

**PPC-2024**



# **4<sup>th</sup> Global Conference On POLYMERS, PLASTICS & COMPOSITES**

**July 11 - 12, 2024 at Paris, France**



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## SCIENTIFIC PROGRAM

**4<sup>th</sup> Global Conference On**  
**POLYMERS, PLASTICS**  
**AND COMPOSITES**  
**July 11 - 12, 2024 at Paris, France**

## Day-1, July 11, 2024

### Meeting Hall - II

**Moderator:** Huba Marton, *University of Warwick, United Kingdom*

**Registrations Open (08.30-09.10 )**

**Welcome Ceremony (09.10-09.30)**

### Keynote Talks

**Philippe H. Geubelle,**  
*University of Illinois  
Urbana-Champaign, USA*

**09.30-10.00**

Efficient Manufacturing of Thermoset Polymers and Composites based on Frontal Polymerization

**Richard J. Spontak,** *North  
Carolina State University,  
United States*

**10.00-10.30**

Advances in Nanocellulose Bionanoparticles: From Analysis to Application

**Samit Roy,**  
*University of Alabama,  
United States*

**10.30-11.00**

An Experimental-Analytical Investigation of Particle Size Effect on the Mode I Fracture Behavior of Polymer/Graphene Nanocomposites

**Group Photo & Refreshment Break (11:00-11:20)**

### Technical Session-I

**Session Chair:**

**Samit Roy,** *University of Alabama, United States*

**Sam-Shajing Sun,**  
*Norfolk State University,  
United States*

**11:20-11:40**

A Thermoelectric Polymer Field-Effect Transistor via Iodine-Doped P3HT

**Clara Casado-Coterillo,**  
*Universidad de Cantabria,  
Spain*

**11:40-12:00**

Mixed Matrix Membranes Using Porous Organic Polymers (POPs): An opportunity for sustainable membrane materials in CO<sub>2</sub>/CH<sub>4</sub> separation.

**Luisa María Valencia Liñán,**  
*University of Cádiz, Spain*

**12:00-12:20**

Chemical evolution of polymers for Additive Manufacturing under electron beam irradiation

**Jonas Jose Perez Bravo,**  
*University Carlos III of Madrid, Spain*

**12:20-12:40**

Evolution of the Solid-State Modification for Thermoplastic Polymers

**Alejandro Gonzalez-Martinez,**  
*Universidad de Granada, Spain*

**12:40-13:00**

Microbial population and PHA accumulation performance in a granular Sequential bath bioreactor amended with cooking oil

**Lunch Break @ Restaurant (13:00-14:00)**

## Technical Session-II

### Session Chairs:

**Gregory B. McKenna,** *NC State University, United States*  
**Marius Orlowski,** *Virginia Tech, United States*

**Ioan Szava,**  
*Transilvania University of Brasov, Romania*

**14:00-14:20**

Improving Additive Manufacturing Efficiency Through Prototype-Model Correlation Using Modern Dimensional Analysis

**Alan W. Decho,** *University of South Carolina, United States*

**14:20-14:40**

The Plastisphere and Microbial Biofilms: A Colonization and Transport Vehicle for Pathogens

**Sharon Kao-Walter,**  
*Blekinge Institute of Technology, Sweden*

**14:40-15:00**

Simplified Characterization of Anisotropic Yield Criteria for an Injection-Molded Polymer Material

**Wouter M. Nielen,**  
*EMI Twente BV, Netherlands*

**15:00-15:20**

Organic Solvent Nanofiltration for Catalytic Recycling of Plastic Residues

**Marius Orlowski,**  
*Virginia Tech, United States*

**15:20-15:40**

Advancing Electrical Conductivity in Nanometer-Thin Polymer Electrodes with Novel Methods

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**Ruslan Shakurov**, *Federal  
Medical Biological Agency,  
Russia*

**15:40-16:00**

Branched and hyperbranched  
polymers as a material for modifying  
the sensitive layer of photonic crystal  
surface mode biosensor

**Refreshment Break (16.00-16:20)**

**Day 1 - Concludes**

## Day-2, July 12, 2024

### Meeting Hall - II

**Moderator:** Huba Marton, *University of Warwick, United Kingdom*

#### Keynote Talks

**Gregory B. McKenna,**  
*NC State University,  
United States*

**09:40-10:10**

Deep Glassy State Behavior: From Ancient Ambers to Vapor Deposited Polymers. What Does an Ultra-Low Fictive Temperature Mean?

**David Edward Budil,**  
*Northeastern University,  
United States*

**10:10-10:40**

An electron spin resonance method to determine the fractal dimension of diffusion within conducting and permeable polymer membranes

#### Technical Session-III

##### Session Chairs:

**Philippe H. Geubelle,** *University of Illinois Urbana-Champaign, United States*  
**David Edward Budil,** *Northeastern University, United States*

**Andreas D. Wieck,**  
*Ruhr University Bochum,  
Germany*

**10:40-11:00**

Influence of the dipole moment on the increase in thermal conductivity of thin films functionalized with azo dye

**Nan Yao,**  
*Princeton University,  
United States*

**11:00-11:20**

Manipulating a Single Chemical Bond with controlled sub-nanomechanical forces

#### Refreshment Break (11.20-11:40)

**Katherina Fernandez  
Elgueta,**  
*University of concepcion,  
Chile*

**11:40-12:00**

Alginate hydrogels reinforced with rGO and TA with antibacterial activity

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**Huba Marton,**  
*University of Warwick,  
United Kingdom*

**12:00-12:20**

Screening of hydrophilic polymers reveals broad activity in protecting phages during cryopreservation

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**Marwa Faisal,**  
*University of Copenhagen,  
Denmark*

**12:20-12:40**

Thermal and structural properties of binary and ternary blends of amylose and polylactic acid blends

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**Pamela Hidalgo,,**  
*Universidad Catolica De  
Temuco, Chile*

**12:40-13:00**

High-Value Compounds from Biomass Pyrolysis and Their Application in Epoxy Resin Composites

**Lunch Break @ Restaurant (13:00-14:00)**

**Day-2 Conclusion and Closing Remarks**

## VIRTUAL SESSION

**4<sup>th</sup> Global Conference On**  
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**AND COMPOSITES**  
**July 11 - 12, 2024 at Paris, France**



Join Zoom Meeting

Meeting ID: 820 3534 7172

Pass code: 194441



**Day-2**  
**(Virtual Through ZOOM) Paris, France Time**

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|-----------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Xiao-Hong Li,</b><br><i>TianJin University, China</i>                                                  | <b>12:00-12:20</b> | 3D printing of injury-preconditioned secretome/collagen/heparansulfate scaffolds for neurological recovery after traumatic braininjury in rats                            |
| <b>Polphat Ruamcharoen,</b><br><i>Songkhla Rajabhat University, Thailand</i>                              | <b>12:20-12:40</b> | Promising eco-friendly polyurethane foams derived from modified biomaterials                                                                                              |
| <b>Jan De Beenhouwer,</b><br><i>University of Antwerp, Belgium</i>                                        | <b>12:40-13:00</b> | Advances in X-ray Phase Contrast imaging and its applications                                                                                                             |
| <b>Fatimah Ahmed Albarakati,</b><br><i>University of Leeds and Umm Al-Qura University, United Kingdom</i> | <b>13:00-13:20</b> | Effect of Water on the Dissolution of Flax Fiber Bundles in the Ionic Liquid 1-ethyl-3-methylimidazolium acetate                                                          |
| <b>Francesca Lionetto,</b><br><i>University of Salento, Italy</i>                                         | <b>13:20-13:40</b> | Label-free model nanoplastics derived from polyethylene terephthalate                                                                                                     |
| <b>Patane Giuseppe Tancredi,</b><br><i>University of Messina, Italy</i>                                   | <b>13:40-14:00</b> | Strategy and optimization of biochemical green procedures for the production and food packaging application of Class III and IV bioplastic functionalized with flavonoids |
| <b>Rakel Herrero,</b><br><i>NAITEC, Spain</i>                                                             | <b>14:00-14:20</b> | Improving Printability of Polytetrafluoroethylene (PTFE) with the Help of Plasma Pre-Treatment for Printed Electronics Applications                                       |
| <b>Olia Bouzid,</b><br><i>Universidad politécnica de Madrid, Spain</i>                                    | <b>14:20-14:40</b> | Phase behavior of athermal colloidal mixtures of chains and monomers                                                                                                      |

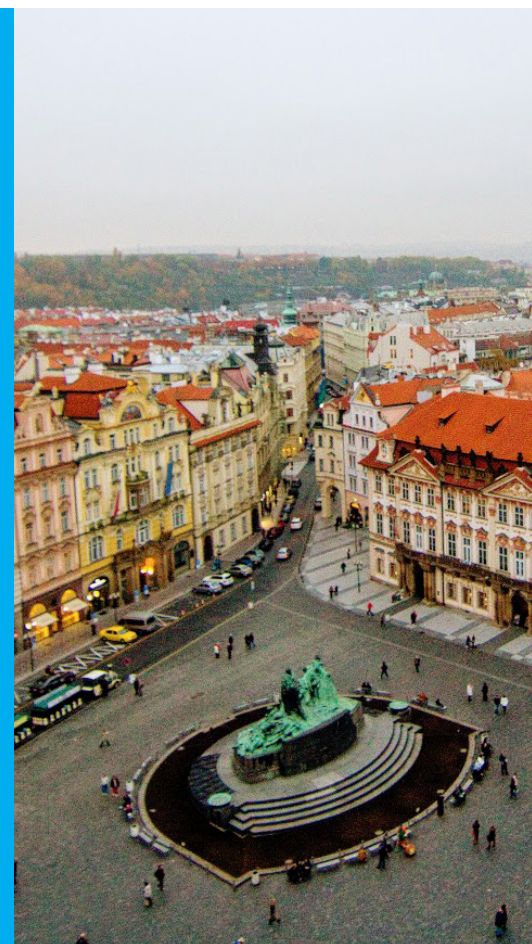
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|----------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Laura Castanon Jano,</b><br><i>University of Cantabria,<br/> Spain</i>                    | <b>14:40-15:00</b> | Determination of mechanical and thermal properties of 3D printed PLA and PETg mixed with by-products powder                                                  |
| <b>Clarisse Ribeiro,</b><br><i>University of Minho,<br/> Portugal</i>                        | <b>15:00-15:20</b> | Electroactive Piezoelectric Scaffolds: Advancing Cancer Therapy and Tissue Regeneration in Sarcomas                                                          |
| <b>Ibrahim Mohammed Inuwa,</b><br><i>Kaduna State University,<br/> Nigeria</i>               | <b>15:20-15:40</b> | Mechanical and Thermal Properties of Hybrid Rice Husk/ Kenaf Reinforced Polyethylene Terephthalate (PET)/High-Density Polyethylene (HDPE) Blends/ Composites |
| <b>Azzouz Zahra,</b><br><i>University of Bejaia, Algeria</i>                                 | <b>15:40-16:00</b> | Biodegradation and saccharification of lignocellulose waste by fungal enzymatic synergies produced in solid state fermentation                               |
| <b>Priscila Tavares Teles Araujo,</b><br><i>Federal University of Rio de Janeiro, Brazil</i> | <b>16:00-16:20</b> | Influence of Tri-Hydrated Alumina on the Mechanical Strength of Glass Fiber Reinforced Polymers                                                              |
| <b>Amy Leigh Klocko,</b><br><i>University of Colorado Springs, United States</i>             | <b>16:20-16:40</b> | Genetic Containment for Molecular Farming                                                                                                                    |
| <b>Muhammad Rabnawaz,</b><br><i>Michigan State University, United States</i>                 | <b>16:40-17:00</b> | Degradable Polymeric Waxes for Paper Coating Applications                                                                                                    |
| <b>Sridhar Komarneni,</b><br><i>The Pennsylvania State University, United States</i>         | <b>17:00-17:30</b> | <b>Keynote Talk:</b> Polymer-Clay nanocomposites for selective anion removal                                                                                 |
| <b>Aleksander Czekanski,</b><br><i>York University, Canada</i>                               | <b>17:30-17:55</b> | <b>Plenary Talk:</b> Multiscale Modeling of Additive Manufacturing Composite Parts                                                                           |

*We wish to see you again at*

**5<sup>th</sup> Global Conference On**  
**POLYMERS, PLASTICS**  
**& COMPOSITES**  
**June 25-26, 2025 at Prague, Czech Republic**

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