **INFRA 7** *key issue: Durability and Cost*

Chairs: T. Rousakis, Qiang Wang, K.Kamal, F. Zhang

**Assessment Of Deficient Existing School Building And Strengthening With Composite Materials According To The Greek Retrofit Code** Theodoros Rousakis, Vasiliki Samprakou (D.U.Th., Xanthi, Greece)

**Study On The Mechanical Properties Of Self-Sensing BFRP Bars With A Cladding Layer At High Temperatures** Ting Li, Hong Zhu, Kai Zhang, Jiahui Shen (Southeast U., Nanjing, China)

**Enhancement Of Additional Ribs To Bond Performance Of NSM FRP Bars In Concrete** Qiang Wang, Hong Zhu, Ting Li, Xiuxiu Hu (Southeast U., Nanjing, China)

**Experimental Study On The Ductility Of High Volume Steel Fiber Concrete Block Under Monotonic Loading** Jingyang Lin, Zhikang Yu, Hong Zhu, Xiaogang Tang, Lingfeng Mao and Yifan Fang (Southeast U., Nanjing, China)

**Pragmatic Strength's Advantage On Use Of GFRP Composites Jacketed Concrete Columns** K. Kamal, Anubha Gupta (Garg Engrg. Coll., Ghaziabad, India)

**Capillarity And Water Permeability Properties Of Varying Infrastructure Composite Materials** Mehmet Serkan Kirgiz (Trakya U., Edirne, Turkey)

**Flexural Behavior Of A Novel Composite Sandwich Beam With Hybrid Pu Foam Core** Fubin Zhang (Jiangsu U., Zhenjiang, China), Weiqing Liu, Hai Fang (Nanjing Tech U., China), David Hui (U. New Orleans)

**Experimental Performance Of GFRP-Profiled Steel Sheeting Composite Sandwich Beams In Four-Point Bending** Fubin Zhang (Jiangsu U., Zhenjiang, China), Weiqing Liu, Hai Fang (Nanjing Tech U., China), David Hui (U. New Orleans)

Session 12b Thursday 4:00PM-6:10PM Room B

## **MATH 12** *Functionally Graded Composites and Structures*

Chairs: K.P. Kou, Xiao-Ting He, Shi-Rong Li, M.Giorcelli

**Eigenvalue Analysis Of The Linear Taped Functionally Graded Beams** K.P. Kou, Y. Yang, C.C. Lam, V.P. Iu (U. Macau, China)

**Three-Dimensional Analyses of Semi-Elliptical Surface Cracks in Functionally Graded Material Plates Subjected to Triangular Surface Load** K.P. Kou, Jinlong CAO, Y. Yang (U. Macau, China)

**Free Vibration Analysis Of The Exponential Functionally Graded Beams With Edged Cracks** K.P. Kou, Y. Yang (U. Macau, China)

**Interfacial Elastic Field of a 3D Dislocation Loop in Anisotropic Bimaterials of Finite Thickness Crystal Films** Y.P. Chen, Y.Y. Cai, Q. Ni (Huazhong UST, China)

**Bending Analyses Of Functionally Graded Beams And Plates With Different Moduli In Tension And Compression** Xiao-Ting He, Hong-Xia Jing, Jun-Yi Sun (Chongqing U. China)

**Thermoelastic Damping of Functionally Graded Material Micro Circular Plate Resonators** Shi-Rong Li, Shun Chen (Yangzhou U., Jiangsu, China)

**Analytical Solution For Bending Analysis Of Functionally Graded Beam** Abdelkader Safa (Ahmed Zabana U., Algeria), Lazreg Hadji, Faïçal Bourada, E.A.Adda Bedia (Algeria)

**Epoxy Resin with MWCNT Fillers For Experimental Validation Of An Electrical Conductivity Model** Mauro Giorcelli, Massimo Rovere, Matteo Fasano, Rajat Srivastava, Shahin Mohammadnejad, Eliodoro Chiavazzo, Pietro Asinari, Alberto Tagliaferro (Politec Torino, Italy) tues-thurs

**Dynamic Nonlinear Analysis Of Base Isolated Structures** Fabio deAngelis, D. Cancellara (U. Naples Federico II, Italy)

Session 12d Thursday 4:00PM-6:10PM Room D

## **BIO 4** *Bio Materials for Applications*

Chairs: Fanrong Meng, Zhifen Wang, T. Sasaya, Wen-Shuo Kuo

**Transformation Lignocellulosic Biomass into Advanced Bio-based Films based on Liquefaction Method** Fanrong Meng, Yucang Zhang, Zhifen Wang (Hainan U., China)

**Preparation and Physical Properties of Porous Starch/Natural Rubber Composites** Zhifen Wang, Yucang Zhang, Jie Wu (Hainan U., China)

**Polymer Nanocomposites Having Antibacterial Properties And Bioactivity** Teresa Flores, Francisca Rivera, Marcela Saavedra, Francesca Sepúlveda (U. Santiago Chile), Julian Bejarano, Humberto Palza (U. Chile), Paula A. ZAPATA (U. Santiago, Chile)

**Combinatorial Screening Of Mg-Based Magnetron-Sputtered Thin Films For Biocompatible Application** Jinyang Li (Southwest Jiaotong U., Chengdu, China), Yanhui Li (Chinese Acad Sci, Beijing), Jan Schroers (Yale U., New Haven, CT), Andre D.Taylor (New York U., Brooklyn)

**Using Biodegradable Nanocomposite For Brain Tumor Therapy** Fong-Yu Cheng (Chinese Culture U., Taipei)

**X-Ray Fluorescence Computed Tomography To Visualize 3-D Distribution Of Nanoparticles For Cancer Imaging** Tenta Sasaya (Yamagata U., Yonezawa, Japan), Seung-Jun Seo (Catholic U. of Daegu, S. Korea), Naoki Sunaguchi (Nagoya U., Japan), Tsutomu Zeniya (Hirosaki U., Japan), Kazuyuki Hyodo (Tsukuba, Japan), Jong-Ki Kim (Catholic U. Daegu), Tetsuya Yuasa (Yamagata U.)

**Immobilization Of Antimicrobial Peptides Onto Poly(Vinyl Alcohol)/Cellulose Acetate Films For Wound Treatment** Helena P. Felgueiras, M. Teresa P. Amorim (U. Minho, Portugal)

**Facile Synthesis of Cu@CuO Core Shell Nanostructure For Non-Enzymatic Glucose Sensing** T. Davakar, K. Venkateswara Rao (Jawaharlal Nehru T.U., Hyderabad, India), K. Bikshalu (Kakatiya U., India), Kishor Kumar Sadasivuni (Qatar Univ., Doha)

**Efficient Two-Photon Luminescence for Bioimaging Using Polymer Conjugations of Graphene Quantum Dots based Materials** Wen-Shuo Kuo (Nat. Cheng Kung Univ.Hospital, Tainan) poster

Session 13a Friday 8:30AM-10:40AM Room A

### **GENERAL 13** *New Trends in Production Technology*

Chairs: J.L. Gair, A.A. Khan, T.Malwela, F.David

**Poly(Urethane-Urea) Hard Segment Ordering in High Density CNT Forests** Jeffrey L. **Gair** Jr. (RDRL-VTM, APG, Maryland), Dale L. Lidston (MIT, Cambridge, MA), Robert H. Lambeth (RDRL-WMM), Daniel P. Cole (RDRL-VTM), Alex J. Hsieh (RDRL-WMM), Hugh A. Bruck (U. Maryland), Asha J. Hall, Mark L. Bundy (RDRL-VTM), Brian L. Wardle (MIT, Cambridge, MA)

**Shape Memory Polymers From Biobased Polybenzoxazine/Epoxy Polymer Alloys** Sarawut **Rimduisit**, Phakakrong Hombunma (Chulalongkorn U., Bangkok, Thailand)

**Impact Of Organically Modified Silicates On Thermal Stability, Mechanical And Rheological Properties Of Polypropylene/Polystyrene Blends** Thomas **Malwela**, Jayita Bandyopadhyay, Vincent Ojijo (DST/CSIR, Pretoria, S. Africa), Suprakas Sinha Ray (U. Johannesburg, S. Africa)

**Structural And Crystallographic Properties Of Selenized Cu(In,Ga)Se<sub>2</sub> Thin Films** Chan Kim (Kyungpook Nat. U., Daegu, S. Korea), Sungwook Hong (Daegu U., Gyeongsan, S. Korea)

**New Composites Based On Waste From Agricultural Film Recycling Line** **Jerzy** Korol, Joanna Lenza (Central Mining Inst., Katowice, Poland)

**Experimental Study On Developed Electrochemical Micro Machining Of Hybrid MMC** **Charanjit** Singh (SUSCET, India), Vinod Kumar (Thapar Inst., India), Alakesh Manna (PEC Tech, Chandigarh, India)

**Low Density Ceramic Mixtures By Inserting Glass Microspheres** **Francesco David** (U. Rome tor Vergata, Italy), Gianluca Rubino (U. Tuscia, Viterbo, Italy), Vincenzo Tagliaferri, Federica Trovalusci (U. Rome tor Vergata, Italy)

Session 13b Friday 8:30AM-10:40AM Room B

### **MATH 13** *Fiber Reinforced Composites*

Chairs: Minh Kwon, M. Konate, F. David, Yogesh Mhetre

**FIMEC Test To Evaluate The Water Uptake Of Coated And Uncoated CFRP** Francesco **David**, Patrizia **Moretti**, Federica Trovalusci, Vincenzo Tagliaferri (U. Rome Tor Vergata, Italy) invited  
**Effective Contact Length Of GFRP Infill Panel On Steel Frame Structure** Minh **Kwon**, Jinsup KIM (Gyeongsang Nat. U., Jinju, S. Korea)

**Performance Evaluation Of RC Frame With GFRP Jacket Device** **Minho** Kwon, Jinsup Kim (Gyeongsang Nat. U., Jinju, S. Korea)

**CFRP Retrofitting For Steel I-Section Torsional Member** Mamadou **Konate** (Norfolk State U., Virginia), Zia Razzaq (Old Dominion U., Norfolk, VA)

**Mechanical Performance Evaluation Of Woven And Unidirectional GFRP Composite Through Numerical Simulation** Yogesh **Mhetre**, Bankim Chandra Ray, Snehanshu Pal (Nat. Inst. Tech, Rourkela, India)  
**A Fibre Model For Non-Uniformly Distributed Randomly Oriented Short Fibres** Charles E. **Lord** (U. Sheffield, UK)

**The Application Of Steel Fibres For The Enhancement Of Carbon Fibre Composite Joints Bonded By Structural Adhesives** **Dong QUAN** (Univ.Coll. Dublin, Ireland), Josu Labarga Urdaniz (U. Politec Madrid, Spain),

**Finite Element Analysis Of a FRP Strengthened Short Steel Tube Under Axial Compression** Abderrahim **Djerrad**, Feng Fan, Xu-dong Zhi, Qi-jian Wu (Harbin Inst.Tech., China)

Session 13c Friday 8:30AM-10:40AM Room C

### **INFRA 8** *key issue: durability*

Chairs: A.Bossio, M. Rinaldi, A.H.Ali, A. deDiego

**HPC Retrofit Of Corroded Reinforced Concrete Structures**

Antonio **Bossio** (Univ. Federico II, Naples, Italy), Francesco FABBROCINO (Telematic Univ "pegaso", Naples, Italy), Gian Piero Lignola, Andrea Prota (U. Federico II, Naples)

**Additive Layer Manufacturing Of 3D Printed Poly Ether Ether Ketone (PEEK) Composite** M. **Rinaldi** (U. Rome Tor Vergata, Italy), T. Ghidini (ESA, Noordwijk, Netherlands), F. Cecchini (U. Rome Tor Vergata, Italy), Francesco Fabbrocino (Pegaso U., Italy), F. Nanni (U. Rome, Italy)

**Combined Effect Of Sustained Load, Corrosive Solutions, And Elevated Temperature On The Durability And Long-Term Performance Of CFCC Tendons** Ahmed H. Ali (Ecole Tech Superieure, Montreal, Canada), Hamdy, M. Mohamed, Brahim Benmokrane (U. Sherbrooke, Canada), Adel Elsafty (UNF, FL)

**Experimental Investigation On The Effects Of Alkaline Solution, Temperature, And Resin Type On Tensile Strength Of GFRP Bars** Ahmed H. Ali (UEcole Tech Sup, Montreal, Canada), Hamdy, M. Mohamed, Brahim Benmokrane (U. Sherbrooke, Canada), Adel Elsafty (UNF, FL)

**Experimental Vibration Analysis Of Damaged RC Beams And Strengthened With FRP** Roberto **Capozucca**, Erica Magagnini, Giuseppe Pace, M. Vittoria Vecchiatti (U. Politec Marche, DICEA, Ancona, Italy)

**Experimental Study On Conductive And Mechanical Properties Of Carbon Nanotube-Modified Epoxy Resins** **Bo Wen**, Chun-Feng Wan (Southeast U., Nanjing, China), Jian-Guo Dai, (Hong Kong Poly U., China), You-liang Ding, Yu-Zhong Liu (Southeast U.), Yong-Sheng Song (Jinling Inst.Tech., Nanjing, China)

**Monotonic Tensile Behavior Of FRP Splice Sleeve For Precast Reinforced Concrete Components** **J.F. Jia**, Y. Guo, S.L. Letapo, Yulei BAI, X.L. Du (Beijing U.T., China)

**Experimental Investigation On Mechanical Performance Of Anchorage Systems For Externally Bonded FRP Composite In Flexural Strengthening Of RC Beams** Zena R. **Aljazaeri** (Nahrian U., Baghdad, Iraq), Michael Janke, John J. Myers (Missouri U. Sci.Tech., Rolla)

**Seismic Response Of A Bridge Under Recent Earthquake Of 2016 Gyeongju Korea** **Do Hyung** Lee (Paichai U., Daejeon, S. Korea), Byeong Hwa Kim (Kyungnam U., Gyeongnam, S. Korea)

Session 14a Friday 10:40AM-12:50PM Room A

## GENERAL 14 *Characterization of New Materials*

Chairs: Jong-Ho Oh, RanranYe, Ming-Yao Li, Luling An

**Enhancement Of Mechanical And Thermal Characteristics Of Polyurethane-Based Composite With Silica Aerogel** Jae-Hyeok Ahn, Jeong-Dae Kim, Jeong-Hyeon Kim, Seul-Kee Kim, Kang Hyun Park, Sung Kyun Park, Jae-Myung Lee (Pusan Nat. U., Busan, S. Korea)  
**Mechanical And Thermal Performance Of Polyurethane Foam With Kevlar Pulp Under Cryogenic Conditions**

Jong-Ho Oh, Jin-Ho Bae, Jeong-Hyeon Kim, Seul-Kee Kim and Jae-Myung LEE (Pusan Nat. U., Busan, S. Korea)

**Graphene Capsule-Based Hybrid Composites With High Performance For Microwave Absorption** Wei Tian, Li Zhang, Xin Wang, Longjiang Deng, Xian Jian (UESTC, Chengdu, China)

**A High Performance Electromagnetic Wave-Transmitting And Thermal-Insulation Aerogel Composite** Ranran Ye, Yuchen Pei, Yingmin Zhao, Lijuan HUANG, Wenjing Li, Yuanyuan Liu, Bin Liu (ICCAS, Beijing, China)

**Hydrophobicity And Thermal Stability Properties Offluorine-Modified Microporous Silica Aerogels** Hongyan Huang, Yuchen Pei, Yingmin Zhao, Fan Zhang, Wenjing Li, Bin Liu (Aero Res Inst, Beijing, China)

**MWCNTs/NdFeB/Epoxy Layered Composites Perform Excellent Electromagnetic Interference Shielding** Ming-Yao Li, Nyan-Hwa TAI (Nat. Tsing-Hua U., Hsinchu, Taiwan)

**Effect Of Liquid Shim On Strain And Stress Of Composite Assembly Structure** Luling An, Xuande Yue (NUAA, Nanjing, China)

**Influence Of Gap-Filling On The Mechanical Properties Of Composite Single-Lap Bolted Joints** Yue, Luling An (NUAA, Nanjing, China)

**Analysis of Load Distribution in Multi-bolt Composite Joints with Liquid Shim** Guo-qiang Gao, Lu-ling An, Xuan-de Yue (NUAA, Nanjing, China)

Session 14b Friday 10:40AM-12:50PM Room B

## MATH 14 *Advanced Sensing Technology in Composites*

Chairs: Zouli He, A.O. Abatan, A. Soualmia, Ding Wang

**Surface And Protein Adsorption Properties Of PMMA/PCL Composite Films Modified By Plasma** Yuan-Ting Tsao, Shih-Hang CHANG (Nat. I-Lan U., Taiwan)

**Highly Stretchable Composite Fibers For Ultrasensitive, Wearable Strain Sensors** Zuoli He, Joon-Hyung BYUN, Byeongjin Park, Sang Bok Lee (Inst. Mat Sci, Changwon, S. Korea)

**Attenuation Observations Of ETDR Sensors For Infrastructure Damage Assessment** Ayodele O. Abatan (Miami U., Oxford, Ohio)

**Measurement Techniques By Time Domain Reflectometry (TDR)** Achour Soualmia, M. Abdelguerfi (USTHB, Alger, Algeria)

**Shaping Droplet by Initiating Localized Pattern Bifurcation upon Engineered Elastic Surface** Ding Wang, Fei Chen, Glen McHale, Gary Wells, David Wood (Northumbria U., Newcastle upon Tyne, UK), Michael Cooke (Durham U., UK), Haibao Lu (Harbin I.T., China), Yifan Li, Ben B. XU (Northumbria U.)

**A New Sensor Design for Real Time Structural Health Monitoring** Yumna Qureshi, Mostapha Tarfaoui (ENSTA Bretagne, Brest, France), Khalil K. Lafdi, Khalid Lafdi (U. Dayton, Ohio)

**Noise Attenuation In Sandwich Panels By Optimization Of Piezoelectric Sensors And Actuators** J.F.A. Madeira (IDMEC, U. Lisboa, Portugal), Aurelio L. Araujo (Inst. Sup. Engen. Lisboa, Portugal)

**Monitoring Delamination Growth Due To Mixed Mode Crack Propagation Using An Embedded Fibre Bragg Grating Sensor And Thermo Elastic Stress Analysis (TSA)** Ayad Kakei, Mainul Islam, Jayantha Epparachechi (U. Southern Queensland, Toowoomba, Australia) poster

**Mesoscale Metal Nanofibers-Nanowires Hybrid As Flexible Transparent Conducting Electrodes For High Performance Flexible Optoelectronics Device Applications** Soram Bobby Singh, Tolendra Kshetri, Thangjam Ibomcha Singh, Nam Hoon Kim, Joong Hee Lee (Chonbuk Nat. U., S. Korea) POSTER

**Research On the Fabrication Of CNT-Grafted Carbon Fiber Reinforced Magnesium Composites** Jiming ZHOU, Haiming Meng, Yu Duan, Lehua Qi (Northwestern Polytech U., Xian, China) poster

Session 14c Friday 10:40AM-12:50PM Room C

## NANO 5 *processing and engineering applications*

Chairs: Andre Schirmeisen, Leila Torkian, Qiong Wu, Van-Phuc Dinh

**Janus Green B Photo-Degradation by Applying Synthesized Ag/TiO<sub>2</sub> and Ag/P-25 Nano Composites** Leila Torkian, Mohammad Amin Safari (Islamic Azad U., Tehran, Iran)

**High Performance Silicone Rubber Composites Filled With Silica And Carbon Nanotubes Functionalized By Ionic Liquids** Zheng Sun, Chaonan Yang (BUCT, Beijing, China), Tianshu Zhai (U. Illinois Urbana-Champaign), Bin Dong (Shandong Inst. Non-metallic Mat, Jinan, China), Youping WU (BUCT, Beijing)

**The Mechanical Properties Experiment and Simulation Of Nano-Graphene/PVDF Composite Films** Qiong Wu, Dongjian Xie, Yidu Zhang (Beihang, Beijing, China)

**Study for Effect of Shot Peening on Surface Residual Stress Distribution of SiCp/2024Al** Qiong Wu, Dongjian Xie, Yidu Zhang (Beihang, Beijing, China)

**Comparison of the Removal of Copper (II) from Aqueous Solution by alpha-and gamma-MnO<sub>2</sub> Nanostructures** Van-Phuc DINH (Dong Nai U., Bien Hoa city, Vietnam), Ngoc-Chung LE (Dalat U., Vietnam), Ngoc-Tuan NGUYEN<sup>3</sup>, Van-Dong NGUYEN (VNUHCM Univ of Sci, Hochiminh city)

**Analysis Of Dynamic Viscosity Via Experiment And Empirical Correlation Through Response Surface Methodology (Rsm) For Cellulose Nanocrystal (CNC) Dispersed In Ethylene Glycol- Water Mixture** K. Ramachandran, K. Kadirgama, D. Ramasamy, M. Samykano (U. Malaysia Pahang)

**Elucidation And Model Development Of Thermal Conductivity Analysis For Cellulose Nanocrystal (CNC) Based Nanofluid** K. Kadirgama, K. Ramachandran, D. Ramasamy, M. Samykano (U. Malaysia Pahang)

**Synthesis And Study Of Optical Properties Of Vanadium Doped ZnO Films Prepared By Spray Pyrolysis Technique** Hajar Ftouhi, Z. El Jouad, M. Jbilou, M. Diani, M. Addou (U. Abdelmalek Essaadi, Tanger, Morocco)

**Enhanced Physiochemical Properties Of RGO And Quaternary Amine Poly(Arylene Ether Sulfone) Block Copolymer Composite For Anion Exchange Membrane** Ji Young Chu, Dong Jin Yoo (Chonbuk Nat. U., S. Korea) POSTER

**Enhanced Electroproperties Of F-SiO<sub>2</sub>/Sulfonated Poly (Arylene Ether Ketone) Block Copolymer Composite Membrane For The Applications Of PEMFC Operating With Low Relative Humidity** Kyu Ha Lee, Dong Jin Yoo (Chonbuk Nat. U., S. Korea) POSTER  
**Facile Synthesis of PtCu/rGO Nanocomposites And Their Exceptional Electro-catalytic Activity Toward Ethylene Glycol Oxidation** K. Ramachandran and Dong Jin Yoo (Chonbuk Nat. U., S. Korea) POSTER

**Improvement Of Mechanical Properties Of Carbon Composite Materials By Fiber Surface Modification Of Polydodamine** Han Joo Kim, Jun Hee Song (Chonbuk Nat. U., S. Korea) POSTER

**Luminescence of MEH-PPV Conjugating Polymer and PbS Quantum Dots Nanocomposite Exposed to  $\gamma$  Radiation** Nikolai M. Romanov (St. Petersburg Polytech U., Russia, and Lappeenranta U.T., Finland), S.F. Musikhin (St. Petersburg Polytech. U.) poster  
**Feasibility Of Densification Of A 41 Micron 439L Steel Powder Blended With A 14.5 Micron SiC Powder Via The Powder Metallurgy Process** Sang Woo Lee (Kyung Hee U., S. Korea), Hyunho Shin (Gangneung-Wonju Nat. U., S. Korea), Kyong Yop Rhee (Kyung Hee U., S. Korea) POSTER

**Effect Of Seawater Absorption On The Fracture Behavior Of The Si- MMT Reinforced Basalt/Epoxy Composite** Min kyu Kim, Sang Hoon Kim, Kyong Yop Rhee (Kyung Hee U., S. Korea) POSTER

**Synthesis And Characterization Of Echo-Friendly Carboxymethyl Cellulose Based Carbon Foam Using Electron Beam Irradiation** Hong Gun Kim, Lee Ku Kwac, Yong-Sun Kim, (Jeonju U., S. Korea), Sang Woo Lee (Kyung Hee U., S. Korea), Hye Kyung Shin (Jeonju U.), Kyung Yop Rhee (Kyung Hee U., S. Korea) POSTER

**Densification And Dielectric Properties Of Al<sub>2</sub>O<sub>3</sub>-Added ZrO<sub>2</sub> Composites** Hyo-Sung Park, Hyunho Shin (Gangneung-Wonju Nat. U., S. Korea), Daesung Kim, Hyun Suk Cho, Kyung Yop Rhee (Kyung Hee U., Yongin, S. Korea) POSTER

**Highly Efficient Iron@Tungsten Core-Shell Nanoparticles Encapsulated Graphene Hybrid For Oxygen Reduction Reaction** Kakali Maiti, Prabhakaran Sampath, Jayaraman Balamurugan, Young Sun Lee, Nam Hoon Kim, Joong Hee Lee (Chonbuk Nat. U., S. Korea) POSTER

**Cost Effective, High Efficient And Stable Bi-Functional Fe Doped Ni And Co Ldh For Oer And Her** Gaddam Rajeshkhanna, Moon Sang Yoon, Sakthivel Ramasamy, Nam Hoon Kim, Joong Hee Lee (Chonbuk Nat. U., S. Korea) POSTER

**Enhanced Physical Properties Of Hydroxylated Boron Nitride/ Polyurethane Nanocomposites** Xuyang Li, Prabhakaran Sampath, Parthasarathi Bandyopadhyay, Moon Sang Yoon, Jeong Hyeon Woo, Nam Hoon Kim (Chonbuk Nat. U., S. Korea) POSTER  
**Fabrication Of Manganese Nickel Sulfide Nanosheet Arrays As An Advanced Cathode For High-Performance Asymmetric Supercapacitors** Chao Li, Jayaraman Balamurugan, Jun Hee Song, Nam Hoon Kim, Joong Hee Lee (Chonbuk Nat. U., S. Korea) POSTER

Session 15a Friday 1:50PM-4:00PM Room A

## GENERAL 15 *Protection Technologies*

Chairs: Chin-Hsing Chen, Qian Wu, T.A.Tsotetsi, Qin Lu  
**Microstructure And Mechanical Properties At Elevated Temperatures Of Crtisin Composite Coatings** Yang **Tung-Sheng**, Deng Ji-Hong, Chang Sheng-Yi (Nat. Formosa U., Taiwan) Tues  
**Pultruded Glass Fiber Reinforced Brominated-Epoxy Composites: Mechanical And Flame Retardant Properties** **Chin-Hsing** Chen (Chinese Culture U., Taipei) Tues-Wed  
**Flame-Retardant Polyurethane Foam Composites Via Coating Silicone Resin And Forming Silica Layer Under Combustion** **Qian Wu**, Qian Zhang, Yong-Bing Pei, Long-Cheng Tang, Lian-Bin Wu (Hangzhou Normal U., China)  
**Flame Retardant Performance Of Polyurethane Composites By Microencapsulation Technology** Ming-Yuan Shen (Southern Taiwan U.Sci.Tech., Tainan), Chin- Lung CHIANG (Hung-Kuang U., Taichung)  
**Preparation And Characterisation Of Flame Retarded Natural Fibre Reinforced Biopolymer Blends** Tibello Abel **Tsotetsi**, Julia Puseletso Mofokeng (U. free State-Qwaqwa, S. Africa)  
**Recent Advances On Lightweight Ceramic Integrated Thermal Protection Structure Reusable Launch Vehicles** **Qin Lu**, Long-Fei Hu, Jia-Tong Shi, Xiao-Guang Luo, Ji-Jun Yu, Bang-Cheng Ai (China Acad Aero Aerodyn, Beijing)  
**Boron Nitride And Exfoliated Boron Nitride/MWCNT Hybrid Composite For High Thermal Conductive Composite Material** **Kiho Kim**, Hyunwoo Oh, Junggeun Han, Jooheon Kim (Chung-Ang U., Seoul, S. Korea)

Session 15c Friday 1:50PM-4:00PM Room C

## INFRA 9 *key issue: Durability and Cost*

Chairs: Zhuqing Zhang, V. Gribniak, Hoan D.Nguyen, Eunsoo Choi  
**3D Finite Element Analyses Of Axially Loaded Columns Externally Strengthened With Transverse Composite Ropes** Theodora **Fanaradelli**, Theodoros Rousakis, Dimitrios Pavlou (D.U.Th., Xanthi, Greece)  
**Static And Cyclic Performances Of FRP Beam-To-Column Connections** **Zhuqing** Zhang, Chengyu Qiu, Yu BAI (Monash U., Australia)  
**Correlation Between Tensile And Shear Response Of Ultra-High Performance Fiber-Reinforced Concrete At High Strain Rates** Tri Thuong **Ngo**, Dong Joo KIM (Sejong U., Seoul, S. Korea)  
**Utilization Of Unused Solid Waste Materials as a Cable Backfill Material** EL-Sayed M. A. **Rassoul** (Mansoura U., Egypt), Hassan A. Darwish (Talkha power station, Egypt), Roshdy A. AbdelRassoul (Arab Acad Sci Tech, Alexandria, Egypt)  
**Model Of Concrete Confined by GFRP Wire Jackets** **Hoan D.** Nguyen, Seungwook Chae, Yunkyu Ha, Eunsoo Choi (Hongik U., Seoul, S. Korea) Tues-Wed  
**Non-Iterative Design Of Transition-Zone Reinforced Concrete Beam Sections** Carlos E. **Orozco** (U. North Carolina-Charlotte) Friday  
**Utilization of Clayey Sand in Base and Subbase Courses of Pavements** **Gibigaye** Mohamed, Yabi Crespín Prudence, Sekloka Raoul Gildas (U. Abomey-Calavi, Benin)  
**Effect Of Nano-Particles On Durability Of PVA Fiber Reinforced Cementitious Composite** **Peng Zhang**, Qingfu Li (Zhengzhou U., China), Kejin Wang (Iowa State U., Ames), Xiaobing Dai (Chongqing U., China)

Session 15b Friday 1:50PM-4:00PM Room B

## MATH 15 *Numerical Simulation of Metallic/Alloy Composites*

Chairs: T.Santos, Gaoqiang Chen, GangLiu, S.H. Wu  
**Influence Of Silane Coupling Agent On Non-Newtonian Fluids For Personal Protection** Thiago **Santos**, Carolyn Santos, Jose H.O. do Nascimento, Marcos Aquino, Ivan Medeiros (Fed Univ Rio Grande Norte, Brazil)  
**Damping Characteristics Of Carbon Nanotubes Reinforced Lead-Free Sn-Ag-Cu Composite Solders** **Shyi-Kaan** Wu (Nat. Taiwan U., Taipei), Chin KUO (Nat. I-Lan U.), Chieh Lin (Nat. Taiwan U.), Shih-Hang Chang (Nat. I-Lan U.)  
**Internal Friction Of Cu-Al-Ni Shape Memory Alloys/Carbon Nanotubes Composite MATERIALS** Shyi-Kaan **Wu** (Nat. Taiwan U., Taipei), Yuan-Chien **HSIAO** (Nat. I-Lan U., I-Lan), Chieh Lin (Nat. Taiwan U.), Shih-Hang Chang (Nat. I-Lan U.)  
**Role Of Short Fiber In Carbon Fiber Reinforced Aluminum Matrix Composites Fabricated By In Situ Friction Stir Processing** **Gaoqiang** Chen, Qu Liu, Xiong Cao, Chengle Yang (Tsinghua U., Beijing, China), Chunjie Cao, Hongliang Li (Carl Zeiss Ltd, Beijing, China), Shuai Zhang, Qingyu Shi (Tsinghua U., China)1:0  
**Size-Dependent Deformation Mechanisms And Strain Rate Sensitivity Of Nanolaminated Crystalline Cu/Amorphous CuZr Films** **Gang Liu**, Y.Q. Wang, J.Y. Zhang, J. Sun (Xian Jiaotong U., China)  
**Buckling Of Anisotropic Laminated Thin-Walled Rectangular Cantilever Beams Subjected To Free End Loading** Hayder A. **Rasheed**, Habib Ahmadi (Kansas State U., Manhattan)Friday  
**Grain Size-Dependent Sc Microalloying Effect On The Strength-Pitting Corrosion Relationship Of Al-Cu Alloys** **S.H. Wu**, K. Wu (Xian Jiaotong U., China), R.H. Wang (Xian U.T., China), J.Y. Zhang, G. Liu, J. Sun (Xian Jiaotong U.)  
**Structure and Property of the Modified and Predispersed Ultra-fine Short Fiber Masterbatch Filled Rubber Based Materials** WeidongWu, Liqun Zhang (BUCT, Beijing, China)  
**An Efficient Multiscale Finite Element Method for Nonlinear Bending Analysis of Composite Grid Stiffened Structures** **Jie Cong**, Mingfa Ren (Dalian U.T., China)

**Nanostructured Composition Materials For The Needs Of Heat Power Industry** A.B. **Seisenova**, S. Kh. Akhazarov, O. Yu Golovchenko, O.S. Kapizov, O.S. Bairakova (Kazakh Nat. U., Kazakhstan), Juan Maria Gonzalez-Leal (U. Cadiz, Spain) POSTER  
**An Insight Into Thermal Properties Of Hollow Glass Microsphere And Bamboo Fiber Based Hybrid Polypropylene Composites** **Nityanshu** Kumar, Vinay Khandelwal, Shubham Mireja, Sushanta Kumar Sethi, Gaurav MANIK, Rupam Gogoi, Byravan Arun (Indian Inst.Tech., Roorkee) poster  
**Thermal Study Of Photo-Polymerization Reaction In Polyacrylate/Liquid Crystal Blends** Salima **Bouadjela**, Z. Hadjou Belaid, D. Berouguia, F.Z. Abdoune (U. Tlemcen, Algeria) POSTER  
**Sensing Of Lung Cancer Using Surface Potential** **Sungsoo** Na (Korea U., Seoul, S. Korea) poster  
**Thapsigargin Nanoparticles Reduce The Risk Of Chronic Kidney Disease By Stimulating Endoplasmic Reticulum Stress And Inducing Autophagy** **Yuh-Feng** Lin, Hui-Wen CHIU (Taipei Med U., Taipei, Taiwan) poster  
**Hazard Estimation Of Silver Nanoparticles In Different Cellular Models Using Methods Of Knowledge Discovery From Data** **Yi-Kai** Lou, Ying-Jan Wang, Yu-Hsuan LEE (Nat. Cheng Kung U., Tainan, Taiwan) poster

**In-Situ Synthesis Of Aluminum/Nano-Quasicrystalline Al-Fe-Cr Composite By Using Selective Laser Melting** Nan **Kang** (Northwestern Polytec U., Xian, China), M. El Mansori (MSMP, France), X. Lin (Northwestern Poly U.), F. Guittoneau (MSMP, France), H.L. Liao (U. Bourgogne Franche, France), W.D Huang (Northwestern Poly U.), C. Coddet (U. Bourgogne Franche) poster

Early morning 8:30AM-10:40AM  
Late morning 10:40AM-12:50PM  
Lunch on your own  
Early afternoon 1:50PM-4:00PM  
Late afternoon 4:00PM-6:10PM

Each session is 130 minutes

130min /9 papers = 11.4 minutes +3 min = 14.4 minutes  
130min /8 papers = 13.2 minutes+ 3 min = 16.2 minutes  
130min /7 papers = 15.5 minutes + 3 min = 18.5 minutes

3 min is for

- one minute for walking to podium, and chair introduction
- two minutes for discussion after the oral presentation

<p>Session 16a Friday 4:00PM-6:10PM Room A <b>GENERAL 16</b> <i>Material Properties at Elevated Temperatures</i> Chairs: Pengfei Zhang, F.Dinzart, I.N. Erdakov, Nadia C.L. Chow</p> <p><b>Recyclable Thermosets with Self-healing Capability based on Thermoplastic Addition Phase</b> Moulero <b>Akobi</b>, Pengfei ZHANG (U. Louisiana at Lafayette)</p> <p><b>Optimization Of Thermal Dissipation In Particulate Composite: Tailoring Of Electronic Equipment</b> Florence <b>Dinzart</b>, A. Jeancolas, N. Bonfoh, H. Sabar, M. Mihaluta (U. Lorraine, LEM3, Metz, France)</p> <p><b>Modeling and Analysis of Stress and Deformation Fields in Multilayer Metal Composite Structures</b> V.A. <b>Pashnyov</b>, D.Yu. Pimenov, V.A. Ivanov (South Urul State U., Chelyabinsk, Russia), M. Mia (Dhaka, Bangladesh), G. Krolczyk (Opole U.T., Poland), S. Wojciechowski (Poznan U.T., Poland), A.P. Markopoulos (Nat. Tech U. Athens, Greece)</p> <p><b>Studies Of High-Filled Composite Cold-Box-Amin Core Mechanical Properties In Conditions Similar To Heating In Melt</b> Ivan N. <b>Erdakov</b>, Vassily A. Ivanov, Vladislav A. Pashnyov, Pavel V. Fekolin (South Urals State U., Chelyabinsk, Russia), Vadim Davidov, Ralf Walter (Switzerland), Danil Yu.PIMENOV (South Urals State U.)</p> <p><b>A Study On Fire Behaviour Of Two Selected Fibre Reinforced Polymers Under High Thermal Radiative Heat Fluxes</b> <b>Nadia C.L. Chow</b>, S.S. Han (City U. Hong Kong., China)</p> <p><b>Comparison between the Tensile Properties of Glass and Flax Fibre Epoxy Composites at Elevated Temperatures</b> Mohammad Rajaei, Nam Kyeun Kim, Debes Bhattacharyya (U. Auckland, New Zealand)</p> <p><b>Thermomechanical Studies Of Surface Mounted Microelectronics By Finite Element Analysis</b> <b>Khair Shiang</b> Tan, Sim Jui Oon, Li Yuan Teng (Multimedia U., Selangor, Malaysia), Chun Sean Lau, Yoong Tat Chin (Penang, Malaysia), Teck Yong Tou, Seong Shan Yap (Multimedia U.)</p> <p><b>Modeling Of Thermo-Physical Properties Of Wood Under Elevated And High Temperatures</b> <b>Lingfeng</b> Zhang (Southeast U., Nanjing, China), Lu Wang, Weiqing Liu (Nanjing Tech.U., China)</p> <p><b>Study Of Laser Cutting On 50mm-Thick Cementitious Composites</b> <b>Dongkyoung</b> Lee, Youngjin Seo (Kongju Nat. U., Cheonan, S.Korea), Sukhoon Pyo (Korea Railroad Res.Inst., Uiwang, S.Korea)</p>	<p><b>Session 16b Friday 4:00PM-6:10PM Room B</b> <b>MATH 16</b> <i>Advanced Numerical Modeling of Composites</i> Chairs: J.Sladek, Xiao-Wen zhang, A.M. Diaz-Diaz, Eva Kormanikova</p> <p><b>Computational Modeling Of Chemoelastic Solids</b> Peter L. Bishay, N. Fabry (Calif. State U., Northridge), <b>J. Sladek</b>, V. Sladek (Slovak Acad Sci, Bratislava)</p> <p><b>A Multi-Scale Finite Element Analysis Strategy For Matrix Cracking Prediction At Cryogenic Cure Kinetics From Multi Curve Fitting</b> Ana-Maria <b>Diaz-Diaz</b>, Jorge Lopez-Beceiro (Univ. a Coruna, Spain), Carlos Gracia-Fernandez (Madrid, Spain), Ramon ARTIAGA (Univ. a Coruna)</p> <p><b>Three-Phase Elliptical Inclusion Problem In Magnetoelastic Composites</b> <b>Zengtao</b> Chen, Keqiang Hu (U. Alberta, Edmonton)</p> <p><b>Finite Element Homogenization Of Composite Material</b> Eva <b>Kormanikova</b>, Roman Vodicka, Filip Ksinan (TU Kosice, Slovak Rep.)</p> <p><b>Geometrically Non-Linear Free and forced Vibration of Fully Clamped FGM Skew Plates using a Homogenization Technique</b> Hanane Moulay <b>Abdelali</b>, Rhali Benamar (Univ in Rabat, Morocco)</p> <p><b>The Theoretical And Experimental Study On A Bistabledual-Mode Vibration Energy Harvester</b> <b>Minghui</b> Yao, Pengfei LIU (Beijing U.T., China)</p> <p><b>Quantitative Relationships Between Intermolecular Interaction And Damping Parameters Of Irganox-1035/Nbr Hybrids: ACombination Of Experiments, Molecular Simulations</b> <b>Fei Cai</b>, Jing Zhu, Kaiqiang Luo, Ling Lu, Qian Zhang, Sizhu WU (BUCT, Beijing, China)</p> <p><b>Experimental And Analytical Investigation Of Curing Process Induced Material Property Changes And Distortion Of Composite Laminates</b> <b>Haixiao</b> Hu, Dongfeng Cao, Qingfeng Duan (Wuhan U.T., China), Martyn Pavier (U. Bristol, UK), Shuxin Li (Wuhan U.T. and U. Bristol) Friday</p> <p><b>Chemical Method Of Obtaining Of B<sub>4</sub>C-TiB<sub>2</sub> Ceramic Composites</b> Archil <b>Mikeladze</b>, Otar Tsagareishvili, Levan Chkhartishvili (Georgian T.U., Tbilisi), Roïn Chedia (Ivane J. Tbilisi State Univ., Georgia)</p>	<p><b>Session 16c Friday 4:00PM-6:10PM Room C</b> <b>BIO 5</b> <i>Bio Composites and Applications</i> Chairs: V. Miskovic, Chunhong Mu, Linghan Meng, A.S. Salem</p> <p><b>Elaboration And Experimental Characterization Of Photocurable Porous Bio-Sourced Epoxy Resins</b> <b>Quoc-Bao</b> Nguyen, A. Rios De Anda, D.L. Versace (ICMPE-UPEC, Thiais, France), Vu-Hieu Nguyen, S. Naili(CNRS UPE, Creteil, France), E. Renard (ICMPE-UPEC, Thiais)</p> <p><b>Electrochemical Synthesis And Characterization Of Biomedical Silver Doped Poly(Vinyl Alcohol)/Graphene Composites</b> Vesna <b>Miskovic</b>-Stankovic (U. Belgrade, Serbia, Kyung Hee U., S.Korea), Katarina Nešović (U. Belgrade), Kyong Yop Rhee (Kyung Hee U., S. Korea)</p> <p><b>Flexible Normal-Tangential Force Sensor With Opposite Resistance Responding For Highly Sensitive Artificial Skin</b> <b>Chunhong</b> Mu, Yuanqiang Song, Wutong Huang, Ao Ran, Rujie Sun, Weihua Xie, Huaiwu Zhang (UESTC, Chengdu, China)</p> <p><b>Implantable Chemothermal Brachytherapy Seeds; a Synergistic Approach to Brachytherapy using Polymeric Dual Drug Delivery and Hyperthermia for Malignant Solid Tumor Ablation</b> Ghizlane Choukrani, Ludwig Erik Aguilar, Chan Hee Park, Cheol Sang Kim (Chonbuk Nat. U., S. Korea)</p> <p><b>Preparation, Microstructure And Performance Of PLA-PBSA-Starch Hybrid Composites</b> <b>Linghan</b> Meng, Qingfei Duan, Long YU, Saud Khalid, Hongsheng Liu (SCUT, Guangzhou, China) INVITED</p> <p><b>New Analytical Model To Predict The Bearing Capacity Of Bio-Based Beams Strengthened With Frp Composites</b> Abdelmajid SI <b>Salem</b> (Univ. A. Mira Bejaia, Algeria), Souad Ait Taleb (USTHB, Algeria), <b>Kamel AIT TAHAR</b> (LM2D, Uni., Mohand <b>Oulhaj</b> Bouira, Algeria) <b>Novel Biocompatible Nanoparticles For Drug Delivery To Brain</b> Waldemarm <b>Lipinski</b> (Warsaw U.Life Sci, Poland), J. Kaszewski (Polish Acad Sci, Inst Phys.), O. Ozagowska, Z. Gajewski (Warsaw U.Life Sci), M. Godlewski (Polish Acad Sci, Inst.Phys), M. M. Godlewski (Warsaw U.Life Sci)</p> <p><b>Impact of Functionalization of Graphene Oxide and Salt Concentration on DNA Biosensor Based on Fluorescence Polarized-FRET</b> Diana Becheru, George Mihail Vlăscănu, Jorge S. Burns, Mariana Ionita (U. Politeh. Bucharest, Romania)</p> <p><b>Properties Biocomposites based on (Hydroxybutyrate-Co-Valerate)</b> Dalila <b>Hamliche</b>, Amar Boukerrou, Neethu Ninan (Mahatma Gandhi U., Kerala, India)</p>
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Sessions FINAL TIMETABLE ICCE-26 Paris, July 15-21, 2018 OVERVIEW OF ALL 60 TECHNICAL SESSIONS			
<p><b>Tuesday 8:30AM-10:40AM</b> Session 1a <b>GENERAL 1</b> Session 1b <b>MATH 1</b> Session 1c <b>ENERGY 1(oxide)</b> Session 1d <b>GELCLAD 1</b> SHORT BREAK <b>Tuesday 10:40AM-12:50PM</b> 12:50PM Session 2a <b>GENERAL 2</b> Session 2b <b>MATH 2</b> Session 2c <b>NANO 1</b> Session 2d <b>GELCLAD 2</b> LUNCH ON YOUR OWN <b>Tuesday 1:50PM-4:00PM</b> Session 3a <b>GENERAL 3</b> Session 3b <b>MATH 3</b> Session 3c <b>INFRA 1</b> Session 3d <b>TEXTILE 1</b> SHORT BREAK <b>Tuesday 4:00PM-6:10PM</b> Session 4a <b>GENERAL 4</b> Session 4b <b>MATH 4</b> Session 4c <b>NANO 2</b> Session 4d <b>BIO 1</b></p>	<p><b>Wednesday 8:30AM-10:40AM</b> Session 5a <b>GENERAL 5</b> Session 5b <b>MATH 5</b> Session 5c <b>INFRA 2</b> Session 5d <b>ENERGY 2 (oxide)</b>  <b>Wednesday 10:40AM-12:50PM</b> Session 6a <b>GENERAL 6</b> Session 6b <b>MATH 6</b> Session 6c <b>NANO 3</b> Session 6d <b>BIO 2</b>  <b>Wednesday early afternoon</b> Session 7a <b>GENERAL 7</b> Session 7b <b>MATH 7</b> Session 7c <b>INFRA 3</b> Session 7d <b>METAL 1</b>  <b>Wednesday 4:00PM-6:10PM</b> Session 8a <b>GENERAL 8</b> Session 8b <b>MATH 8</b> 8c <b>INFRA 4</b> Session 8d <b>BIO 3</b></p>	<p><b>Thursday 8:30AM-10:40AM</b> Session 9a <b>GENERAL 9</b> Session 9b <b>MATH 9</b> Session 9c <b>INFRA 5</b> Session 9d <b>ENERGY 3 (oxide)</b>  <b>Thursday 10:40AM-12:50PM</b> Session 10a <b>GENERAL 10</b> Session 10b <b>MATH 10</b> Session 10c <b>NANO 4</b> Session 10d <b>METAL 2</b>  <b>Thursday early afternoon</b> Session 11a <b>GENERAL 11</b> Session 11b <b>MATH 11</b> Session 11c <b>INFRA 6</b> Session 11d <b>TEXTILE 2</b>  <b>Thursday 4:00PM-6:10PM</b> Session 12a <b>GENERAL 12</b> Session 12b <b>MATH 12</b> Session 12c <b>INFRA 7</b> Session 12d <b>BIO 4</b></p>	<p><b>Friday 8:30AM-10:40AM</b> Session 13a <b>GENERAL 13</b> Session 13b <b>MATH 13</b> Session 13c <b>INFRA 8</b>  <b>Friday 10:40AM-</b> Session 14a <b>GENERAL 14</b> Session 14b <b>MATH14</b> 14c <b>NANO 5</b>  <b>Friday early afternoon</b> Session 15a <b>GENERAL 15</b> Session 15b <b>MATH 15</b> Session 15c <b>INFRA 9</b>  <b>Friday 4:00PM-6:10PM</b> Session 16a <b>GENERAL 16</b> Session 16b <b>MATH 16</b> Session 16c <b>BIO 5</b> FRIDAY NIGHT BANQUET</p>
<p>Duration of each paper is equal to total duration of the session divided by the number of presenters who show up in the session Some Students or Work in Progress sessions are presented during lunch hours everyday</p>			

FRIDAY NIGHT BANQUET 7:30PM



