

## JOANNIS K. KALLITSIS

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**Profession:** Chemist, Professor of Polymer Science

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### EDUCATION

- **1984:** PhD in Chemistry, Department of Chemistry, University of Patras, Greece
- **1979:** Diploma in Chemistry, Department of Chemistry, University of Patras, Greece

### CURRENT POSITION

*Professor of Polymer Science*, Department of Chemistry

University of Patras, GR 26504-Patras, GREECE

*Collaborating Faculty Member*, Institute of Chemical Engineering Science

(FORTH/ICE-HT) Patras, Greece

### PREVIOUS POSITIONS

- **1996-2001:** Associate Professor, Department of Chemistry, University of Patras
- **1990-1996:** Assistant Professor, Department of Chemistry, University of Patras
- **1/1990-9/1990:** Research Fellow, Plastics Research Laboratory B.A.S.F., Ludwigshafen, Germany
- **1/1989-1/1990:** Research Fellow, Max-Planck Institute for Polymer Research, Mainz, Germany
- **1986-1989:** Lecturer, Department of Chemistry, University of Patras

### RESEARCH ACTIVITIES

- Development of polymeric membranes for energy related application like Polymer Electrolyte Membrane Fuel Cells and Li Ion Batteries.
- Development of new polymeric and hybrid optoelectronic materials for organic photovoltaics.
- Preparation of amphiphilic block copolymers with biocidal or antifouling properties.
- Modification of carbon nanotubes with the semiconducting polymers.

### VISITING PROFESSOR

- **9/1995-2/1996:** Department of Chemistry, University of Groningen, The Netherlands
- **11/2006-12/2006:** Department of Pharmacy, University of Trieste, Italy
- **02/2010:** Department of Pharmacy, University of Trieste, Italy

### INVITED PROFESSOR

- **9/1999-12/1999:** Department of Chemistry, Free University of Berlin, Germany
- **1-2/2006:** 'Ecole Europeene Chimie Polymeres Materiaux (E.C.P.M.), Université Louis Pasteur, Strasbourg, France
- **10/2008-11/2008:** Department of Materials, Polymer Institute, Swiss Federal Institute of Technology (ETH), Zurich.
- **09/2010:** Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI-ParisTech), France
- **09/2012:** Ecole Supérieure de Physique et de Chimie Industrielles, TOTAL–ESPCI Chair (ESPCI-ParisTech), France
- **11/2013:** Ecole Supérieure de Physique et de Chimie Industrielles, (ESPCI-ParisTech), France
- **9/2016:** Laboratoire de Chimie des Polymères Organiques (LCPO), University of Bordeaux.

### TEACHING ACTIVITIES

- "Structure-Property Relations in Polymers" (Dept. of Chem., Univ. of Patras, Greece)
- "Physical Processes of Chemical Technology" (Dept. of Chem., Univ. of Patras, Greece)
- "Structure-Property Relations in Macromolecules" (Graduate Program, Univ. of Patras)
- "Characterization of Polymeric and Hybrid Materials" (Graduate Program, Univ. of Patras)

### OTHER ACTIVITIES

- Chairman, Post Graduate Program on Polymer Science and Technologies (1998-2001).
- Vice Chairman, Department of Chemistry, University of Patras (2001-2005).
- Founding member of the spin-off activity "ADVENT TECHNOLOGIES SA".
- National Representative in IUPAC, Polymer Division IV (2005-2009).
- Vice Chairman, Research Committee University of Patras (2007-2010).
- President of Hellenic Polymer Society (ELEP) (2010-2012).
- Board Member in European Polymer Federation (2010-2012).
- Board Member of the University of Patras Governing Council (2012-2017)

### ORGANIZATION OF INTERNATIONAL CONFERENCES

- International Symposium on Flexible Organic Electronics (IS-FOE), Thessaloniki, Greece, 2008-2019 (Co-Chair of Organizing Committee)
- EUROMAT-2017 Thessaloniki, Greece, September 17-22, 2017, (Symposium Organiser)
- "World Congress on Materials Science & Polymer Engineering 2016" Abu Dhabi, November 2016
- European Polymer Electrolytes Fuel Cell & Electrolyser Forum 2016-2017, Lucerne, Switzerland
- European Polymer Congress 2019 (EPF 2019) Heraklion Crete, Greece, June 2019 (Scientific Committee)
- CARISMA 2019, August 2019, University of Duisburg, Essen Germany

### CURRENT PARTICIPATION IN RESEARCH PROJECTS:

- **2017-2019** «Development of novel materials with improved thermal insulation properties for food packaging applications » ThermPack MIS 5010801, Prefecture of East Macedonia-Thrace 2014 – 2020 (ESPA 2014-2020)
- **2018-2019** «Development of efficient low cost PV glasses» DE1MP0006 Prefecture of Western Greece 2014-2020 (ESPA 2014-2020)
- **2018- 2021** «Printed OLEDs for intelligent, efficient and tunable solid state lighting devices in large scale» T1EΔK-01039 Operational Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK) (ESPA 2014-2020)
- **2018- 2021** «Development of Surface Coating Processes in Cotton Yarns / Fabrics for Single Stage Dyeing with Reduced Environmental Impact» T1EΔK-03073 Operational Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK) (ESPA 2014-2020)
- **2018-2021** «Collagen-Based Composites Obtained by Pelt Waste Processing for Smart Biofertilizers» AgroSmartgel-ΔE3ΔE-0149, ESPA 2014-2020-Prefecture of Western Greece 2014 – 2020 (2018-2019) (INCOMERA)

### OVERVIEW OF PUBLICATIONS

Publications in refereed international Journals: **197**

**Citations:** Scopus-6000 (total), 5000(without self citations) and h=36

Google Scholar-7500 and h=39

### OVERVIEW OF CONFERENCES

Papers presented in **250** International and Greek conferences

Invited talks: **50**

## RELEVANT PUBLICATIONS IN INTERNATIONAL JOURNALS

1. V. Deimede, G. Voyiatzis, J.K. Kallitsis, L. Qingfeng, N.J. Bjerrum, "Miscibility Behavior of Polybenzimidazole/Sulfonated Polysulfone Blends for use in Fuel Cell Applications", *Macromolecules* 33, 7609 (2000).
2. N. Gourdoupi, A.K. Andreopoulou, V. Deimede, J.K. Kallitsis, "A Novel Proton Conducting Polyelectrolyte Composed of an Aromatic Polyether Containing Main-Chain Pyridine Units for Fuel Cells Applications", *Chemistry of Materials* 15, 5044 (2003).
3. V. Datsyuk, M. Kalyva, K. Papagelis, J. Parthenios, D. Tasis, A. Siokou, I. Kallitsis, C. Galiotis, "Chemical Oxidation of Multi Walled Carbon Nanotubes", *Carbon* 46, 833–840 (2008).
4. M. Geormezi, V. Deimede, N. Gourdoupi, N. Triantafyllopoulos, S. Neophytides, and J. K. Kallitsis "Novel Pyridine-Based Poly (ether sulfones) and their Study in High Temperature PEM Fuel Cells", *Macromolecules*, 41 (23), 9051-9056 (2008).
5. M. R. Hammond, A. K. Andreopoulou, E. K. Pefkianakis, N. P. Tzanetos, J. K. Kallitsis, R. Mezzenga, "Metallosupramolecular Side-Chain Polymers and Polyelectrolyte-Metallosupramolecular Surfactant Complexes", *Chemistry of Materials*, 21 (11), 2169-2172, (2009)
6. K.D. Papadimitriou, F. Paloukis, S.G. Neophytides, J.K. Kallitsis, "Cross-Linking of Side Chain Unsaturated Aromatic Polyethers for High Temperature Polymer Electrolyte Membrane Fuel Cell Applications", *Macromolecules* 44, 4942–4951 (2011).
7. C.I Morfopoulou, A.K. Andreopoulou, M.K. Daletou, S.G. Neophytides J.K. Kallitsis "Cross-linked high temperature polymer electrolytes through oxadiazole bond formation and their applications in HT PEM fuel cells" *Journal of Materials Chemistry A: Materials for Energy and Sustainability* 1 (5), 1613-1622, (2013).
8. S. Kakogianni, S. Kourkouli, A. Andreopoulou, J.K. Kallitsis "A versatile approach for creating hybrid semiconducting polymer-fullerene architectures for organic electronics", *Journal of Materials Chemistry A* 2(21), 8110-8117 (2014)
9. A. Vöge, V. Deimede, F. Paloukis, S.G. Neophytides, J.K. Kallitsis "Synthesis and properties of aromatic polyethers containing poly(ethylene oxide) side chains as polymer electrolytes for lithium ion batteries" *Materials Chemistry and Physics* 148, 57-66 (2014).
10. D. Druvari, N. Koromilas, G. Lainioti, G. Bokias, G. Vasilopoulos, A. Vantarakis, I. Baras, N. Dourala, J. Kallitsis, "Polymeric quaternary ammonium-containing coatings with potential dual contact-based and release-based antimicrobial activity" *ACS Appl. Mater. Interfaces* 8(51), 35593–35605 (2016).
11. G. Bounos, K. Andrikopoulos, H. Moschopoulou, G. Lainioti, D. Roilo, R. Checchetto, Th. Ioannides, J. Kallitsis, G. Voyiatzis "Enhancing Water Vapor Permeability in Mixed Matrix Polypropylene Membranes Through Carbon Nanotubes Dispersion" *Journal of Membrane Science* 524, 576–584 (2017)
12. K.J Kallitsis, R. Nannou, A.K Andreopoulou, M.K Daletou, D. Papaioannou, S.G Neophytides, J.K. Kallitsis "Crosslinked Wholly Aromatic Polyether Membranes based on Quinoline Derivatives and their Application in HT-PEM Fuel Cells" *Journal of Power Sources* 379, 144-154 (2018).

## CHAPTERS IN COLLECTIVE VOLUMES

- "Materials, proton conductivity and electrocatalysis in high temperature PEM fuel cells", M. K. Daletou, J. Kallitsis and S. Neophytides Chapter 6 in "Interfacial phenomena in Electrocatalysis", Volume 51 of the series "Modern Aspects of Electrochemistry", C. Vayenas, R. E. White. M. E. Gamboa-Aldeco (Eds.), Modern Springer NY, 2011, 301-368 DOI: 10.1007/978-1-4419-5580-7\_6. [http://link.springer.com/chapter/10.1007%2F978-1-4419-5580-7\\_6](http://link.springer.com/chapter/10.1007%2F978-1-4419-5580-7_6)
- Kallitsis JK and Andreopoulou AK (2012) Rigid–Flexible and Rod–Coil Copolymers. In: Matyjaszewski K and Möller M (eds.) *Polymer Science: A Comprehensive Reference*, Vol 6, pp. 725–773. Amsterdam: Elsevier BV. "Polymeric Semiconductors for Organic Photovoltaics".
- J. K. Kallitsis, S. Kourkouli, A. K. Andreopoulou, "Organic polymeric semiconductor materials for applications in photovoltaic cells" In Part 1: Production, Properties and Characterisation of Flexible Organic Materials In *Handbook on Flexible Organic Electronics: Materials, Manufacturing And Applications*, Woodhead Publishing Limited, Uk; Edited By: Stergios Logothetidis, ISBN 9781782420354, 2015.
- "Pyridine Containing Aromatic Polyether Membranes" J.K. Kallitsis, A.K Andreopoulou, M. Daletou and S. Neophytides, Chapter 5 in "High Temperature Polymer Electrolyte Fuel Cells- Approaches, Status and Perspectives", J.O. Jensen, D. Aili, H.A. Hjuler, Q. Li (Eds.) 2016, 91-126, DOI: 10.1007/978-3-319-17082-4\_5. [http://link.springer.com/chapter/10.1007%2F978-3-319-17082-4\\_5](http://link.springer.com/chapter/10.1007%2F978-3-319-17082-4_5)