


International Conference on
**Polymer Science and
Engineering**

October 17-21, 2022 | Los Angeles, CA | Hybrid


**Four Points by Sheraton
Los Angeles International Airport
9750 Airport Boulevard
Los Angeles, CA**

 **Timezone:
GMT -7 Pacific Time (Los Angeles, CA)**

 **secretary@polymersmeeting.com**

 **+1-469-854-2280/81**

IN-PERSON MEETING GUIDELINES

Face-coverings

Wearing mask is recommended in the meeting premises / in-doors.

Hand sanitizer stations

Hand and washing facilities and/or sanitizing systems easily accessible to everyone throughout the event.

No contact policy

To assist in minimizing potential physical contact, elbow bumps are a great alternative to handshakes.

WiFi

WiFi network and pass code will be shared on arrival to the meeting room.

Q & A

Moderator/Chair will pick up questions from the audience in the meeting room (at venue) and also from the zoom chat function – and ask the speaker to answer live.

MEETING JOINING LINKS (LIVE STREAMING ON ZOOM PLATFORM)

TIMEZONE: GMT -7 PACIFIC TIME (LOS ANGELES, CA)

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 17-21, 2022 - Room 1

Join Zoom Meeting

<https://us06web.zoom.us/j/83823330670?pwd=MUtNSFIQRWh1V1pkb3V4VzIKMHBKdz09>

Meeting ID: 838 2333 0670

Passcode: 202142

Oct 20, 2022 - Room 2

Join Zoom Meeting

<https://us06web.zoom.us/j/81874531716?pwd=VW1lenVwZVN5a0dYZjdFazlMRfh5Zz09>

Meeting ID: 818 7453 1716

Passcode: 016720

Meeting Room: California A and D

08:30-08:50 Registrations & Badge Pickup

08:50-09:00 Opening Ceremony

Keynote Presentations

Moderator: **Lifeng Zhang**, North Carolina A&T State University, Greensboro, NC

09:00-09:30

Tuning Dielectric Properties of Polymer Nanocomposites by Orientation Control of 2-Dimensional Fillers

Alamgir Karim, University of Houston, Houston, TX



Alamgir Karim is Dow Chair Professor in William A. Brookshire Department of Chemical Engineering at University of Houston. Alamgir Karim's Ph.D. is in Physics from Northwestern University. After a post-doc in Chemical Engineering at University of Minnesota, he worked at the NIST, Gaithersburg, Maryland, as Group Leader of Polymer Blends, Combinatorial Methods and Nanomaterials, and as Goodyear Chair Professor in Polymer Engineering at University of Akron.

09:30-10:00

Effects of Thermal Aging and Post-Thermal Aqueous Immersion on Carbon/Epoxy Composites

Vistasp M Karbhari, University of Texas at Arlington, Arlington, TX



Vistasp Karbhari is an Indian American civil engineer and university administrator. Karbhari was the eighth president of the University of Texas at Arlington. Prior to that, Vistasp Karbhari was provost and executive vice president for academic affairs at the University of Alabama in Huntsville. Vistasp Karbhari is known for his research in composite materials and structural engineering.

10:00-10:30

Bioelectronic Application of Conducting Polymers

Jianyong Ouyang, National University of Singapore, Singapore



Jianyong Ouyang received his PhD, master and Bachelor degrees from the Institute for Molecular Science in Japan, the Institute of Chemistry of the Chinese Academy of Science, and the Tsinghua University in Beijing, respectively. His research interests include flexible electronics and energy materials and devices. He invented the first polymer-nanoparticle resistive memory, the first hybrid ionic/electronic thermoelectric converter, the first adhesive intrinsically conducting polymers and the first strain sensor for food processing monitoring in the world.

10:30-10:45 Discussion Time

10:45-11:00 Coffee Break

@ California B and C

Oral Presentations

MATERIALS & ENGINEERING

- 11:00-11:20 **Challenges in the Experimental Characterization and Modelling of Polymers in Industrial Applications**
Michael Johlitz, University of the Bundeswehr Munich, Germany
- 11:20-11:40 **The Amount of Polymer in a Li-ion Battery**
Vincent Battaglia, Lawrence Berkeley National Laboratory, Livermore, CA
- 11:40-12:00 **Imine-Linked Vitrimers for Circular & Repairable Composites**
Philip Taynton, Mallinda Inc., Denver, CO
- 12:00-12:20 **Sustainable Bio-binder from Microalgae for Epoxy-based Composite Materials**
Lifeng Zhang, North Carolina A&T State University, Greensboro, NC
- 12:20-12:40 **Designing “Green” Hydrogels for Air Moisture Capture**
Simeng Li, California State Polytechnic University, Obispo, CA
- 12:40-13:00 **Biobased Resins for All-Green Natural Fiber-Reinforced Polymer Composites**
Jaehwan Kim, Inha University, South Korea
- 13:00-13:05 Discussion Time & Group Photo
- 13:05-14:00 Lunch Break @ California B and C
- Chair: Philip Taynton**, Mallinda Inc., Denver, CO
- 14:00-14:20 **Designing Polymer based PIC Robot Arm with Machine Learning**
Seong S. Cheon, Kongju National University, South Korea
- 14:20-14:40 **Hydroxyl Mediated Catalyst-Free Dynamic Covalent Epoxy Systems: Mechanical, Thermal, and Adaptable Properties and Chemical Recyclability**
Jinwen Zhang, Washington State University, Seattle, WA
- 14:40-15:00 **Prediction of the Experimental Mechanical Behaviors of Polymer Composites using Advanced Nonlinear Finite Element Modeling**
Anindya Deb, Indian Institute of Science, India
- 15:00-15:20 **New Type of Conductive Polymeric Material: Magnesium-Carbon Nanotube (CNT)**
Yong Jihn Kim, University of Puerto Rico, Mayaguez, PR
- 15:20-15:40 **Reactive Extrusion (REX) Affording Block Copolymers which Enhance Toughness of Biodegradable PLA**
Anthony Keyes, Northern Technologies International Corporation, Circle Pines, MN
- 15:40-16:00 **Computational Approach to Modeling Epoxy Resin Polymers**
Jihan Kim, Korea Advanced Institute of Science & Technology, South Korea
- 16:00-16:20 Coffee Break @ California B and C
- 16:20-16:40 **Drastic Improvement in Physical Properties of Oriented Biodegradable Films**
Piyawane Jariyasakoolroj, Kasetsart University, Thailand
- 16:40-17:00 **Novel Processes for Casein Fiber and Microparticle Formation**
Ronald Gebhardt, RWTH Aachen University, Germany
- 17:00-17:20 **Using Reactive Extrusion to Upgrade Polymer Mixtures in Recycling**
Christoph Burgstaller, Transfer Center for Plastics Technology, Austria
- 17:20-17:40 **Process Modeling of Composites using a Multiscale Framework**
Marianna Maiaru, University of Massachusetts Lowell, Lowell, MA
- 17:40-18:00 **Process Modeling of Composites using a Multiscale Framework**
Gregory Odegard, Michigan Technological University, Houghton, MI
- 18:00-18:20 **Catechol-Based Hypercrosslinked Polymer for Fe Adsorption and its Application in Fenton Catalysis for Wastewater Treatment**
Thanchanok Ratvijitvech, Mahidol University, Thailand

End of Day-1

Tuesday, October 18, 2022

Timezone: GMT -7 Pacific Time (Los Angeles, CA)

DAY 2

Join Zoom Meeting:

<https://us06web.zoom.us/j/83823330670?pwd=MUtnSFLQRWh1V1pkb3V4VzIKMHBKdz09>

Meeting ID: 838 2333 0670

Passcode: 202142

Meeting Room: California A and D

Oral Presentations

POLYMER PROPERTIES

Chair: **Kenny Mineart**, Bucknell University, Lewisburg, PA

- 09:00-09:20 **Molecular Design of Highly Conductive Electrolytes for Lithium Batteries: Experimental Validation of Computational Prediction**
Ishrat Khan, Clark Atlanta University, Atlanta, GA
- 09:20-09:40 **Analysis of Physicochemical Factors on Solute Diffusion through Block Copolymer Organogels**
Kenny Mineart, Bucknell University, Lewisburg, PA
- 09:40-10:00 **Moisture Responsive Textiles with Artificial Leaf Stomata**
Jintu Fan, Hong Kong Polytechnic University, Hong Kong
- 10:00-10:20 **Physical Chemistry of Anisotropic Gel Formation Induced by Phase Contact and Diffusion**
Toshiaki Dobashi, Gunma University, Japan
- 10:20-10:40 **Prediction of Fluids Sorption into Polymers using Machine Learning**
Benoit Creton, IFP Energies nouvelles, France
- 10:40-11:00 **Mechanistic Origins of Low-Temperature Bonding in Solid Polymers**
Ajay Vallabh, University of New Hampshire, Durham, NH
- 11:00-11:20 **Coffee Break** @ California B and C
- 11:20-11:40 **CO₂ to Plastic: Integrating Chemical Catalysis and Biological Conversion of Carbon Intermediates into Polyhydroxyalkanoates**
Richard Hamilton, San Diego State University, San Diego, CA
- 11:40-12:00 **Oil Recovery by Polymer Flooding and Green Opportunities**
Rosangela Barros Zanoni Lopes Moreno, University of Campinas, Brazil
- 12:00-12:20 **Study of High Near IR Reflective Materials Based on Crosslinked Composite Nylon 6 Fibers**
Gwomei Wu, Chang Gung University, Taiwan
- 12:20-12:40 **Tuning the Properties of Multicomponent Polysaccharide/Peptide Selfassembled Macroscopic Membranes**
Ronit Bitton, Ben-Gurion University of the Negev, Israel
- 12:40-13:00 **Bio-based Flame Retardant Self-Stratifying Coatings**
Maude Jimenez, University of Lille, France
- 13:00-13:10 **Discussion Time**
- 13:10-14:00 **Lunch Break** @ California B and C
- Chair: **Terry L. Alford**, Arizona State University, Tempe, AZ
- 14:00-14:20 **A Biomimetic Silicone Hydrogel Polymer Material for Contact Lenses**
James Wu, Alcon, Fort Worth, TX

- 14:20-14:40 **Generalized Protein Adsorption Mechanism on Polymer Nano-Film Surface**
Maya Endoh, Stony Brook University, Stony Brook, NY
- 14:40-15:00 **Probing the Diffusion, Adhesion and Migration of Polymers at Interfaces**
Mesfin Tsige, The University of Akron, Akron, OH
- 15:00-15:20 **Perovskite Solar Cells Fabrication Assisted by the Use of Antisolvents**
Terry L. Alford, Arizona State University, Tempe, AZ
- 15:20-15:40 **3D Printing of Carbon based Electrodes by Projection Micro Stereolithography for Energy Storage Applications**
Mariana Desiree Reale Batista, Lawrence Livermore National Laboratory, Livermore, CA
- 15:40-16:00 **Mass Manufacturing of High Precision Micro-Optical Components through X-Ray Lithography and Determined Chain Scission of Polymers**
S M P Kalaiselvi, National University of Singapore, Singapore
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- 16:00-16:20 **Coffee Break** @ California B and C
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- 16:20-16:40 **3D Printing of Thermosetting Polymers and Composites via Frontal Polymerization**
Mostafa Yourdkhani, Colorado State University, Fort Collins, CO
- 16:40-17:00 **Preparation and Characterization of Phenyl Modified Natural Rubber**
Nuorn Choothong, Rajamangala University of Technology Rattanakosin, Thailand
- 17:00-17:20 **Characterization of a Chitosan Derivative to be used in Novel Applications**
Iris Beatriz Vega Erramuspe, Auburn University, Auburn, AL
- 17:20-17:40 **Additive Approach to Flame Retard PBT Vitrimer**
Samyn Fabienne, Centrale Lille, France
- 17:40-18:00 **Very Effective, Nontoxic, Nonmigrating Biobased Oligomeric Hyperbranched Poly(ester) Plasticizers for (Poly vinyl chloride) from the Bio monomers, Glycerol and Adipic Acid**
Bob A. Howell, Central Michigan University, Mount Pleasant, MI
- 18:00-19:00 **Poster Presentations & Drinks** @ California B and C
- P-01 **Precision Deconstruction of Condensation Polymers using Organocatalyst in Tailored Ionic Liquids**
Chao Guan, Oak Ridge National Laboratory, Oak Ridge, TN
- P-02 **Effect of Surfactant-introduced Ionomers on PTFE-based Reinforced Composite Membrane for PEMFC**
Jin Woo Bae, KOREATECH, South Korea
- P-03 **Control of Temperature Coefficient of Resistance of Graphene Composite for Rapid Heating Elements**
Sung-Hoon Park, Soongsil University, South Korea
- P-04 **Sol-Rec₂: Novel Methods for Delamination of Pharma Blister Packs and other Multi-Layer Materials for Recycling Purposes**
Pascal Negre, IPM2, France
- P-05 **In Carbonated forms of Biominerals Fibrin in Hydro-entangling Polymeric Absorption with Oxide and Hydroxide**
Wei Yu Wei, University of Windsor, Canada
- P-06 **Synthesis of Multi-metallic Clusters using a Dendrimer Reactor**
Kimihisa Yamamoto, Tokyo Institute of Technology, Japan
- P-07 **Selected Properties of 3D Printed Clarinets**
Bernd Weidenfeller, Clausthal University of Technology, Germany

End of Day-2

Wednesday, October 19, 2022

Timezone: GMT -7 Pacific Time (Los Angeles, CA)

DAY 3

Join Zoom Meeting:

<https://us06web.zoom.us/j/83823330670?pwd=MUtNSFlQRWh1V1pkb3V4VzIKMHBKdz09>

Meeting ID: 838 2333 0670

Passcode: 202142

Meeting Room: California A and D

Oral Presentations

POLYMER APPLICATIONS

Chair: **Berenika Syrek-Gerstenkorn**, University of Leicester, UK

- 09:00-09:20 **Biomimetic Nanofibrous 3D Polymeric Materials for Craniofacial Bone Tissue Engineering**
Hongli Sun, University of Iowa, Iowa City, IA
- 09:20-09:40 **Mucoadhesive and Viscoelastic Properties of Co-Hydrogels Formed by Poly(Ethylene Glycol), Fluoroalkyl and Poly(Acrylic Acid)**
Yong Ba, California State University, Los Angeles, CA
- 09:40-10:00 **Functional Polymer Association with PFAS Surfactants**
Marina Tsianou, University at Buffalo, Amherst, NY
- 10:00-10:20 **Cellulose, a Versatile Material for Food- and Bio- Industry**
Young Hoon Jung, Kyungpook National University, South Korea
- 10:20-10:40 **Post-Consumer Recycled Polyethylene in Product Packaging Applications**
Greg Curtzwiler, Iowa State University, Ames, IA
-
- 10:40-11:00 **Coffee Break** @ California B and C
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- 11:00-11:20 **Conjugated Break: A New Design Strategy for Electron Acceptor Polymers Efficient and Thermally Stable All-Polymer Solar Cells**
Donghong Yu, Aalborg University, Denmark
- 11:20-11:40 **Flexible Stealth Materials for Multispectral Camouflage from Optical Frequencies to Millimeter Waves**
Jae W Hahn, Yonsei Univ, South Korea
- 11:40-12:00 **Fruitvax™-Platforms for Mucosally Attacking Mucosal Infections**
S. Indu Rupassara, FruitVaccine Inc., Champaign, IL
- 12:00-12:20 **Sol-Rec₂: Novel Methods for Delamination of Pharma Blister Packs and other Multi-Layer Materials for Recycling Purposes**
Berenika Syrek-Gerstenkorn, University of Leicester, UK
- 12:20-12:40 **Isoporous Block Copolymer Membranes with Tuned Pore Size and Functionality for Ultra and Nanofiltration**
Volker Abetz, University of Hamburg, Germany
- 12:40-13:00 **Synthetic Assembly of a Series of Glycopolymers Having N-Acetyl-D-Glucosamine Moieties for Evaluations Of Lectin Carbohydrate Interactions**
Koji Matsuoka, Saitama University, Japan
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- 13:00-13:10 **Discussion Time**
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- 13:10-14:00 **Lunch Break** @ California B and C

Chair: Jooyoung Lee, Korea Institute for Advanced Study, South Korea

- 14:00-14:20 **Development of Functional Polymers for Nanomedicines of Anticancer Agents**
Kyung Taek Oh, Chung-Ang University, South Korea
- 14:20-14:40 **Relationship between Interfacial Instabilities and Mechanical Strength of Multilayer Symmetric Polymer Melts**
Mohammad Ranjbaran, Shawnee State university, Portsmouth, OH
- 14:40-15:00 **Absorption, Migration and Permeation Studies using a Quartz Crystal Microbalance**
Maria Teresa S. R. Gomes, University of Aveiro, Portugal
- 15:00-15:20 **Functionalized Insulated Molecular Wires**
Jun Terao, The University of Tokyo, Japan
- 15:20-15:40 **Size Effects in Nano-Reinforced Polymers and the Influence of NPs Surface Chemistry – Case of PvdF and Fe₃O₄ NPs**
Francisco Sebastian Navarro Oliva, University of Technology of Compiègne, France
- 15:40-16:00 **Size Effects in Nano-Reinforced Polymers: Hybrid Modeling and Experimental Approach**
Fahmi Bedoui, University of Technology of Compiègne, France
- 16:00-16:20 **Exploring the Folding Mechanism of Small Proteins GB1 and LB1**
Jooyoung Lee, Korea Institute for Advanced Study, South Korea

End of Day-3

Thursday, October 20, 2022

Timezone: GMT -7 Pacific Time (Los Angeles, CA)

VIRTUAL - Parallel Session-I

DAY 4

Join Zoom Meeting:

<https://us06web.zoom.us/j/83823330670?pwd=MUtNSFlQRWh1V1pkb3V4VzIKMHBKdz09>

Meeting ID: 838 2333 0670

Passcode: 202142

Meeting Room - 1

06:20-06:30 Opening Remarks & Introduction

Keynote Session-I

Moderator: Zhaohui Tong, Georgia Institute of Technology, Atlanta, GA

06:30-07:00

Multifunctional Hybrid Metal Oxide-Polymer Aerogels from Electrospun Nanofibers

Saad A Khan, North Carolina State University, Raleigh, NC



Saad Khan is INVISTA Professor in the Department of Chemical & Biomolecular Engineering at NC State University. Saad joined NC State after finishing his PhD in Chemical Engineering at MIT, and postdoc at AT&T Bell Laboratories. Saad's research interests spans developing functional materials such as aerogels and biodegradable platforms for improved food security to understanding rheological behavior of soft solids and gels. Khan has supervised over 60 PhD students, several postdocs, has over 250 publications and 17 patents. Khan has won several awards including Fellow of the Society of Rheology and RJR Reynolds Tobacco Award for Research, Teaching & Extension.

07:00-07:30

Engineering at the Nanoscale: A Strategy for Developing High Performance Functional Materials from Biopolymers

Sabu Thomas, Mahatma Gandhi University, India



Sabu Thomas is currently the Vice-Chancellor of Mahatma Gandhi University, Kottayam, Kerala, India. He is a Professor at the International and Inter University Centre for Nanoscience and Nanotechnology and Full Professor of Polymer Science and Engineering at the School of Chemical Sciences of Mahatma Gandhi University, Kottayam, Kerala, India. His ground-breaking research has covered the areas of polymer science and engineering, polymer nanocomposites, elastomers, polymer blends, interpenetrating polymer networks, polymer membranes, green composites and nanocomposites, nanomedicine and green nanotechnology. Prof. Thomas has received several national and international awards in recognition for his work, and recently received Honoris Causa (DSc) from the University of South Brittany, Lorient, France, in recognition for his contributions to polymer science and engineering. Prof. Thomas has published over 1400 peer-reviewed research papers, reviews and book chapters. He has co-edited more than 170 books. Currently he is having an H index of 124.

07:30-08:00

Impact of Manufacturing Parameters on the Structure Integrity and Biocompatibility of Polypropylene Vaginal/Hernia Mesh Implant

Ahmed El Ghannam, The University of North Carolina at Charlotte, Charlotte, NC



El-Ghannam specializes in synthesis and characterization of biomaterials for drug delivery and tissue reconstruction. His lab creates resorbable scaffolds for tissue reconstruction and to enable in vivo drug delivery to signal cells. The research activities of El-Ghannam's lab addresses problems related to treatment of breast and liver cancer and bone infection. He routinely performs biocompatibility tests, drug release kinetics, assessment of therapeutic effects and cell function and engineering surfaces of biomaterials to stimulate cell function and tissue formation.

Oral Session-I

MATERIALS & ENGINEERING

Chair: Arash Takshi, University of South Florida, Tampa, FL

- 08:00-08:20 **Bioinspired Mechanically Robust and Functional Ternary Nanocomposites**
Paramita Das, Indian Institute of Science Education and Research Bhopal, India
- 08:20-08:40 **Bioinspired Polydopamine Modified Cellulose Nanocrystals/Sodium Carboxymethylcellulose Nanocomposites with Enhanced Mechanical Properties**
Roop Singh Lodhi, Indian Institute of Science Education and Research Bhopal, India
- 08:40-09:00 **Electromagnetic Interference Shielding Performance of 2D-Layered Ti₃C₂T_x (MXene) Incorporated Ema/Eocternary Blends Nanocomposites in the S-Band (2-4 Ghz)**
Nimai C. Nayak, Siksha'O'Anusandhan, India
- 09:00-09:20 **Polymer Composites Incorporated with Deep Eutectic Solvents and Complex Fillers with Ionic Liquids for Enhancing of Membrane Separation Performance**
Alexandra Pulyalina, Saint Petersburg State University, Russia
- 09:20-09:40 **The Use of Products Derived from Waste Tires (Polymer Rubber) via Pyrolysis as Additives for Road Pavements**
Paolino Caputo, University of Calabria, Italy
- 09:40-09:50 **Coffee Break**
- Chair: Fang XU**, University of Nottingham, UK
- 09:50-10:10 **Thermomechanical Properties of Semicrystalline Thermoplastics: Experimental Characterisation, Constitutive Modelling and Numerical Implementation**
Nan Li, Imperial College London, UK
- 10:10-10:30 **Glycolysis of Polyurethanes Composites Containing Pcms**
Ana Maria Borreguero Simon, University of Castilla-La Mancha, Spain
- 10:30-10:50 **Remarkable Enhancement of Thermal and Electrical Properties for Peek Composite through a Conducting Network**
Fang XU, University of Nottingham, UK
- 10:50-11:10 **Innovative Closed-Loop Recyclable Bio-based Composites from Epoxidated Waste Flour and Recycled Carbon Fibers**
Gloria Anna Carallo, University of Salento, Italy

11:10-11:30	Modeling Hyper Elastic Behavior of 3D Printed Kirigami-Flex Severine A.E. Boyer , CNRS, France
11:30-11:50	Conducting Polymer Based Composite Gel Electrolyte for Concurrent Solar Energy Harvesting and Storage Arash Takshi , University of South Florida, Tampa, FL
11:50-12:10	Optimization of a Polymer-Surfactant Self-Assembling Network System for the Remediation of Sands Contaminated with Heavy Crude Oil Laura Romero-Zeron , University of New Brunswick, Canada
12:10-12:30	Conjugated Polymers Pixelated Devices for Artificial Retina Maxim Shkunov , University of Surrey, UK
12:30-12:50	Advanced Polymer Ferroelectrics and their Applications Qiming Zhang , The Penn State University, State College, PA
12:50-13:20	Lunch Break
Chair: Fahmi Bedoui , University of Technology of Compiègne, France	
13:20-13:40	Value-Added Functional Biomaterials from Renewable Resources Zhaohui Tong , Georgia Institute of Technology, Atlanta, GA
13:40-14:00	Functional and Responsive Polymer Brushes via Surface-Initiated Atom Transfer Radical Polymerization Jian Wang , University of Illinois Urbana-Champaign, Champaign, IL
14:00-14:20	Influence of Montmorillonite's D-Spacings on Heat Release Rate of an Intumescent Formulation in Fire Spread: a Theoretical Study Ana Lucia de Souza Ventapane , Federal University of Rio de Janeiro, Brazil
14:20-14:40	Disappearance of Polyelectrolyte Peak in Salt-Free Solutions Alexandros Chremos , National Institutes of Health, Bethesda, MD
14:40-15:00	Simultaneous Improvement of Stability and Durability of Composite Membrane Containing Polyhedral Oligomeric for Pem Fuel Cell and Water Electrolysis. Anima Bose , University of Houston, Houston, TX
15:00-15:20	Advanced Mechanical Recycle Process Based on Physical Degradation / Physical Regeneration Theory Shigeru Yao , Fukuoka University, Japan
15:20-15:40	Mechanically Tough Composite Gels Reinforced by Inorganic Particles and Nanofibers Hiroyuki Takeno , Gunma University, Japan
15:40-16:00	Carbonic Acid Capture-Induced Self-Assembly into Polymer Materials Eri Yoshida , Toyohashi University of Technology, Japan
16:00-16:10	Coffee Break
Chair: Ying Zhong , University of South Florida, Tampa, FL	
16:10-16:30	Plasma-Treated Carbon Nanotubes Reinforced Polyimide Nanocomposites Seira Morimune-Moriya , Chubu University, Japan
16:30-16:50	Entropy Driven Ultratough Blends from Brittle Polymers: Mechanisms and Applications Chaobin He , National University of Singapore, Singapore
16:50-17:10	4D Printed Smart Scaffolds Programming Neural Stem Cell Differentiation Ying Zhong , University of South Florida, Tampa, FL

- 17:10-17:30 **Functionalized Nanomagnetic Cellulose-Polyethyleneimine for Removal of RB5 Dye**
Norzita Ngadi, Universiti Teknologi Malaysia, Malaysia
- 17:30-17:50 **Polymeric Membranes for H₂ Separation**
Tai-Shung Chung, National Taiwan University of Science and Technology, Taiwan
- 17:50-18:10 **Mechanical Property of Epoxy-Modified Cyanate Ester Resin Containing Liquid Crystal Domains**
Satoshi Yanaura, Kansai University, Japan
- 18:10-18:15 **Poster**
Use of Lignocellulosic Waste from Garlic as a Reinforcer of Polymer Matrices
Jose Luis Rivera Armenta, Madero City Technological Institute, Mexico

End of Day 4 - Parallel Session-I

Thursday, October 20, 2022

Timezone: GMT -7 Pacific Time (Los Angeles, CA)

VIRTUAL - Parallel Session-II

DAY
4

Join Zoom Meeting:

<https://us06web.zoom.us/j/81874531716?pwd=VW1lenVwZVN5a0dYZjdFazlMRfh5Zz09>

Meeting ID: 818 7453 1716

Passcode: 016720

Meeting Room - 2

Oral Presentations

POLYMER PROPERTIES

Chair: **Lucia D'Accolti**, University of Bari Aldo Moro, Italy

08:00-08:20 **Chitosan Functionalized Isatin Thiosemicarbazones: Synthesis, Characterization, and Anticancer Activity**
Paras Nath Yadav, Tribhuvan University, Nepal

08:20-08:40 **New Click Chemistry Reaction toward Enhanced Interfacial Bonding between Functionalized Bio-Filler and Polymer in Bio-Composites**
Khalid Alzebdeh, Sultan Qaboos University, Oman

08:40-09:00 **Physicochemical Properties of Polyethylene Glycol, a Green Solvent**
Markus M. Hoffmann, SUNY Brockport, Brockport, NY

09:00-09:20 **Synthesis and Recycles of Bioplastics and Celluloses**
Lucia D'Accolti, University of Bari Aldo Moro, Italy

09:20-09:40 **Density Functional Theory Studies of Polypyrrole and Polypyrrole Derivatives; Substituent Effect on the Optical and Electronic Properties**
Andrzej Lapinski, Institute of Molecular Physics, Poland

09:40-10:00 **Structure-Properties Relations for Polystyrene/Polyglycidol Containing Copolymers and Microparticles-Assemblies - Role of Copolymer and Microparticle Architecture**
Slomkowski S., Centre of Molecular and Macromolecular Studies of Polish Academy of Sciences, Poland

10:00-10:20 **Sulfenamides Offer a New Approach to Flame Retardancy of Wood Products, Films and Insulation Materials for Construction and Building Industries**
Carl-Eric Wilen, ABo Akademi University, Finland

10:20-10:30 Break

Chair: **Yongsheng Chen**, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA

10:30-10:50 **Reinforcement of Woven Steel Mesh Insert in the Lap Shear Joint**
Yiling Lu, University of Derby, UK

10:50-11:10 **Enzybiotic-Loaded Hydrogel Dressings for the Treatment of Infected Wounds: A Comprehensive Study**
Lucy Vojtova, Brno University of Technology, Czech Republic

11:10-11:30 **Towards Scalable Manufacturing of Color-Changing E-Textiles**
Joshua Kaufman, University of Central Florida, Orlando, FL

11:30-11:50 **Conventional & Creative Ways to Study Interfacial Chemistry in Polymer Materials**
Michelle Gaines, Spelman College, Atlanta, GA

11:50-12:10 **Study of the Mechanical Strength of Jackfruit using 3D Printed Models**
Josiane Dantas, SENAI CIMATEC University Center, Brazil

12:10-12:30	Machine Learning Aided Polymeric Membrane Design and Optimization Yongsheng Chen , Georgia Institute of Technology, Atlanta, GA
12:30-12:50	Flexible Polymer Electrolytes for Solid-State Supercapacitors Iruno Villaluenga , POLYMAT, Spain
12:50-13:10	Material Extrusion 3D Printing of Highly-Filled Copper Powder-Polymer Composites for Fabrication of Metallic Parts Kunal Kate , University of Louisville, Louisville, KY
<hr/>	
13:10-13:30	Lunch Break
<hr/>	
Chair: Shin A. Moteki , University of Missouri, Kansas City, MO	
13:30-13:50	A Duel Cellular-Heterogeneous Catalyst Strategy for the Production of Olefins from Glucose Zhen Wang , University at Buffalo, Buffalo, NY
13:50-14:10	Chirality-Driven Self-Assembly Application toward <i>in Situ</i> Generation of Janus Dendrimers Shin A. Moteki , University of Missouri, Kansas City, MO
14:10-14:30	Janus Nanoparticles and a Facile Solution to Determine their Amphiphilic Character by Emulsion Stabilization Route Yanio E Milian , University of Antofagasta, Chile
14:30-14:50	Development of Photocurable Epoxy Nanocomposites using Bacterial Cellulose Nanofibers and a Curing Agent Derived from Limonene Ricardo Acosta Ortiz , Applied Chemistry Research Center, Mexico
14:50-15:10	Dispersion States of Cellulose Nanofibers Investigated by a Time-Domain Nuclear Magnetic Resonance (Td-Nmr) Chika Takai-Yamashita , Gifu University, Japan
15:10-15:30	Tunable Large-Scale Compressive Strain Sensor based on Carbon Nanotube/ Polydimethylsiloxane Foam Composites by Additive Manufacturing Junjun Ding , Alfred University, Alfred, NY
15:30-15:50	Metalla-Aromatics, New Building Blocks of Conjugated Polymers Haiping Xia , Southern University of Science and Technology, China
<hr/>	
15:50-16:00	Coffee Break
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Chair: Junjun Ding , Alfred University, Alfred, NY	
16:00-16:20	Oligosaccharide Analysis of the Backbone Structure of the Characteristic polysaccharide of <i>Dendrobium officinale</i> Han Quanbin , Hong Kong Baptist University, China
16:20-16:40	Study on the Shearing Mechanical Behavior and Damage Model of the Polymer Grouting Material-Concrete Contact Surface Mingrui Du , Zhengzhou University, China
16:40-17:00	Crystallization Effect Towards Mechanical Properties for Additive Manufactured Polyamide-12 How Wei Benjamin Teo , Nanyang Technological University, Singapore
17:00-17:20	Heterocyclic Polyacenes and Quinodimethanes Chunyan Chi , National University of Singapore, Singapore
17:20-17:40	Recent Progress of Photo-Polymerization for 3D Printings Jui Teng Lin , Medical Photon Inc, Taiwan

- 17:40-18:00 **Additive Manufacturing of Polymeric Scaffolds with Airbrushed Nanofibrous Membranes for Tissue Interface Engineering**
Murat Guvendiren, New Jersey Institute of Technology, Newark, NJ
- 18:00-18:20 **Development of Textile-Based Electric Heater for Portable Warmth**
Rawat Jaisutti, Thammasat University, Thailand
- 18:20-18:40 **Gene Therapy for Brain Diseases including Stroke and Alzheimer's Disease**
Jang Yenwu, Florida Atlantic University, Boca Raton, FL
- 18:40-19:00 **Polymer Recycling in Reverse Osmosis Desalination**
Madduri Srija, Homi Bhabha National Institute, India

End of Day 4 - Parallel Session-2

Friday, October 21, 2022

Timezone: GMT -7 Pacific Time (Los Angeles, CA)

VIRTUAL

DAY 5

Join Zoom Meeting:

<https://us06web.zoom.us/j/83823330670?pwd=MUtNSFlQRWh1V1pkb3V4VzIKMHBKdz09>

Meeting ID: 838 2333 0670

Passcode: 202142

Keynote Presentation

Moderator: **Huiyan Li**, University of Guelph, Canada

06:00-06:30

Re-Designing Plastics for Environmentally Responsible End-of-Life Biobased and Compostable Polymers

Ramani Narayan, Michigan State University, East Lansing, MI



Ramani Narayan, is University Distinguished Professor at Michigan State University in the Department of Chemical Engineering & Materials Science. He has 200+ refereed publications in leading journals, 32 issued patents, and edited three books in the area of environmentally responsible biobased materials [h-index 51; i10-index 143, 12,248 citations Google Scholar]. He has graduated 22 Ph.D and 23 Master's students at MSU. He is a Fellow of U.S. National Academy of Inventors & Fellow of ASTM International; and amongst many honors and award are ASTM award of merit, the highest society award; DuPont's Packaging Award for excellence in Innovation & Sustainability with the Coca Cola Plant bottle team; Michigan Green Chemistry Governor's Award & State of Michigan Governor's University Award for Commercialization Excellence; Fulbright Distinguished Lectureship Chair in Science & Technology Management & Commercialization; MSU Withrow Distinguished Scholar (Engineering) & University Distinguished Faculty award.

Oral Presentations

Polymer Applications

06:30-06:50

Radiosensitizing Biopolymeric Hydrogel and Nanoparticles for Cancer Chemoradiotherapy
Prateek Bhardwaj, Yale University, New Haven, CT

06:50-07:10

A Rational Approach towards Bioproduction of Bacterial Cellulose
Anindya Basu, Rajiv Gandhi Technological University, India

07:10-07:30

Antibacterial Performance of Bio-Hybrid Chitosan-Grafted-Polybenzoxazine Films
Richa Priyadarshini, Shiv Nadar University, India

07:30-07:50

Preparation of Ultrahydrophobic Coatings using Polymer-based Composite Materials for Various Industrial Applications
Sangeetha Sriram, National Institute of Technology Rourkela, India

07:50-08:10

Polysaccharide Production by Lactic Acid Bacteria
Vera Kuzina Poulsen, Chr. Hansen A/S, Denmark

08:10-08:30

Grafting of Polyaniline by a Dynamic Inverse Emulsion Polymerization Technique onto Membranes as an Anti-Biofouling Agent: An Innovative Approach
Ran Suckeveriene, Kinneret Academic College on the Sea of Galilee, Israel

- 08:30-08:50 **Processing of Bacterial Nanocellulose and Resulting Properties of the Biomaterial**
Hanna Staroszczyk, Gdansk University of Technology, Poland
- 08:50-09:10 **Polymer Vs. Rubber Asphalt: From Lab to Practice**
Zhanping You, Michigan Technological University, Houghton, MI
- 09:10-09:30 **Nitrocellulose Membranes Entrapped with Gold Nanoparticles for Highly Sensitive Protein Detection**
Huiyan Li, University of Guelph, Canada
- 09:30-09:50 **Coffee Break**
- Chair: Ashok Santra**, Aramco Americas, Houston, TX
- 09:50-10:10 **Magnetic Molecularly Imprinted Polymer for Cancer Therapy**
Nebewia Griffete, Sorbonne University, France
- 10:10-10:30 **Mixed Chitosan-Bioglass Coating on Plasma Activated Peek Polymer**
Agnieszka Ewa Wiącek, Maria Curie-Skłodowska University, Poland
- 10:30-10:50 **Application of Synthetic Polymers in the Construction of Oil & Gas Wells**
Ashok Santra, Aramco Americas, Houston, TX
- 10:50-11:10 **Porous Organic Polymers for the Selective Capture of Molecular Targets**
Peter Cormack, University of Strathclyde, UK
- 11:10-11:30 **Computational Design of Zwitterions-Based Protein Delivery Capsules**
Sousa Javannikkhah, University of Limerick, Ireland
- 11:30-11:50 **Genetic Algorithms for Scaffold Design**
Maraolina Dominguez Diaz, Center for Research in Engineering and Applied Sciences, Mexico
- 11:50-12:10 **Use of Biopolymers in Food Packaging**
Sridevi Narayan-Sarathy, PepsiCo Inc, Plano, TX
- 12:10-12:30 **The Origin of Life on Earth History was Recorded in Trna Sequences**
Zachary Frome Burton, Michigan State University, East Lansing, MI
- 12:30-12:50 **A Modular Polymer Platform that Delivers Recombinant Cytokines and Chemotherapeutics. Allows for de-escalation of Radiation Therapy in an Animal Model of Head and Neck Squamous Cell Carcinoma**
Yazeed Alhiyari, University of California, Los Angeles, CA
- 12:50-13:10 **Patterned Liquid Crystal Elastomer Coatings with Dynamic Topography**
Oleg D. Lavrentovich, Kent State University, Kent, OH
- Chair: Zi Chen**, Brigham and Women's Hospital, Boston, MA
- 13:10-13:30 **Multi-Shape-Changing Interpenetrating Networks with Shape Memory Effect and Adaptive Plastic Deformations**
Zi Chen, Brigham and Women's Hospital, Boston, MA
- 13:30-13:50 **Polymeric Micelles for Controlled Delivery of Hydrogen Sulfide and their Biological Activities**
Urara Hasegawa, Pennsylvania State University, State College, PA

Keynote Presentation

- 13:50-14:20 **Surface-Functionalized Polymer Membranes for Ultra Selective Carbon Capture**
Richard Spontak, North Carolina State University, Raleigh, NC



Richard Spontak received his B.S. and Ph.D. degrees in Chemical Engineering from Penn State and UC Berkeley, respectively. He has >300 peer-reviewed journal publications, and his research has been featured on >30 journal covers and cited over 14,000 times. He has been recognized with the ACS Chemistry of Thermoplastic Elastomers and Roy W. Tess Awards, the IOM3 Colwyn Medal, the SPSJ International Award, and the SPE International Award. A fellow of the American Physical Society and the Royal Society of Chemistry, he is a member of the Norwegian Academy of Technological Sciences.

Oral Presentations

- 14:20-14:40 **Design and Fabrication of Polymer Thin Film-Type Sensors for Collecting Bioinformation from Surfaces**
Shinji Takeoka, Waseda University, Japan
- 14:40-15:00 **Nanocellulose- Ag/AgCl Nanoparticles as an Energy Storage Paper**
Ana Beatriz Morales Cepeda, National Technological Institute of Mexico, Mexico
- 15:00-15:20 **Natural Fiber Reinforced Composites: Mechanical and Physicochemical Properties**
Bishnu Acharya, University of Saskatchewan, Canada
- 15:20-15:40 **Preparation and *In Vitro* Evaluation of Floating Tablets of Hydroxypropyl Methylcellulose using Anredera Cordifolia Ten Leaf Extract as a Model Drug**
Cokorda Istri Sri Arisanti, Udayana University, Indonesia
- 15:40-16:00 **Performance Improvement of Thermoplastic Starch-Based Materials**
Rangrong Yoksan, Kasetsart University, Thailand
- 16:00-16:10 Coffee Break
- Chair: Rina Tannenbaum**, Stony Brook University, Stony Brook, NY
- 16:10-16:30 **The Modification of Waste Tire Rubber for Mercury Adsorbent**
Supitcha Rungrodnimitchai, Thammasat University, Thailand
- 16:30-16:50 **Polymer Hole Transport Materials for Perovskite Solar Cells**
Xiaojing Hao, UNSW, Australia
- 16:50-17:10 **Radical-Mediated Ring-Opening Polymerization for Semi-Crystalline Thermoplastic Additive Manufacturing**
Alex Commisso, University of Michigan, Australia
- 17:10-17:30 **Chain Architecture and Conformation of the Ring Opening Co-Polymerization of Bio-based Monomers**
Rina Tannenbaum, Stony Brook University, Stony Brook, NY
- 17:30-17:50 **Semi-Fluorinated Aromatic Ether Polymers and High Yield Carbon Precursors for Extreme Performance Applications**
Dennis W Smith, Mississippi State University, Mississippi State, MS
- 17:50-18:10 **Assessment and Optimization of Graphene Nanoplatelets Dispersion and Nano-Filler Loading in Bio-based Polymer Nanocomposites**
Sahrim Ahmad, Universiti Kebangsaan, Malaysia
- 18:10-18:15 **Poster**
Nanocellulose and its Energy Applications
Carlos Castro, CONACYT, Mexico

End of Day-5

Explore our Events in 2023

Las Vegas

7th International Conference on
Catalysis and Chemical Engineering
February 20-22, 2023 | Las Vegas, NV

Venue:

Hampton Inn Tropicana
4975 S. Dean Martin Dr.
Las Vegas, Nevada, 89118-1656, USA

CATALYSIS

■ ■ ■ FEBRUARY 20-22, 2023 | LAS VEGAS, NV

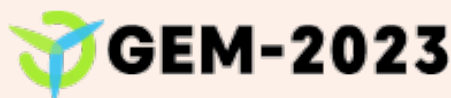
Email: catalysis@uniscigroup.org
Phone: +1-469-854-2280/81

Boston

7th Edition of
Global Energy Meet (GEM)
March 06-09, 2023 | Boston, MA

Venue:

Boston Marriott Newton Hotel
2345 Commonwealth Avenue
Newton, MA 02466, USA

The logo for GEM-2023 features a stylized green and blue circular emblem to the left of the text "GEM-2023" in a bold, black, sans-serif font.

March 6-8, 2023 | Boston, MA

Email: gem@uniscigroup.net
Phone: +1-469-854-2280/81

Houston

4th International Conference on
Materials Science & Engineering
April 24-26, 2023 | Houston, TX

Venue:

DoubleTree by Hilton
Houston Intercontinental Airport
15747 John F. Kennedy Blvd.
Houston, TX 77032, USA

MATERIALS

■ ■ ■ APRIL 24-26, 2023 | HOUSTON, TX

Email: materials@uniscigroup.net
Phone: +1-469-854-2280/81



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