



الجمعية المصرية لعلم وتكنولوجيا البلمرات



الجامعة الألمانية بالقاهرة

**The Egyptian Society of Polymer Science and Technology**  
**[ESPST]**

**In collaboration with**  
**The German University in Cairo**  
**[GUC]**

# **14<sup>th</sup> Arab International Conference on Polymer Science and Technology**

**September 7 - 9, 2024**

**GUC, Egypt**

## **Conference Program**

**Under the Auspices of**  
**Prof. Dr. Ashraf Mansour**

*The Chairman of the Board of Trustees at the GUC*

**Chairmen of the Conference**

**Prof. Dr. Abbas A. Yehia**

*President of ESPST*

**Prof. Dr. Yasser Hegazy**

*President of GUC*

**Honorary Chairman**

**Prof. Dr. Mahmoud A. Abdel-Ghaffar**

**Co-chairman of the Conference**

**Prof. Dr. Mohamed Nader Ismail**

**Secretary General of the Conference**

**Prof. Dr. Samir Kamel El-Zayati**



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### **Egyptian Society of Polymer Science & Technology (ESPST)**

Egyptian Society of Polymer Science & Technology (ESPST) is nongovernmental organization established in 1988 under the number of 847 and reconciled its conditions in 2003 at ministry of Social Affairs. The members of the Society are 650 affiliated to Research Centers, Universities and Industrial bodies.

#### **Main activities of ESPST**

1. Establishment of scientific links and interactions among scientists at Universities, Research Centers, Institutes, Industrial Sectors and Engineers in Egypt and World Wide in the field of polymeric materials.
2. Exchanging experiences between the scientists in all around the world in the field of polymer science, engineering and technology.
3. Organizing international conferences every 2 years in the field of polymer science and technology. The society has organized 12 international conferences in different regions in Egypt, Cairo, Mansoura, Luxor-Aswan, El-Fayoum... etc. since 1989 up till now.
4. Increasing the links between the members and their families through organizing annual meetings and carrying out trips and tours.
5. Organizing seminars in the field of polymeric materials for the scientists and industry members to follow the developments in science and technology.
6. Trying to solve the problems arising from the use of the polymeric materials e.g. recycling of polymeric wastes (e.g. rubber, plastics and old newsprints) for clean environment.
7. Cooperation with other scientific societies in Egypt and abroad.

#### **Postal address of ESPST**

Egyptian Society of Polymer Science and Technology  
Polymers and Pigments Department - National Research Centre  
El-Bohouth Street, Dokki, Giza 12622, Egypt  
Tel and Fax : (202) 33355146



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### 14<sup>th</sup> Arab International Conference on Polymer Science and Technology AICPST@2024

This conference is organized by the Egyptian Society of Polymer Science and Technology [ESPST] in collaboration with the German University in Cairo (GUC). This conference aims to stimulate the interaction between workers in the field of polymers and new materials science in Egypt and all around the world and to exchange the scientific expertise in this important and vital area. The themes of this scientific gathering include multiple areas of science and technology of polymers and new materials and their various applications in industry, agriculture, medicine etc.

Chairman and organizing committee of the conference thank all participants, speakers and sponsors for contributing to the high scientific level of the conference.

**Prof. Dr. Abbas A. Yehia**

**Chairman of the Conference**

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## Conference Program

### Day one [Saturday, 7 September 2024]

9.00 - 9.30 am	Registration
9.30 - 10.00 am	Welcome and Opening Ceremony Prof. Dr. Ashraf Mansour <i>The Chairman of the Board of Trustees at the GUC</i> Prof. Dr. Abbas A. Yehia <i>President of ESPST</i> Prof. Dr. Yasser Hegazy <i>President of GUC</i>

### Session I: Polymers Physics and Modeling

Chairmen	Prof. Dr. Abbas A. Yehia and Prof. Dr. Yasser Hegazy
10.00 -10.45 am	PL-1 <u>Prof. DI Dr. Gernot Wallner</u> Development and characterization of polymeric adhesives and hybrid laminates for solar energy technologies and electric mobility
10.45- 11.15 am	KNL-1 <u>Prof. Dr. Gamal Turkey</u> Dielectric spectroscopy: Fundamentals and Applications
Oral presentation, 20 min. each (15 min + 5 min Disc.)	
11.15 - 11.35 am	O-1 <u>Dr. Ali Samy Abouhaswa</u> Linear and nonlinear optical characterization of boro-tellurite glasses reinforced with ZrO <sub>2</sub>
11.35- 11.55 am	O-2 <u>Prof. Dr. Youssef M. Hammam</u> Nanomaterials for Solar Cell Efficiency Improvement: A Review
11.55- 12.15 pm	O-3 <u>Dr. Hassan M. M. Mustafa</u> Nanostructured Coating for Enhanced Hydrogen Storage Efficiency
12.15 - 12.45 pm	Coffee Break



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## Session II: Polymer Composites for Various Applications

Chairmen	Prof. DI Dr. Gernot Wallner and Prof. Dr. Ahmed Abdel Aziz
12.45- 1.30 pm	PL-2 <u>Prof. Abbas A. Yehia</u> The Role of Clay Hybrid -Nanocomposites in Rubbers
1.30- 2.15 pm	PL-3 <u>Dr. El-Sayed Sabry</u> The Impact of Primary Plastic Production on Climate Change
Oral presentation, 20 min. each (15 min + 5 min Disc.)	
2.15- 2.35 pm	O-4 <u>Dr. Ahmed Showman, representative of SHOUMAN Group</u> Barrier film development in the MENA region
2.35- 2.55 pm	O-5 <u>Prof. Dr. Tayseer Zidan</u> Novel antioxidants based on polymerized 2, 2, 4-trimethyl-1,2-dihydroquinoline (TMQ) for styrene-butadiene rubber composites
3.00- 4.00 pm	Lunch

## Session III: Posters

Chairmen	Dr. El-Sayed Sabry and Prof. Dr. Mohamed N. Ismail
P-1	Surface Passivation of Carbon Dots for Tunable Biological Performance <u>Mary M. Mikhail</u> , Hanan B. Ahmed, Amira E.M. Abdallah, Mahmoud El-Shahat, Hossam E. Emam
P-2	Comparative Study on Newly Prepared Copolymers with their Nanocomposites as a Flow Enhancer for Lubricating Oils <u>El-Segaey Abeer A.</u> , Arafa Enas I., and Al-Shafey Hussin I.
P-3	Synthesis and Evaluation of an Azo-Linked Covalent Organic Framework as a Cathode Material for Organic Lithium-Ion Batteries <u>Farrag, H. H.</u> , Grignon, E., Battaglia, A. M., Liu, J. T., Seferos, D. S.
P-4	Novel compounds of uracil as natural rubber antioxidants <u>E.M.A. Yakout</u> , S.H. El-Sabbagh
P-5	Preparation and biomedical applications of novel cationic cellulose derivatives <u>Ahmed Salama</u> and Peter Hesemann



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- P-6 Evaluation and characterization of some hybrid perovskite PRV nanocomposites based on polyaniline  
*Noha Elhalawany, Maher M. Saleeb, Magdy K. Zahran*
- P-7 Utilising impregnated multiwall carbon nanotubes for solid phase extraction and preconcentration of some heavy metals from water samples  
Ragaa El Sheik, Ayman A. Gouda, *Fatma A. Ibraheem*, Mohamed Elgafary
- P-8 Substituted benzimidazole metal complexes as new photo-stabilizers for rigid PVC: Synthesis, spectral and DFT studies  
*Mohamed A. El Awady*, Mostafa M.H. Khalil, Gehad G, Mohamed, Abdel Naby M. Salem
- P-9 Radiation shielding performance of Magnetite, Rutile, Ilmenite, and Concrete NBS as common natural minerals: A comparative study  
Islam M. Nabil, Norah A.M. Alsaif, Nada Alfryyan, Hanan Al-Ghamdi, *Y.S. Rammah*, Atef El-Taher
- P-10 Zeolitic Polyacrylamide Hydrogel for Wastewater Decolorization  
*Elsebai B.*, Ghanem A., Abdelmonaim S., Badawy A., Abdelrahman H., Khalil M.
- P-11 Using Eco-Friendly Nano-Polymers in Industrial Water Treatment  
*Nada Yahia Mohamed*, Ehsan Mohamed Reda, Yasser Ibrahim Abd AlHameed, Nabil Mahmoud AbdEl-Moneim
- P-12 Preparation and Characterization of Copper Nanoparticles by Green Synthesis Method and its Application of Wastewater Treatment  
*Marwa M. El-Tyieb*, Nancy Goda, *Hussein. M. Ahmed*
- P-13 Utilization of membrane filtration approach for preconcentration-separation of some heavy metal ions in environmental samples prior to their flame atomic absorption spectroscopic determinations  
Ragaa El Sheik, *Ayman A. Gouda*, *Fatma A. Ibraheem*, *Mohamed Elgafary*, Naif. A. Badahdah, Muneer E. Alzuhiri, Ali H. Maghrabi, Asim L. Jilani
- P-14 New Applications of Propylene-based Elastomers in 3D Printing  
*Mohamed Darweesh*





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- P-15 Synthesis of biodegradable polymer based on polyethylene and polyvinyl alcohol in the presence of starch  
*El-Sayed Negim, Orazalin Z.K., Lyazzat Bekbayeva, Gulzhakhan Yeilgbayeva, Eman H. Ahmed*
- P-16 Metal-organic Framework/Fabrics for Environmental Applications  
*Hossam Elsayed Emam*
- P-17 Hydrothermal Technique for Direct Incorporation of Palladium Nanoparticles in Multi-Finishing of Viscose Textile  
*Sahar A. El-Kholy and Hossam Elsayed Emam*
- P-18 Smart Textiles by Modification with Metal/Metal Oxide Nanoparticles  
*Hanan B. Ahmed and Hossam E. Emam*
- P-19 Nanoparticles of Poly (Lactic-co-Glycolic Acid) with Rifampicin and Vitamin C for Combined Treatment  
*Daribay A.T., Galieva A.R., Tazhbayev E.M.*
- P-20 Renovation of Backwashing Wasted Water via a Simple Sand Infiltration System  
*Hussein I. Abdel-Shafy, Amr M. Ibrahim, Mona S.M. Mansour, and Mohamed El-Khateeb*
- P-21 Heavy Metal Distribution in EL-Salam Canal, Egypt  
*M.S.M. EL-Bady, Hussein M. Ahmed, Adel M.A. Elhdad, Hussein I. Abdel-Shafy, M.A. El-Khateeb*
- P-22 Ecological Risk Assessment of Bottom Sediments of Bardawil Lagoon During the Past Ten Years, North of Sinai, Egypt  
*M.S.M. EL-Bady, Hussein M. Ahmed, Adel M.A. Elhdad, El-Shahat H.A. Nashy, M.A. El-Khateeb*
- P-23 Optimizing Electrospun (PVA/GO) Coated Antenna for Enhancing Microwave Ablation Efficacy in Liver Cancer  
*Mohamed S. Abdo, Hassan M. Mustafa, Ahmed Fouly, Mostafa Awaid, Hany S. Abdo*
- P-24 Enhancing the optoelectronic properties of poly(3-hexylthiophene) films by introducing aluminum phthalocyanine chloride  
*E.M. El-Menyawy, L.M. El-Khalawany, T.A. Zidan, M.A. Farag, I.T. Zedan*



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## Day Two [Sunday, 8 September 2024]

### Session III: Polymer Synthesis and Functional Polymers

Chairmen		Prof. Dr. Ildoo Chung and Prof. Dr. Samir Kamel
10.00 - 10.45 am	PL-4	<u>Prof. Dr. Peter Hesemann</u> Inorganic Polymerization for the Synthesis of Functional Materials
10.45- 11.30 am	PL-5	<u>Prof. Dr. Mahmoud A. Abd El-Ghaffar</u> Conducting Polymers and Biopolymers as Multifunctional Materials for Industrial and Medical Applications
11.30- 12.00 pm	KNL-2	<u>Prof. Dr. Elsayed Negim</u> From Research Ideas to Commercialization
12.00- 12.30 pm		Coffee Break

### Session IV: Natural and Synthetic Biopolymers for Various Applications

Chairmen		Prof. Dr. Erkeblan M. Tazhbayev and Prof. Dr. Elsayed Negim
12.30- 1.00 pm	KNL-3	<u>Prof. Dr. Ildoo Chung</u> Biodegradable and thermoresponsive porous micro/nanospheres
1.00- 1.30 pm	KNL-4	<u>Prof. Dr. Samir Kamel</u> Cellulose as a sustainable and advanced material
Oral presentation, 20 min. each (15 min + 5 min Disc.)		
1.30- 1.50 pm	O-6	<u>Dr. Lyazzat Bekbayeva</u> Itaconic acid-g- polyethylene/ biodegradable starch blends for packaging applications
1.50- 2.10 pm	O-7	<u>Dr. Altynay Kaldybayeva</u> Supramolecular complexes of inclusion of imidazole derivatives



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- 2.10- 2.30 pm      O-8      **Prof. Dr. Mona Abdel Rehim**  
Lignin valorization as high-value bio-additive for  
multifunctional nanocomposites
- 2.30- 2.50 pm      O-9      **Dr. Ahmed Ghanem**  
Composite Biopolymeric Free-standing Films for Food  
Packaging Applications
- 3.00- 4.00 pm      Lunch
- 4.00- 4.20 pm      O-10      **Dr. Mohamed Y. A. Abdelwahab**  
Sustainable Biopolymer Membranes for Biodiesel Separation  
Processes
- 4.20- 4.40 pm      O-11      **Dr. Mohamed S Kishta**  
Allied Selenium Nanoparticles with Silymarin/ Silybin  
Overcome Lipopolysaccharide-induced Inflammatory  
Response in Bone Marrow-Derived Mesenchymal Stem Cells
- 4.40- 5.00 pm      O-12      **Dr. Khaled Sallam**  
The Role of Coated Tubes in Radioimmunoassay



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## Day Three [Monday, 9 September 2024]

### Session V: Manufacturing Technology and Applications

Chairmen		Prof. Dr. Attia Mahmoud Attia and Dr. Eng. Moustafa kamel Hadhoud
9.30 - 10.15 am	PL-6	<u><i>Dr. Eng. Salah El-Begawy</i></u> The Business Politics of Nanomaterials Mass Production: Conception and Motivities
10.15 - 10.45 am	KNL-5	<u><i>Prof. Dr. Abou El-Fettouh A. Abd El-Hakim</i></u> Technology of Plastic Recycling
10.45- 11.15 am	KNL-6	<u><i>Prof. Dr. Ezzeldin Metwalli</i></u> In situ X-ray and neutron scattering studies of functional polymeric materials
Oral presentation, 20 min. each (15 min + 5 min Disc.)		
11.15- 11.35 am	O-13	<u><i>Prof. Dr. Dalal Alnajjar</i></u> Nanotechnology Applications in Process Enhancements
11.35- 11.55 am	O-14	<u><i>Dr. Rozan Kamal</i></u> Innovative Methods for Hydrogen Gas Production, Storage, and Transportation Consideration: A review
12.00- 12.30 pm		Coffee Break

### Session VI: Polymer Composites for Environmental Applications

Chairmen		Prof. Dr. Peter Hesemann and Prof. Dr. Mahmoud A. Abd El-Ghaffar
12.30- 1.00 pm	KNL-7	<u><i>Dr. Eng. Moustafa kamel Hadhoud</i></u> Green Polymer Composites Engineering
1.00- 1.30 pm	KNL-8	<u><i>Prof. Dr. Vyas Shweta</i></u> Synthesis and Characterization of Lignocellulose-based Nano-sorbent for Removal of Some Heavy Metal Ions from Wastewater



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- 1.30- 2.00 pm      KNL-9      **Prof. Dr. Attia Mahmoud Attia**  
Future trends in enhanced oil recovery using chemical techniques  
Oral presentation, 20 min. each (15 min + 5 min Disc.)
- 2.00- 2.20 pm      O-15      **Prof. Dr. Azza Khalifa**  
Water Network Minimization Using Regeneration-Reuse and  
Regeneration-Recycle Methods with Multi-Contaminants
- 2.20- 2.40 pm      O-16      **Prof. Dr. Zeinab Elbhnsawi**  
Harnessing Water Hyacinth as a Sustainable Dye Adsorbent  
through Acid Activation for Water Remediation
- 2.40- 3.00 pm      O-17      **Dr. Amira Hassan**  
Development and Characterization of Recycled PET  
Nanofibers for Enhanced Water Purification Applications
- 3.00- 4.00 pm      Lunch
- 4.00- 5.00 pm      Tour inside the Campus of GUC

### **Session VII: Closing and Recommendation**

- Chairmen      Prof. Dr. Abbas A. Yehia and Prof. Dr. Yasser Hegazy
- 5.00 - 5.30 pm      Closing and Recommendations
- 8.00- 10.00 pm      Gala Dinner - Nile cruise (Optional)  
Fees: 15 \$ for Non-Egyptians  
250 L.E. for Egyptians



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7-9 سبتمبر 2024

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