

MEETING JOINING LINKS (LIVE STREAMING ON ZOOM PLATFORM)

Time zone: GMT -7 Pacific Time (US, Canada)

As the conference is hybrid, the virtual attendees can access the in-person presentations and queries can be asked through zoom chat box.

Meeting links shared will be for the complete meeting to join at any point of time.

Oct 30-31, 2023 | Pacific Time (US and Canada)

Join Zoom Meeting

<https://us06web.zoom.us/j/88144569233?pwd=jlP6Pgv227iWVp3tD52EUvIa8pgB9z.1>

Meeting ID: **881 4456 9233**

Passcode: 307010

Join Zoom Meeting:

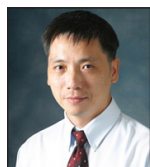
<https://us06web.zoom.us/j/88144569233?pwd=jlP6Pgv227iWVp3tD52EUvIa8pgB9z.1>

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05:50-06:00 Opening Remarks & Introduction

Keynote Presentations

Moderator: **Kacie Wells**, North Carolina State University, Raleigh, NC06:00-06:35 **General Entropy Approach Towards Ultratough Sustainable Plastics**
Chaobin He, National University of Singapore, Singapore

Chaobin He is an Associate Professor at Department of Materials Science and Engineering, National University of Singapore and hold a joint appointment as a Principal Scientist at the Institute of Materials Research and Engineering, A-star, Singapore. Dr. He obtained his Ph.D. degree from Department of Materials Science and Engineering, Cambridge University. Before moving to Singapore, he worked as a postdoc fellow at Cavendish Laboratory, Cambridge University and USM in USA. His research interests are in areas of polymer composite and nanocomposites, green plastics and functional polymers and self-assembly. Dr. He is an author of over 300 journal papers with an h-index of 64 (ISI) and a co-inventor of over 30 patents.

06:35-07:10 **Nanocomposites of Conjugated Polymers with Cellulosic Nanomaterials, Graphenic Frameworks and Inorganic Nanotube Arrays: Challenges and Opportunities**
Karthik Shankar, University of Alberta, Canada

Karthik Shankar is Professor of Electrical and Computer Engineering at the University of Alberta, in Edmonton Canada. He completed M.S. (2002) and Ph.D. (2007) in Electrical Engineering from Penn State University. From 2012-2017, he held a secondment to NRC-NINT. His research is focused on conjugated polymers, cellulose nanocrystals, graphenic frameworks, metal oxide nanomaterials and plasmonic substrates for optoelectronic device applications. He is an expert in quantum electronics and materials science. He is a recipient of the Petro-Canada Young Innovator Award. He has authored over 180 publications that have been cited >22,000 times. His h-index is 58 as of 2023.

07:10-07:45 **Molecular Simulations of Polyelectrolyte Brushes and Associated Ions and Water**
Siddhartha Das, University of Maryland, College Park, MD

Siddhartha Das is an Associate Professor in the University of Maryland (UMD), he received his B.S. and Ph.D. from the Indian Institute of Technology Kharagpur. His research focuses on polymer systems, soft materials and interfacial transport. He has published 179 journal papers, received promotion to Associate Professorship with early tenure, got elected as Fellows to Royal Society of Chemistry U.K. and Institute of Physics U.K., won Junior Faculty Research Award from UMD engineering, Emerging Investigator awards from journals Soft Matter and Physical Chemistry Chemical Physics, and IIT Kharagpur Young Alumni Award, and got recognition as top 2% scientist by Stanford University.

07:45-08:20 **High-performance Composites Derived from Bio Sources and Carbon based Reinforcements**
Ram K. Gupta, Pittsburg State University, Pittsburg, KS



Ram K. Gupta is a Professor of Chemistry at Pittsburg State University. He is the Director of Research at the National Institute for Materials Advancement (NIMA). Dr. Gupta has been recently named by Stanford University as being among the top 2% of research scientists worldwide. Dr. Gupta has published over 270 peer-reviewed journal articles, made over 350 national/international/regional presentations, chaired/organized many sessions at national/international meetings, wrote several book chapters (90+), worked as Editor for many books (30+) for American Chemical Society, CRC, Springer, Elsevier, etc. He is also serving as Editor, Associate Editor, Guest Editor, and Editorial Board Member for various journals.

08:20-08:40 Break

Oral Presentations

Polymer Properties & Applications

Chair: **Severine A.E. Boyer**, Mines Paris PSL CEMEF CNRS, France

08:40-09:00 **Two-dimensional Propagation of Thermal Waves Surrounding Dendrites Based on a Finite Difference Method**

Severine A.E. Boyer, Mines Paris PSL CEMEF CNRS, France

09:00-09:20 **Oil and Char Derived from Waste Tires (Polymer Rubber) Pyrolysis as a New Potential Base for New Eco-binder and Antioxidant Agent for Road Pavements**

Paolino Caputo, University of Calabria, Italy

09:20-09:40 **Valorization of Biomass from Insect Investigated for Commodities Plastic Degradation by a Circular Economy Approach**

Patrizia Cinelli, University of Pisa, Italy

09:40-10:00 **Molecular Dynamics Study of Polyamidoamine Oligomers Containing B-cyclodextrins as Drug Carriers for Cancer Therapy**

Giuseppina Raffaini, Politecnico di Milano, Italy

10:00-10:20 **Photoresins for the Suitable Development of Carbon Monoliths by 3D Printing**

Jose Luis Diaz de Tuesta, Universidad Rey Juan Carlos, Spain

10:20-10:40 **Production of Polyhydroxyalkanoates (PHBV) from Whey and Preparation of Drug-loaded Nanoparticles**

Maria C. Veiga, University of A Coruna, Spain

10:40-11:00 **The Epoxy/Thiol-ene Photopolymerization: A New Curing Method for Epoxy Resins**

Ricardo Acosta Ortiz, Applied Chemistry Research Center, Mexico

11:00-11:20 Break

Chair: **Jihua Chen**, Oak Ridge National Laboratory, Oak Ridge, TN

11:20-11:40 **Amphiphilic Copolymers Containing Polystyrene and Polyglycidol Blocks with Various Architecture: Synthesis, Shape of Unimers, Aggregation Properties and Application for Enzymes and Enzyme Substrates Encapsulation**

Stanislaw Slomkowski, Centre of Molecular and Macromolecular Studies, Poland

11:40-12:00 **Utilization of Corn Stover-derived Nanocellulose as Oil-in-water Emulsion Stabilizer**

Lingling Liu, Iowa State University, Ames, IA

- 12:00-12:20 **3D Printing Strategies to Control Biochemical Heterogeneity with in 3D Scaffolds for Tissue Interface Engineering**
Murat Guvendiren, New Jersey Institute of Technology, Newark, NJ
- 12:20-12:40 **The Effect of Wood Fiber Length and Fiber Content on the Dielectric Properties of Maple Fiber-polypropylene Composites**
Farshid Basiji, University of Quebec in Abitibi-Temiscamingue, Canada
- 12:40-13:00 **Machine Learning and Guided Nanostructures of Organic Electronics and Ionics**
Jihua Chen, Oak Ridge National Laboratory, Oak Ridge, TN
- 13:00-13:20 **Insights into Hydrogen Bonding of Polydisperse Polyethylene Glycol from Molecular Dynamics Simulations**
Markus Hoffmann, SUNY Brockport, Brockport, NY
- 13:20-13:40 **Thermoplastic Elastomers with Inherent Antimicrobial Properties for Reduction in the Spread of Harmful Microbes**
Kacie Wells, North Carolina State University, Raleigh, NC
- 13:40-14:00 **Polymeric Hydrogels for Wearable Biosensors**
Wen Zhong, University of Manitoba, Canada

14:00-14:20 Break

Chair: **Laura Romero-Zeron**, University of New Brunswick, Canada

- 14:20-14:40 **Immobilization of Laccase enzyme on Poly (Maleic Anhydride-alpha-styrene) Films**
Marcela Urzua, Universidad de Chile, Chile
- 14:40-15:00 **Structural Investigation of Human Hair**
Cristiano L.P. Oliveira, University of Sao Paulo, Brazil
- 15:00-15:20 **Nanosize Azodye Layers for Liquid Crystal Photoaligning and Photopatterning**
Vladimir Chigrinov, The Hong Kong University of Science and Technology, Hong Kong
- 15:20-15:40 **Photodegradation of Polymeric Chains by Molecular Dynamics**
Dmitri Kilin, North Dakota State University, Fargo, ND
- 15:40-16:00 **Improved Flocculation Efficiency of Cationic Polymers via Self-assembling**
Laura Romero-Zeron, University of New Brunswick, Canada
- 16:00-16:20 **Access to Poly(organophosphazenes) by Macromolecular Substitution**
Harry R. Allcock, The Pennsylvania State University, State College, PA

16:20-16:30 Break

Keynote Presentation

- 16:30-17:00 **Joining Strength of Carbon Fiber Reinforce Polymer and Metals**
Ninshu Ma, Osaka University, Japan



Ninshu Ma has published 7 books and more than 200 papers in well-known journals and major international conferences. He chaired international symposium on Visualization of Joining and Welding (Visual-JW2019). He also chaired international conference on Welding Science and Engineering (WSE2019) and co-chaired WSE2011, WSE2013, WSE2017 and WSE2023. He also joined the development of commercial software JSTAMP and JWELD for metal forming and welding simulations, respectively.

Oral Presentations

- 17:00-17:20 **Polyurethane Elastomers Toughened by Amphiphilic ABA Tri-block Copolymers as the Soft Segments**
Yanbin Fan, Dow, China
- 17:20-17:40 **Enhanced Expression of the Gene Cluster for Plant-derived Aromatic Compound Detoxification by Lignin Degradation Product**
Eri Kumagawa, Gunma University, Japan
- 17:40-18:00 **Moisture Adsorption-desorption Behavior in Nanocomposite Copolymer Films**
Norazilawati Muhamad Sarih, Universiti Malaya, Malaysia
- 18:00-18:20 **Mechanical and Thermal Performance of PLA/ Recycled HDPE Biocomposite Foams Reinforced with Kenaf Fiber**
Sahrim Ahmad, Universiti Kebangsaan Malaysia, Malaysia
- 18:20-18:40 **Polyazole Based Polymer Materials Development for Challenging Application**
Husnul Maab, University of Buner, Pakistan

End of Day-1

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Oral Presentations

Materials & Engineering

Chair: **Robert Guidoin**, Laval University, Canada

- 07:00-07:20 **Multiple Light Scattering as a Preliminary Tool for Bio-film Formulation**
Catia Giovanna Lopresto, University of Calabria, Italy
- 07:20-07:40 **Crystallographic Texture Evolution in Ultra High Molecular Weight Polyethylene During Uniaxial Tension**
Sahitya Movva, Georgia Tech/Intel Corporation, Atlanta, GA
- 07:40-08:00 **Increasing Polymer Concentration in the Precursor Solutions Systematically Improves the Phase Purity of the Crystalline Oxide Particles in Electro sprayed Films**
Amit Ranjan, Rajiv Gandhi Institute of Petroleum Technology, India
- 08:00-08:20 **Bacterial Membrane-disrupting Mechanism Due to Antimicrobial LL-37 Peptide Action**
Malgorzata Jurak, Maria Curie-Skłodowska University, Poland
- 08:20-08:40 **Multi-scale Investigation of Morphological, Physical and Tensile Properties of Flax Single Fiber, Yarn and Unidirectional Fabric**
Souher Aldroubi, Technical University of Braunschweig and Fraunhofer WKI, Germany
- 08:40-09:00 **Interplay of Matrix Stiffness and Stress Relaxation in Directing Mesenchymal Stem Cells Osteogenic Differentiation**
Marie Christine Durrieu, University of Bordeaux, France
- 09:00-09:20 **Alumina Based Reinforcements for Acrylate Matrix Composite for Dentistry**
Marija Vuksanovic, University of Belgrade, Serbia
- 09:20-09:40 **Medical Textiles in 2023: Key Players to Guarantee Blood Supply Throughout the Body**
Robert Guidoin, Laval University, Canada

Poster Presentation

- 09:40-09:45 **Sustained Administration of Chitosan-tripolyphosphate-DNA Nanoparticles Expressing Fish Codon-optimized Caenorhabditis Elegans FAT-1 Increase Omega3 Fatty Acid Production in the Liver of Gilthead Seabream (*Sparus aurata*)**
Yuanbing Wu, Universitat de Barcelona, Spain

09:45-10:00 Break

Oral Presentations

Chair: **Nicole Levi**, Wake Forest University School of Medicine, Winston-Salem, NC

- 10:00-10:20 **Biodegradable Films: An Alternative for Synthetic Pollution**
Claudia Andrea Romero Bastida, Instituto Politecnico Nacional, Mexico
- 10:20-10:40 **The Use of Silane Coupling Agents to Anchor Imidazoles to Titanium Dioxide and Their Effects on Several Polymer Matrices When Used as a Filler**
Javier Vallejo Montesinos, Universidad de Guanajuato, Mexico

- 10:40-11:00 **Elasto-mechanical Characterization of Liquid Reinforced Soft Solid Composites**
Vinu Unnikrishnan, West Texas A&M University, Canyon, TX
- 11:00-11:20 **Do Functionally Graded Cores of Polymeric Layers Improve Impact Resistance?**
Romesh C. Batra, Virginia Polytechnic Institute and State University, Blacksburg, VA
- 11:20-11:40 **Donor-acceptor Polymer Nanoparticles for Mitigating Bacterial Infections**
Nicole Levi, Wake Forest University School of Medicine, Winston-Salem, NC
- 11:40-12:00 **A 3D Hydrogel Droplet Array for Quantifying Proteins from Minimal Amount of Cells**
Huiyan Li, University of Guelph, Canada
- 12:00-12:20 **Characteristics of Hybrid Bioactive Coatings on the Plasma Activated Polyetheretherketone**
Agnieszka Ewa Wiacek, Maria Curie-Skłodowska University, Poland
- 12:20-12:40 **Non-covalent Protein Polymers are Involved in Inheritance, Disease, and Memory**
Yury O. Chernoff, Georgia Institute of Technology, Atlanta, GA
- 12:40-13:00 **Materials for Chiral Polymer Photonics: Design, Development, and Modulation Strategies for Chiroptical Properties**
Jojo P. Joseph, State University of New York at Buffalo, Buffalo, NY
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- 13:00-13:20 **Break**
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- Chair: Priyanka Sharma**, Western Michigan University, Kalamazoo, MI
- 13:20-13:40 **Functional Biomaterials for Applications in Environmental Remediation**
Priyanka Sharma, Western Michigan University, Kalamazoo, MI
- 13:40-14:00 **Characterization of Composite Filament for Additive Manufacturing of Flexible Structures**
Sabit Adanur, Auburn University, Auburn, AL
- 14:00-14:20 **Effect of Co-grinding on the Dissolution Behavior of Urapidil, Which Forms a Pentahydrate During Dissolution, and the Water-soluble Polymer HPC-SSL**
Takehisa Hanawa, Tokyo University of Science, Japan
- 14:20-14:40 **Artificial Biomembrane Models Using Giant Vesicles of Amphiphilic Diblock Copolymers**
Eri Yoshida, Toyohashi University of Technology, Japan
- 14:40-15:00 **Charge Transport and Thermoelectric Properties in Electrochemically Doped Conducting Polymers**
Hisaaki Tanaka, Nagoya University, Japan
- 15:00-15:20 **Design of Phase Separating Peptide and Peptide-based Regulation of Phase Separation of Drug-target Disordered Proteins**
Kiyoto Kamagata, Tohoku University, Japan
- 15:20-15:40 **Alkyl Vinyl Imidazolium Polymers as Fuel-binders for Photo-curable Energetic Propellants**
Yoav Eichen, Technion - Israel Institute of Technology, Israel
- 15:40-16:00 **Antibacterial Activity of Arundinariinae Microfibre Reinforced Polyvinyl Alcohol**
Che Wan Sharifah Robiah Mohamad, Universiti Malaysia Perlis, Malaysia
- 16:00-16:20 **Review: Trends and Challenges of Biodegradable Plastics for Food Contact Applications**
Navaranjan Namasivayam, Universiti Teknologi Brunei, Brunei Darussalam
- 16:20-16:40 **Effect of Poly (L-Lactic Acid)/Silver Nanocomposites Blends on Barrier and Thermo-mechanical Properties**
Ana Beatriz Morales Cepeda, Tecnológico Nacional de México, Mexico
- 16:40-17:00 **Synergistically Enhancing Photoreduction of CO₂ on CdS Quantum Dots Stabilized by Amphiphilic Metallopolymer**
Junjuda Unruangsri, Chulalongkorn University, Thailand

End of Day-2

**Please follow the In-person
Program for the timings & the
Meeting joining links**



USG-United Scientific Group

(A non-profit organization)

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