

List of  
*Poster presentations*



**Organization:**  
**University of Ioannina**

Department of Materials  
Science & Engineering

Department of Chemistry

Department of Physics

Under the auspices:  
**Hellenic Polymer Society**

European Polymer Federation

**12<sup>th</sup>**  
**Hellenic Polymer Society**  
**International Conference**

**2018**

**30** September - **3** October  
**Ioannina, Greece**  
Main Ceremony Hall, University of Ioannina:  
**“Georgios Mylonas”**

[www.polyconf12.gr](http://www.polyconf12.gr)

## 1. Recent Developments in Polymer Synthesis and Characterization Methods

### POSTER 1.1

#### **Polymerization Kinetics of N-Butyl Methacrylate in the Presence of Graphene Oxide Prepared by Two Different Oxidation Methods with or without Functionalization**

**Dimitris Achilias, Ioannis Tsagakias, Symela Papadopoulou**

*Department Of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece*

### POSTER 1.2

#### **Synthesis and Molecular Characterization of Polystyrenes Carrying Pendant Tempo Radicals**

**Polykseni Aggelopoulou, Georgios Sakellariou**

*Industrial Chemistry Laboratory, Department of Chemistry, National & Kapodistrian University of Athens, Panepistimiopolis Zografou, 15 771 Athens, Greece*

### POSTER 1.3

#### **Synthesis and Characterization of New High Tg Biobased Copolyesters from Isosorbide, 1,6-Hexanediol and 2,5-Furandicarboxylic Acid**

**Nina Maria Ainali<sup>1</sup>, Eleni Agapiou<sup>1</sup>, Nejb Kasmi<sup>1</sup>, Dimitrios N. Bikiaris<sup>1\*</sup>, George Z. Papageorgiou<sup>2</sup>**

<sup>1</sup>*Laboratory of Chemistry and Technology of Polymers and Dyes, Chemistry Department, Aristotle University of Thessaloniki, Greece*

<sup>2</sup>*Chemistry Department, University of Ioannina, P.O. Box 1186, 45110 Ioannina, Greece*

### POSTER 1.4

#### **Association Effects of End-Functionalized Polymers Interacting Through Hydrogen Bonds**

**Spyridoula-Lida Bitsi<sup>1</sup>, Salvatore Conzanzo<sup>2</sup>, Dimitris Vlassopoulos<sup>2</sup>, Anastasia Nika<sup>3</sup>, Margarita Chatzichristidi<sup>1</sup>, Marinos Pitsikalis<sup>3</sup>**

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### POSTER 1.5

#### **The 1-phenyltetrazole-5-thiyl Radical in the Photopolymerization of MMA**

**Christos Christou<sup>1</sup>, Athanasia Agora<sup>1</sup>, Michael G. Siskos<sup>\*1</sup>, Antonios K. Zarkadis<sup>1</sup>**

<sup>1</sup>*Department of Chemistry, University of Ioannina, 45110, Ioannina*

### POSTER 1.6

#### **Raft Synthesis and Self-Assembly of Amphiphilic Block Copolymers Based on Poly(N-Butyl Acrylate)**

**Aggeliki Chroni, Stergios Pispas**

*Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, 48 Vassileos Constantinou Ave., 11635 Athens, Greece*

### POSTER 1.7

#### **Synthesis and Characterization of Well-Defined Single Chain Polymer Nanoparticles Through Thermal Cycloaddition and Friedel-Crafts Alkylation Reactions**

**Periklis Didaskalou, Anna Boura, Kleio Theodoraki, Kleonicky Sioziou, Georgios Sakellariou**

*Industrial Chemistry Laboratory, Department of Chemistry, National & Kapodistrian University of Athens Panepistimiopolis Zografou, Athens 157 71, Greece*

#### POSTER 1.8

##### Synthesis of New Eco-Friendly Copolyesters from Fully Renewable Resources: Poly( $\epsilon$ -Caprolactone-Co-Hexamethylene 2,5-Furandicarboxylate)

Nejib Kasmi<sup>1</sup>, George Z. Papageorgiou<sup>2</sup>, Dimitrios N. Bikiaris<sup>1</sup>

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<sup>2</sup>Chemistry Department, University of Ioannina, P.O. Box 1186, 45110 Ioannina, Greece

#### POSTER 1.9

##### Dielectric Behavior and Functionality in Epoxy Resin/Barium Oxide Composite Materials

A.C. Konstantinou\*, A. Sanida, A.C. Patsidis, G.C. Psarras

Smart Materials & Nanodielectrics Laboratory, Department of Materials Science, School of Natural Sciences, University of Patras, Patras 26504, Greece

#### POSTER 1.10

##### Synthesis and Characterization of Well-Defined Miktoarm Star Polymers, (PS)<sub>n</sub>(PEO)<sub>n</sub>

Emmanouil Mygiakis<sup>1</sup>, Dimitrios Chatzogiannakis<sup>2</sup>, Emmanouil Glynos<sup>2</sup>,

Georgios Sakellariou<sup>3</sup>

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<sup>3</sup> Industrial Chemistry Laboratory, Department of Chemistry, National And Kapodistrian University of Athens, Athens, Greece

#### POSTER 1.11

##### Complex Architecture Asymmetric Copolymers via Anionic Polymerization: Synthesis, Characterization and Self-Assembly

Christos Ntaras<sup>1</sup>, Apostolos Avgeropoulos<sup>1</sup>, Weichao Shi<sup>2</sup>, Andrew L. Hamilton, Kris T. Delaney, Nathaniel A. Lynd, Edward J. Kramer, Glenn H. Fredrickson<sup>2</sup>,

Quentin Demassieux<sup>3</sup>, Constantino Creton<sup>3</sup>

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<sup>3</sup>Laboratory of Soft Matter Science and Engineering, ESPCI Paristech-CNRS-UPMC, Paris, France

#### POSTER 1.12

##### Complex Star Architectures of Well-Defined Polyethylene-Based Co/Terpolymers

Konstantinos Ntetsikas<sup>1</sup>, George Zapsas<sup>2</sup>, Panayiotis Bilalis<sup>2</sup>, Yves Gnanou<sup>2</sup>, Edwin L. Thomas<sup>3</sup>, Nikos Hadjichristidis<sup>2</sup>

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<sup>2</sup> King Abdullah University of Science And Technology (KAUST)

<sup>3</sup> Rice University, Houston

#### POSTER 1.13

##### Synthesis, Molecular and Morphological Characterization of Linear and Miktoarm Polystyrene / Polydimethylsiloxane Copolymers

Christos Pantazidis<sup>1</sup>, Apostolos Avgeropoulos<sup>2</sup>, Georgios Sakellariou<sup>1</sup>

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<sup>2</sup> Department of Materials Science And Engineering, University of Ioannina, 45 110 Ioannina, Greece

#### POSTER 1.14

##### Double-Hydrophilic Semi-Interpenetrating Hydrogels with Tunable and Predictable Mechanical Performance

Georgia Papapaskeva<sup>1</sup>, Chrysovalantis Voutouri<sup>1</sup>, Vasiliki Gkretsi<sup>1,2</sup>, Mariliz Achilleos<sup>1</sup>, Ivo Safarik<sup>3,4</sup>, Kristyna Pospiskova<sup>4</sup>, Triantafyllos Stylianopoulos<sup>1</sup> and Theodora Krasia-Christoforou<sup>1\*</sup>

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<sup>4</sup>Regional Centre of Advanced Technologies and Materials, Palacky University, Slechtitelu 27, 783 71 Olomouc, Czech Republic

#### POSTER 1.15

##### Synthesis and Characterization of Well-Defined Single Chain Polystyrene Nanoparticles

Nikos Patelis<sup>1</sup>, Marta Cutrano<sup>2</sup>, Daniele Parisi<sup>2</sup>, Dimitris Vlassopoulos<sup>2</sup>, George Sakellariou<sup>1</sup>

<sup>1</sup>Industrial Chemistry Laboratory, Department of Chemistry, National & Kapodistrian University of Athens, Athens, Greece

<sup>2</sup>Institute of Electronic Structure And Laser, Foundation For Research And Technology

#### POSTER 1.16

##### Thioesters as Type I Photoinitiators: The Role of the Chromophore

Aristea Pavlou<sup>1</sup>, Michael G. Siskos\*<sup>1</sup>, Antonios K. Zarkadis<sup>1</sup>

<sup>1</sup>Department of Chemistry, University of Ioannina, 45110, Ioannina

#### POSTER 1.17

##### Synthesis and Characterization of Well-Defined Ring Polystyrenes

Nikolaos Patelis, Georgios Sakellariou

Chemistry Department, National and Kapodistrian University of Athens, Athens, Greece

#### POSTER 1.18

##### PnBA-b-PNIPAM-b-PDMAEA pH- and Thermo- Responsive Triblock Terpolymers via Raft Polymerization and their Properties in Aqueous Solutions

Athanasios Skandalis, Stergios Pispas

Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, 48 Vassileos Constantino u Ave., 11635 Athens, Greece

#### POSTER 1.19

##### Linear and Star Block Copolymers with High "Flory-Huggins" (X) Interaction Parameter

Maria-Malvina Stathouraki<sup>1</sup>, Apostolos Avgeropoulos<sup>2</sup>, Georgios Sakellariou<sup>3</sup>

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#### POSTER 1.20

##### Double Semi-Crystalline Poly(Vinylidene Fluoride)-Based Diblock Co- and Triblock Ter-Polymers

George Zapsas, Yogesh Patil, Panayiotis Bilalis, Yves Gnanou, Nikolaos Hadjichristidis

King Abdullah University of Science and Technology (KAUST), Thuwal 23955, Saudi Arabia

## POSTER 1.21

### Metallocene Mediated Cationic Polymerization of Vinyl Ethers and Chemical Modification for the Synthesis of Graft Copolymers

Stavros Zouganelis, Ioannis Goulas, Ioannis Choinopoulos, Marinos Pitsikalis

*Industrial Chemistry Laboratory, Department Of Chemistry, National And Kapodistrian University Of Athens, Athens, Greece*

## 2. Polymer Physics

### POSTER 2.1

#### Crystallization and Molecular Dynamics of Primary Alcohols Confined within Nanoporous Alumina

Antonela Ananiadou<sup>1</sup>, Martin Steinhart<sup>2</sup>, George Floudas<sup>1</sup>

<sup>1</sup> *Department of Physics, University of Ioannina, 45110 Ioannina, Greece*

<sup>2</sup> *Institut Für Chemie Neuer Materialien, Universität Osnabrück, D-49069 Osnabrück, Germany*

### POSTER 2.2

#### Influence of Chemical Environment in Light Induced Patterning in Polydiene Solutions

Athanasios Bogris<sup>1</sup>, Nikolaos Burger<sup>2</sup>, George Fytas<sup>3</sup>, Benoit Loppinet<sup>3</sup>

<sup>1</sup> *Institute of Electronic Structure and Laser, Foundation for Research and Technology*

<sup>2</sup> *University of Crete, Crete, Greece*

<sup>3</sup> *Iesl-Forth*

### POSTER 2.3

#### Kinetics of Light Induced Patterning in Polydiene Solutions; Influence of Dissolved O<sub>2</sub>

Nikolaos-Athanasios Burger, Athanasios Bogris, George Fytas, Benoit Loppinet

*Institute of Electronic Structure and Laser (IESL)-FORTH, Greece*

### POSTER 2.4

#### Effect of Confinement on Chain Conformations

Kiriaki Chrissopoulou<sup>1</sup>, Hellen Papananou<sup>1,2</sup>, Anastassia N. Rissanou<sup>3,4</sup>, Vagelis Harmandaris<sup>3,4</sup>, Konstantinos S. Andrikopoulos<sup>5</sup>, George A. Voyiatzis<sup>5</sup>, Spiros H. Anastasiadis<sup>1,2</sup>

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### POSTER 2.5

#### Tapered Block Copolymers: Effect of Interfacial width

Eftichios Galanos<sup>1</sup>, Holger Frey<sup>2</sup>, George Floudas<sup>1</sup>

<sup>1</sup> *Department of Physics, University of Ioannina, 45110 Ioannina, Greece*

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### POSTER 2.6

#### Jamming of Multi-Arm Star Polymers Viewed as Model Soft Hairy Colloids

Leo GURY<sup>1,4</sup>, Michel CLOITRE<sup>2</sup>, Mario GAUTHIER<sup>3</sup>, Dimitris Vlassopoulos<sup>4</sup>

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### POSTER 2.7

### **Ultrasonically Induced Birefringence in Polymer Solutions: The Case of Poly-Vinyl Alcohol – Water Solutions**

**K. Kouderis<sup>1</sup>, G. Stogiannidis<sup>1</sup>, S. Tsigoiias<sup>1</sup>, A. G. Kalampounias<sup>1,2</sup>**

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<sup>2</sup>Institute of Chemical Engineering Sciences, FORTH/ICE-HT, Patras, GR-26504, Greece

#### **POSTER 2.8**

### **Morphology of Thermoresponsive Molecular Brushes in Dilute Aqueous Solution**

**Jia-Jhen Kang<sup>1</sup>, Junpeng Zhao<sup>2</sup>, Stergios Pispas<sup>2</sup>, Christine M. Papadakis<sup>1</sup>**

<sup>1</sup> Technical University of Munich, Minich, Germany

<sup>2</sup> Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, Greece

#### **POSTER 2.9**

### **Local and Global (Chain) Relaxation of Polyisoprene in Multiblock Copolymers with a Tapered Interface**

**Chrysa Livitsanou<sup>1</sup>, Eftichios Galanos<sup>1</sup>, Holger Frey<sup>2</sup>, George Floudas<sup>1</sup>**

<sup>1</sup> Department Of Physics, University Of Ioannina, 45110 Ioannina, Greece

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#### **POSTER 2.10**

### **Synthesis Molecular and Morphological Characterization of Linear and Non-Linear Block Copolymers Containing PS and PDMS Segments**

**Gkreti Manesi, Dimitrios Moschovas, Apostolos Avgeropoulos**

Department of Materials Science and Engineering, University of Ioannina, Ioannina, Greece

#### **POSTER 2.11**

### **Application of SERS for the CMC Monitoring of Cationic Biocidal Surfactants and their Release from Antimicrobial Polymers**

**Georgios Mathioudakis<sup>1</sup>, Amaia Soto Beobide<sup>2</sup>, Georgios Bokias<sup>3</sup>, Georgios Voyiatzis<sup>2</sup>**

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#### **POSTER 2.12**

### **Synthesis of New Triblock Terpolymers for Applications in Nanotechnology**

**Christina Miskaki, Apostolos Avgeropoulos**

Department of Materials Science Engineering, University of Ioannina, Ioannina 45110, Greece

#### **POSTER 2.13**

### **Selective Surface Segregation of Modified Nanoparticles in Symmetric Diblock Copolymer and Triblock Terpolymer**

**Dimitrios Moschovas<sup>1</sup>, George Zapsas<sup>2</sup>, Konstantinos Ntetsikas<sup>2</sup>, Apostolos Avgeropoulos<sup>1</sup>, Nikolaos Zafeiropoulos<sup>1</sup>**

<sup>1</sup> Department of Materials Science and Engineering, University of Ioannina, Ioannina, Greece

<sup>2</sup> King Abdullah University Of Science And Technology (KAUST)

#### **POSTER 2.14**

### **Surface Modification on Silicon Substrates and Magnetic Nanoparticles of PS/P<sub>2</sub>VP V-Shaped Polymer Brushes through the “Grafting to” Method**

**Dimitrios Moschovas<sup>1</sup>, George Zapsas<sup>2</sup>, Spyros Kassavetis<sup>3</sup>, Christoforos Gravalidis<sup>3</sup>, Panos Patsalas<sup>3</sup>, Apostolos Avgeropoulos<sup>1</sup>, Nikolaos Zafeiropoulos<sup>1</sup>**

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**POSTER 2.15**

**Synthesis, Molecular and Morphological Characterization of Linear Diblock Copolymers of the PDMS-b-P2VP type**

**Gkreti Manesi, Ioannis Moutsios, Dimitrios Moschovas, Apostolos Avgeropoulos**

*Department of Materials Science Engineering, University of Ioannina, Ioannina 45110, Greece*

**POSTER 2.16**

**Synthesis and Characterization of Polymer Ionic Liquids Prepared from Diblock Copolymer Precursors**

**Georgios Papadopoulos<sup>1</sup>, Charalampos Pronoitis<sup>2</sup>, Dimitrios Moschovas<sup>1</sup>, Apostolos Avgeropoulos<sup>1</sup>**

<sup>1</sup> *Department of Materials Science And Engineering, University of Ioannina, Ioannina, Greece*

<sup>2</sup> *Department of Fibre and Polymer Technology, Kth Royal Institute of Technology, Sweden*

**POSTER 2.17**

**Wetting of Soft Superhydrophobic Micropillar Arrays**

**Periklis Papadopoulos**

*Department of Physics, University of Ioannina, Ioannina, Greece*

**POSTER 2.18**

**Sustainable Polymers from Renewable Resources: Synthesis and Solid-State Characterization of Thermoplastic Polyesters of 2,5-Furandicarboxylic Acid**

**Dimitrios Bikiaris<sup>1</sup>, George Papageorgiou<sup>2</sup>, George Floudas<sup>3</sup>**

<sup>1</sup> *Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece*

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**POSTER 2.19**

**High Molecular Weight cis-1,4-Polyisoprene Confined in Nanoporous Alumina: Dynamics Over the Entanglement Limit**

**Christos Politidis<sup>1</sup>, Stelios Alexandris<sup>1</sup>, Martin Steinhart<sup>2</sup>, George Floudas<sup>1</sup>**

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**POSTER 2.20**

**Poly(Alkylene Terephthalate)s Binary Blends**

**Dimitra Smyrnioti<sup>1</sup>, Maria Siambani<sup>2</sup>, Polyxeni Kalisperati<sup>2</sup>, George Papageorgiou<sup>2</sup>, Maria Kapnisti<sup>3</sup>**

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<sup>2</sup> *Technological Educational Institute of Thessaloniki, Thessaloniki, Greece*

**POSTER 2.21**

**Tunable Rheological Spectra of Associative Hydrogels Based on the Benzene Tricarboxamide Motif**

**Emmanouil Vereroudakis, Daniele Parisi, Dimitris Vlassopoulos**

*Institute of Electronic Structure and Laser, Foundation for Research and Technology & Department of Materials Science and Technology, University of Crete, Crete, Greece*

### 3. Polymer Engineering

#### POSTER 3.1

##### Layer by Layer Polymer Coated Mesoporous Silica Microparticles for Drug Delivery Potential Applications

**Kyriaki Evangelatou, Zacharoula Iatridi, Constantinos Tsitsilianis**

*University of Patras, Patras, Greece*

#### POSTER 3.2

##### Direct Solid State Polymerization of Aliphatic Polyamide Salts: Study of Critical Parameters

**Aggeliki Mytara, Athanasios Porfyris, Stamatina Vouyiouka, Constantine Papaspyrides**

*Laboratory of Polymer Technology, School of Chemical Engineering, National Technical University of Athens, Zographou Campus, Athens, 157 80, Greece*

### 4. Biopolymers & Applications

#### POSTER 4.1

##### Conformational and Dynamic Properties of DNA Minicircles in Aqueous Solution from Atomistic Molecular Dynamics Simulations

**Terpsichori Alexiou, Dimitrios G. Tsalikis, Panagiotis Alatas, Vlasis Mavrantzas**

*Department of Chemical Engineering, University of Patras, & Forth/ICE-HT, Patras, Greece*

#### POSTER 4.2

##### Synthesis and Characterization of Novel Polypeptides Based on Arginine and Glutamic Acid for Drug Delivery Applications

**Foteini Arfara, Panagiotis Christakopoulos, Maria Kasimati, Hermis Iatrou**

*Industrial Chemistry Laboratory, Department of Chemistry, National & Kapodistrian University of Athens, Athens, Greece*

#### POSTER 4.3

##### Synthesis, Characterization and Self-Assembly of Responsive Poly(Ethylene Oxide)-b-Poly(L-Histidine) Copolymers for Drug Encapsulation and Controlled Drug Release

**Varvara Athanasiou, Panagiotis Christakopoulos, Dimitra Stavroulaki, Niki Roumelioti, Hermis Iatrou**

*Industrial Chemistry Laboratory, Department of Chemistry, National & Kapodistrian University of Athens, Athens, Greece*

#### POSTER 4.4

##### Synthesis of Polypeptide-Based Nanocarriers Featuring Surface Marker for Targeted Drug Delivery to Cancer Cells

**Panagiotis Christakopoulos, Barbara Athanasiou, Diana Kazaryan, Hermis Iatrou**

*Industrial Chemistry Laboratory, Department of Chemistry, National & Kapodistrian University of Athens, Athens, Greece*

#### POSTER 4.5

##### Solid State Polymerization as Post-Encapsulation Modification Technique

**K. Chronaki, C. Papaspyrides, S. Vouyiouka**

*Laboratory of Polymer Technology, School of Chemical Engineering, National Technical University of Athens, Zographou Campus, Athens, 157 80, Greece*



#### POSTER 4.6

##### Hydroxypropylcellulose/Graphene Oxide Nanocomposite Macroporous Cryogels: Synthesis and Properties

**Georgi L. Georgiev and Petar D. Petrov**

Institute of Polymers, BAS, "Akad. G. Bonchev" St. 103A, 1113 Sofia, Bulgaria

#### POSTER 4.7

##### Hybrid polylactic acid (PLA)/mesostructured cellular foam (MCF) silicate carriers for the encapsulation and controlled release of water insoluble drugs

**Dimitris Giliopoulos<sup>1</sup>, Evi Christodoulou<sup>2</sup>, Dimitrios Bikiaris<sup>2</sup>, Konstantinos Triantafyllidis<sup>2</sup>**

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#### POSTER 4.8

##### Thermoresponsive Properties of Alginate-Based Graft Copolymers

**Zacharoula Iatridi, Sofia-Falia Saravanou, Constantinos Tsitsilianis**

University Of Patras, Patras, Greece

#### POSTER 4.9

##### Extraction Methods of Collagen from Fish (Trout) Wastes and Characterization: A Comparative Study

**Aikaterini Karra, Andreas Karydis-Messinis, Maria Karabela, Nikolaos E. Zafeiropoulos**

Laboratory of Polymers, Department of Materials Science and Engineering

University of Ioannina, Ioannina, Greece

#### POSTER 4.10

##### Synthesis and Characterization of Hybrid Copolymers Containing Tryptophan and Study of their Applications for Cancer Treatment

**Maria Kasimati, Katerina Mathianaki, Panagiotis Christakopoulos, Diana Kazaryan,**

**Hermis Iatrou**

Industrial Chemistry Laboratory, Department Of Chemistry, National & Kapodistrian University of Athens, Athens, Greece

#### POSTER 4.11

##### Synthesis and Characterization of Grafted Polymers Based on Polypeptides Using poly(ethylene Oxide) as Macroinitiator

**Diana Kazaryan, Panagiotis Christakopoulos, Katerina Mathianaki, Hermis Iatrou**

Industrial Chemistry Laboratory, Department of Chemistry, National & Kapodistrian University of Athens, Athens, Greece

#### POSTER 4.12

##### Injectable Hyaluronic Acid Based Hydrogels for the Repair of Cartilage Lesions

**COSTAS KIPARISSIDES**

Centre Research and Technology Hellas, Chemical Process Engineering Research Institute (CERTH/CPERI), Thessaloniki, Greece

#### POSTER 4.13

##### Dual-Function Contact-Active Antimicrobial Polymer Coatings

**Eleftherios Koufakis<sup>1</sup>, Theodore Manouras<sup>1</sup>, Evangelia Vasilaki<sup>2</sup>, Ioanna Peraki<sup>3</sup>, Maria Vamvakaki<sup>4</sup>**

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<sup>4</sup> Institute of Electronic Structure and Laser, Foundation for Research and Technology & Department of Materials Science and Technology, University of Crete, Crete, Greece

#### POSTER 4.14

##### Novel Natural Polymer Coatings with Self-Renewable Antimicrobial Properties

**Theodore Manouras<sup>1</sup>, Eleftherios Koufakis<sup>1</sup>, Evangelia Vasilaki<sup>2</sup>, Ioanna Peraki<sup>3</sup>, Maria Vamvakaki<sup>4</sup>**

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#### POSTER 4.15

##### Double Responsive Cross-Linked Hybrid Copolymers Based on Poly(Cysteine) and Poly(Histidine)

**Katerina Mathianaki, Maria Kasimati, Dimitra Stavroulaki, Panagiotis Christakopoulos, Hermis Iatrou**

Industrial Chemistry Laboratory, Department Of Chemistry, National & Kapodistrian University of Athens, Athens, Greece

#### POSTER 4.16

##### Chitosan Nanoparticles Containing Salmeterol Xinafoate for Respiratory Use

**Georgia Michailidou, Stavroula Nanaki, Dimitrios N. Bikiaris**

Laboratory of Chemistry and Technology of Polymers and Dyes, Chemistry Department, Aristotle University of Thessaloniki, Greece

#### POSTER 4.17

##### PLA, PLGA75/25 and PLGA 50/50 Patches with Dispersed Chitosan Nanoparticles for Transdermal Delivery of Leflunomide

**Stavroula Nanaki**

Laboratory of Polymer Chemistry and Technology, Department of Chemistry, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece

#### POSTER 4.18

##### Synthesis and Characterization of Nanocomposites Based on Poly(Propylene 2,5- Furan Dicarboxylate) and Aluminosilicate Clays

**Lazaros Papadopoulos<sup>1</sup>, Zoi Terzopoulou<sup>1</sup>, Dimitrios Bikiaris<sup>1</sup>, George Papageorgiou<sup>2</sup>**

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#### POSTER 4.19

##### **A Novel Visible-Light Photo-Activated Drug Release System**

**Maria Psarrou<sup>1</sup>, Theodore Manouras<sup>2</sup>, Maria Vamvakaki<sup>3</sup>**

<sup>1</sup> Department of Chemistry, University of Crete, Crete, Greece

<sup>2</sup> Department of Materials Science And Technology, University of Crete, Crete, Greece

<sup>3</sup> Institute of Electronic Structure And Laser, Foundation for Research And Technology & Department of Materials Science and Technology, University of Crete, Crete, Greece

#### POSTER 4.20

##### **Synthesis of N-Vinylpyrrolidone Based Copolymers via Reversible Addition-Fragmentation Chain Transfer Polymerization**

**Nikoletta Roka, Eleftheria Mitsoni, Olga Kokkorogianni, Marinos Pitsikalis**

Industrial Chemistry Laboratory, Department of Chemistry, National and Kapodistrian University of Athens, Athens, Greece

#### POSTER 4.21

##### **Synthesis and Characterization of Stimuli-Responsive Polypeptides Based on Phenylalanine and Histidine for Drug Delivery Applications**

**Niki Roumelioti, Panagiotis Christakopoulos, Varvara Athanasiou, Hermis Iatrou**

Industrial Chemistry Laboratory, Department Of Chemistry, National & Kapodistrian University Of Athens, Panepistimiopolis Zografou, Athens, Greece

#### POSTER 4.22

##### **Development and Physicochemical Characterization of Implants for Cardiac Repair**

**Maria Roumpi<sup>1</sup>, Maria Karabela<sup>2</sup>, Symeon Agathopoulos<sup>1</sup>**

<sup>1</sup> Ceramics & Composites Laboratory, Department of Materials Science And Engineering, University of Ioannina, Greece

<sup>2</sup> Polymers Laboratory, Department of Materials Science And Engineering, University of Ioannina, Greece

#### POSTER 4.23

##### **Synthesis of Stimuli-Responsive Polypeptides for Drug Delivery Applications**

**Dimitra Stavroulaki<sup>1</sup>, Foteini Arfara<sup>1</sup>, Panagiotis Christakopoulos<sup>1</sup>, Panagiota Fragouli<sup>2</sup>, Hermis Iatrou<sup>1</sup>**

<sup>1</sup> Industrial Chemistry Laboratory, Department Of Chemistry, National And Kapodistrian University Of Athens

<sup>2</sup> Department Of Textile Engineering, Piraeus University Of Applied Sciences

#### POSTER 4.24

##### **A New Phosphorous-Containing Star-Shaped Glycopolymer for Biomedical Application**

**Zornica Todorova, Oyundari Tumurbaatar, Neli Koseva**

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## 5. Polymers for Emerging Technologies

(Energy, Organic Electronics, Environment, Nanotechnology)

### POSTER 5.1

#### Semiconducting Small Molecules for OSCS

S. Aivali<sup>1</sup>, C. Anastasopoulos<sup>1</sup>, A. K. Andreopoulou<sup>1,2</sup>, J. K. Kallitsis<sup>1,2</sup>

<sup>1</sup>Department of Chemistry, University of Patras, Rio 26504, Greece

<sup>2</sup>Chemical Engineering Science Foundation of research Technology Hellas, FORTH/ICE-HT, Patras 26504, Greece

### POSTER 5.2

#### Metallocomplexes Combinations with Polymeric Chromophores for Polymeric Light Emitting Diodes

Konstantinos Andrikopoulos<sup>1</sup>, Aikaterini Andreopoulou<sup>2</sup>, Charalampos Anastasopoulos<sup>3</sup>, Joannis Kallitsis<sup>2</sup>

<sup>1</sup>Institute of Chemical Engineering Sciences (ICE-HT), Foundation for Research and Technology, Hellas (FORTH), Greece

<sup>2</sup>Department of Chemistry, University of Patras, Patras, Greece

<sup>3</sup>Department of Chemistry, University of Crete, Crete, Greece

### POSTER 5.3

#### Tuning the Mechanical and Thermal Properties of Thermally Reversible Cross-Linked Polymers

Dimitrios G. Bekas<sup>1</sup>, Michaella Konstantinidou<sup>2</sup>, Kyriaki Tsirka<sup>2</sup>, Maria Kosarli<sup>2</sup>, Dimitrios T. Vaimakis-Tsogkas<sup>2</sup>, Alkiviadis S. Paipetis<sup>2</sup>

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<sup>2</sup>Department of Materials Science and Engineering, University of Ioannina, Ioannina 45110, Greece

### POSTER 5.4

#### Novel MnFe<sub>2</sub>O<sub>4</sub>-Loaded Polymeric Nanocarriers for Controlled and Targeted Release of the Anticancer Drug Paclitaxel

Evi Christodoulou<sup>1</sup>, Maria Nerantzaki<sup>1</sup>, Stravroula Nanaki<sup>1</sup>, Dimitrios Bikiaris<sup>1</sup>, Emmanouil Koutroubis<sup>1</sup>, Catherine Dendrinou-Samara<sup>1</sup>, Antonios D. Anastasiou<sup>2</sup>

<sup>1</sup>Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece

<sup>2</sup>School of Chemical and Process Engineering, University of Leeds, UK

### POSTER 5.5

#### Evaluation of Chitosan-Containing Electrospun Fibers in U(VI) Adsorption

Christos N. Christou<sup>1</sup>, Katerina Philippou<sup>2</sup>, Ioannis Pashalidis<sup>2</sup>, Theodora Krasia-Christoforou<sup>1</sup>

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<sup>2</sup>University of Cyprus, Department of Chemistry, P. O. Box 20537, 1678, Nicosia, CYPRUS

### POSTER 5.6

#### Antimicrobial Coatings Based on Crosslinked Blends of Quaternized Ammonium Copolymers

Denisa Druvari<sup>1</sup>, Nikos D. Koromilas<sup>1</sup>, Georgios Bokias<sup>2</sup>, Ioannis Kallitsis<sup>2</sup>

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#### POSTER 5.7

##### **A Comparative Study of Full Factorial Design for PLA-HA and PLA-MMT Composites**

**F. Gevikçi, G. Aytekin, B. Özoğul**

Chemical Engineering Department, Ondokuz Mayıs University, Samsun, Turkey

e-mail: fezag@omu.edu.tr

#### POSTER 5.8

##### **Nano-Modified Composites: A Dispersion Monitoring Study via Impedance Spectroscopy**

**Georgios Foteinidis, Maria Kosarli, Kyriaki Tsirka, Alkiviadis S. Paipetis**

<sup>1</sup> Department of Materials Science and Engineering, University of Ioannina, 45110 Ioannina, Greece

#### POSTER 5.9

##### **Functional Nanoporous Polymers for Energy and Environmental Applications**

**Maria Kaliva<sup>1</sup>, Gerasimos S. Armatas<sup>2</sup>, Maria Vamvakaki<sup>3</sup>**

<sup>1</sup> Institute of Electronic Structure And Laser, Foundation For Research And Technology

<sup>2</sup> Department of Materials Science And Technology, University of Crete, Crete, Greece

<sup>3</sup> Institute of Electronic Structure And Laser, Foundation For Research And Technology & Department of Materials Science And Technology, University of Crete, Crete, Greece

#### POSTER 5.10

##### **Synthesis and Characterization of Novel Nanocomposite Materials Based on PMMA with Ag, TiO<sub>2</sub> and ZnO Nanoparticles with Antimicrobial Properties**

**Kantareli Evropi-Anastasia<sup>1</sup>, Tsagkalias Ioannis<sup>2</sup>, Achilias Dimitris<sup>2</sup>**

<sup>1</sup> Interdepartmental postgraduate program-Advanced Materials Processes and Technology, Aristotle University of Thessaloniki, Greece

<sup>2</sup> Laboratory of Polymer and Color Chemistry and Technology, Department of Chemistry, Aristotle University of Thessaloniki, Greece

#### POSTER 5.11

##### **Carbon Fiber Thermoelectric Module Fabrication, Integration, Experimental and Simulated Power Generation in 8-Ply Laminate Epoxy Composites**

**G. Karalis\*, L. Tzounis, E. Lambrou, L. N. Gergidis, A. S. Paipetis**

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#### POSTER 5.12

##### **Design and Synthesis of New High Bandgap Conjugated Polymers for Applications in Organic Photovoltaic Devices**

**Athanasios Katsouras<sup>1</sup>, Christos L. Chochos<sup>2</sup>, Apostolos Avgeropoulos<sup>1</sup>**

<sup>1</sup> Department of Materials Science and Engineering, University of Ioannina, Ioannina, Greece

<sup>2</sup> National Hellenic Research Foundation, Greece

#### POSTER 5.13

##### **Preparation of Porous Polymeric Membranes Based on A Functional Polysulfone-Type Aromatic Polyether**

**Nikos D. Koromilas,<sup>1,2</sup> Charalampos Anastasopoulos,<sup>1</sup> Joannis K. Kallitsis<sup>1,2</sup>**

<sup>1</sup> Department of Chemistry, University of Patras, GR-26504, Patras, Greece

<sup>2</sup> FORTH/ICE-HT, Stadiou str., P.O. Box 1414, GR-26504, Rio-Patras, Greece

**POSTER 5.14**

**Transforming Polymer Microcapsules to Electrically Conductive Micro-Containers for Enhanced Self-Healing Applications**

**Maria Kosarli, Georgios Foteinidis, Kyriaki Tsirka, Alkiviadis S. Paipetis**

Department of Materials Science and Engineering, University of Ioannina, Ioannina 45110, Greece

**POSTER 5.15**

**Improving the Hemostatic Action of Acidified Chitosan with Inorganic Additives**

**Ioanna Koumentakou, Evi Christodoulou, Dimitrios Bikiaris**

Laboratory of Organic Chemical Technology, Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece

**POSTER 5.16**

**Novel Nanomaterials as Temperature Sensors in Food Packaging Industry: Fe(II) Coordination Complexes Exhibiting Spin Crossover Phenomenon (SCO) in Food Packaging Polymers**

**Zoi G. Lada<sup>1</sup>, Konstantinos S. Andrikopoulos<sup>2</sup>, Amaia Soto Beobide<sup>2</sup>, Spyros P. Perlepes<sup>1</sup>, George A. Voyiatzis<sup>2</sup>**

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**POSTER 5.17**

**Multiwall Nanotubes Decorated with Guanidinylated Hyperbranched Polyethylenimine as Effective Drug Delivery Systems**

**K.M Lyra<sup>1</sup>, A. Kaminari<sup>1</sup>, M. Zachariadis<sup>2</sup>, Z. Sideratou<sup>1</sup>**

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<sup>2</sup> Institute of Biosciences and Applications, NCSR "Demokritos", 15310 Aghia Paraskevi, Attiki, Greece

**POSTER 5.18**

**Energy Storage and Harvesting in Barium Strontium Titanate/ Epoxy Nanodielectrics**

**G.C. Manika, G.C. Psarras**

Department of Materials Science, University of Patras, 26504, Patras, Greece

**POSTER 5.19**

**Functional Block Copolymers for Top-Down and Bottom-Up Lithography**

**Anastasia Nika<sup>2,3</sup>, Theodore Manouras<sup>1</sup>, Panagiotis Argitis<sup>2</sup>, Maria Vamvakaki<sup>1</sup>, Margarita Chatzichristidi<sup>3</sup>**

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<sup>2</sup> N.C.S.R. Demokritos

<sup>3</sup> National and Kapodistrian University of Athens, Athens, Greece

**POSTER 5.20**

**Effect of the Nanoclay Type on Curing Kinetics and Mechanical Properties of Dental Nanocomposite Resins**

**Alexandros Nikolaidis<sup>1</sup>, Elisabeth Koulaouzidou<sup>1</sup>, Dimitris Achilias<sup>2</sup>**

<sup>1</sup> Department of Basic Dental Sciences, Division of Dental Tissues' Pathology and Therapeutics, School of Dentistry, AUTH, Greece

<sup>2</sup> Laboratory of Polymer and Color Chemistry and Technology, Department of Chemistry, AUTH, Greece

#### POSTER 5.21

##### Functionalized Dendritic Nanocarriers as Efficient Drug Delivery Systems Targeting Mitochondria

**K. N. Panagiotaki<sup>1</sup>, Z. Sideratou<sup>1</sup>, A. Kaminari<sup>1</sup>, M. Zachariadis<sup>2</sup>, D. Tsiourvas<sup>1</sup>**

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#### POSTER 5.22

##### Barium Titanate or Carbon/Polydimethylsiloxane Nano/Micro-Composites: Dielectric Response, Functional Behavior and Energy Storage

**Anastasios Patsidis, Georgios Psarras**

Department of Materials Science, University of Patras, 26504, Patras, Greece

#### POSTER 5.23

##### Electromagnetic Response and Thermomechanical Properties of Multifunctional ZnFe<sub>2</sub>O<sub>4</sub> / Epoxy Nanodielectrics

**Aikaterini Sanida<sup>1</sup>, Sotirios Stavropoulos<sup>1</sup>, Thanasis Speliotis<sup>2</sup>, Georgios C. Psarras<sup>1</sup>**

<sup>1</sup> Smart Materials & Nanodielectrics Laboratory, Department of Materials Science, School of Natural Sciences, University of Patras, Patras 26504, Greece

<sup>2</sup> Institute of Nanoscience And Nanotechnology, Ncsr "Demokritos" Aghia Paraskevi, Athens 15310, Greece

#### POSTER 5.24

##### Investigating the Dielectric Response of Carbon Black/ Epoxy Nanocomposites Incorporating Magnetite Nanoparticles

**Sotirios Stavropoulos, Aikaterini Sanida, Georgios Psarras**

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#### POSTER 5.25

##### The Use of Fly Ash Fillers in Polymer Composites

**A. Stimoniaris<sup>1</sup>, D. Gournis<sup>2</sup>, M. Karakassides<sup>2</sup>, C. Delides<sup>1</sup>**

<sup>1</sup> Western Macedonia University of Applied Sciences, Department of Environmental Engineering.

<sup>2</sup> University of Ioannina, Department of Materials Science and Engineering, Ioannina.

#### POSTER 5.26

##### Development, Characterization and Functionality of Epoxy Resin- Barium Zirconate Nanocomposites

**Tsikriteas Zois Michail, Aikatairini Sanida, Sotirios Stavropoulos, Anastasios Patsidis, Georgios Psarras**

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#### POSTER 5.27

##### Dielectric and Mechanical Characterization of Epoxy Resin/Silicon Carbide Nanocomposites

**Theodore G. Velmachos, Georgios C. Psarras**

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#### POSTER 5.28

##### Functionalized Zinc Porphyrins with Various Peripheral Groups for Interfacial Electron Injection Barrier Control in Organic Light Emitting Diodes

Apostolis Verykios<sup>1</sup>, Michael Papadakis<sup>2</sup>, Anastasia Soultati<sup>1</sup>, Georgios Papalamprakopoulos<sup>3</sup>, Evangelos K. Evangelou<sup>3</sup>, Athanassios G. Goutsolelos<sup>2</sup>, Maria Vasilopoulou<sup>1</sup>

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<sup>3</sup> Department of Physics, University of Ioannina, 45110 Ioannina, Greece

#### POSTER 5.29

##### Catalytic Pyrolysis and Degradation Products of Polymers Used in Packaging Materials

Evangelia C. Vouvoudi, Dimitris S. Achilias

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#### POSTER 5.30

##### Pyrolytic Degradation of Polymers Originating in Electric and Electronic Equipment

Aristea T. Rousi, Evangelia C. Vouvoudi, Dimitris S. Achilias

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## 6. Advances in Polymer Theory and Simulations

#### POSTER 6.1

##### Mathematical Modeling of Crosslinking Kinetics, Swelling, Mechanical and Rheological Properties of Hyaluronic Acid – Based Hydrogels for Biomedical Applications

Filippos Karageorgos<sup>1,2</sup>, Athina Vasileiadou<sup>1,2</sup>, Costas Kiparissides<sup>1</sup>

<sup>1</sup>Centre for Research & Technology Hellas, Chemical Process & Energy Resources Institute (CERTH/CPERI)

<sup>2</sup>Chemical Engineering Department, Aristotle University of Thessaloniki

#### POSTER 6.2

##### From Molecular to Plant Scale Computer Aided Design, Modelling and Control of Macromolecular Architecture of Synthetic Polymers

Costas Kiparissides

Centre for Research & Technology Hellas, Chemical Process & Energy Resources Institute (CERTH/CPERI)

#### POSTER 6.3

##### Conformational, Dynamic and Permeability Properties of Atactic Poly(Methyl Methacrylate) - Carbon Nanotube (PMMA-CNT) Nanocomposites from Molecular Simulations

Panagiotis Mermigkis<sup>1</sup>, Emmanuel Skountzos<sup>2</sup>, Vlasis Mavrantzas<sup>2</sup>

Department of Chemical Engineering, University of Patras

#### POSTER 6.4

##### Polyelectrolyte Micelles in Salt -Free Solutions: Micelle Size and Electrostatic Potential

Kalliopi Miliou<sup>1</sup>, Leonidas N. Gergidis,<sup>2</sup> Costas Vlahos<sup>1,\*</sup>

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<sup>2</sup>Department of Materials Science & Engineering, University of Ioannina, 45110 Ioannina, Greece



## 7. Polymers in Industry

### POSTER 7.1

#### **Polypropylene/Magnesium Hydroxide Composites: Synthesis, Characterization and Thermal Stability Performance**

**Maria Baikousi<sup>1</sup>, Konstantinos C. Vasilopoulos<sup>1</sup>, Georgios Georgiadis<sup>2</sup>, Christos Karageorgiou<sup>2</sup>, Stylianos Kakoulidis<sup>2</sup>, Michael A. Karakassides<sup>1</sup>**

<sup>1</sup> *Department of Materials Science and Engineering, University of Ioannina, Ioannina, Greece*

<sup>2</sup> *Thrace Nonwoven and Geosynthetics S.A.*

### POSTER 7.2

#### **Antifouling Encapsulation Systems for Marine Coating Applications**

**M. Kalyva, K. Chronaki, C. Papaspyrides, D. Korres, S. Vouyiouka**

*Laboratory of Polymer Technology, School of Chemical Engineering, National Technical University of Athens, Zographou Campus, Athens, 157 80, Greece*

### POSTER 7.3

#### **Ignitability of PPR Pipes for Fire Sprinkler Systems Using an Instrumented UI-94 Test**

**Georgios Maliaris<sup>1</sup>, Ilias Sarafis<sup>2</sup>**

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<sup>2</sup> *Department of Mechanical Engineering, Technological Educational Institute of Kavala, Greece*

### POSTER 7.4

#### **Poly(Urea-Formaldehyde) Microcapsules for Self-Healing Coatings**

**S. Tzavidi, A. Porfyris, C. Papaspyrides, D. Korres, S. Vouyiouka**

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