

Curriculum Vitae

Fullname: Ntetsikas Konstantinos, BS, MSc, PhD

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Personal Information

- *Date of Birth:* November 12th 1984
- *Place of Birth:* Ioannina
- *Nationality:* Greek
- *Marital Status:* Married

Languages

- English (“First Certificate in English”)
- Greek

Studies

- *Sep. 2002- Sep. 2008:* Undergraduate Studies at the Department of Materials Science Engineering, University of Ioannina.
- *Nov. 2008- Nov. 2010:* MSc Thesis in Chemistry and Technology of Materials through the interdepartmental collaboration between Department of Materials Science Engineering and Department of Chemistry, University of Ioannina.
MSc advisor: Associate Professor A. Avgeropoulos

MSc Thesis Title: ‘*Synthesis and Characterization of Methacrylate Diblock Copolymers - Studies of Chemically Modified and Non Modified Polymers – Properties*’

- **Nov. 2010- May 2015**: PhD candidate in Polymer Science at Polymers Laboratory, Department of Materials Science Engineering, University of Ioannina. PhD advisor: Professor A. Avgeropoulos
PhD Thesis Title: ‘*Macromolecular architecture of elastomer complex structures. Synthesis-Characterization-Properties*’

11 May 2015-11 February 2016 (9 months): Obligatory Hellenic Army Services

Educational Experience

2009-2015 (6 semesters in total)

- Teaching Assistant
“Materials Laboratory V (Polymer Materials)” in the Polymer Materials Laboratory, Department of Materials Science Engineering, University of Ioannina

Research Interests

- a). Synthesis of novel polymers via anionic polymerization using high vacuum techniques, linear and non-linear architectures of homopolymers, copolymers and terpolymers exhibiting low and high molecular weight. Chemical modifications of methacrylate diblock copolymers.
- b). Characterization and properties of polymers in dilute solutions via Size Exclusion Chromatography (SEC), Membrane Osmometry (MO), Vapor Pressure Osmometry (VPO), automated Viscometry (V), Proton and Carbon Nuclear Magnetic Resonance Spectroscopy ($^1\text{H-NMR}$, $^{13}\text{C-NMR}$).
- c). Morphological Characterization via Transmission Electron Microscopy (TEM), Scanning Electron Microscopy (SEM), Differential Scattering Calorimetry (DSC).

- d). Various processing methods for nanofabrication through nanoimprint lithography (NIL) and direct self-assembly (DSA) techniques.

Publications

1. "Studying the Origin of "Strain Hardening": Basic Difference Between Extension and Shear"
Liu G., Sun H., Rangou S., **Ntetsikas K.**, Avgeropoulos A., Wang S-Q.
Journal of Rheology, 57, 89-104, **2013**.
2. "Breakdown of Time-Temperature Equivalence in Startup Uniaxial Extension of Entangled Polymer Melts"
Sun H., **Ntetsikas K.**, Avgeropoulos A., Wang SQ.
Macromolecules, 46, 4151-4159, **2013**.
3. "Achieving Structural Control with Thin Polystyrene-*b*-Polydimethylsiloxane Block Copolymer Films: The Complex Relationship of Interface Chemistry, Annealing Methodology and Process Conditions"
B.M.D. O'Driscoll, Kelly R.A., Shaw M., Mokarian-Tabari P., Lontos G., **Ntetsikas K.**, Avgeropoulos A., Petkov N., Morris M.A.
European Polymer Journal, 49, 3445-3454, **2013**.
4. "Rheology of Entangled Polymers Not Far above Glass Transition Temperature: Transient Elasticity and Intersegmental Viscous Stress"
Sun H., Liu G., **Ntetsikas K.**, Avgeropoulos A., Wang SQ.
Macromolecules, 47, 5839-5850, **2014**.
5. "Thin Film Morphologies of Bulk-Gyroid Polystyrene-block-Polydimethylsiloxane under Solvent Vapor Annealing"
W. Bai, A.F. Hannon, K.W. Gotrik, H.K. Choi, K. Aissou, G. Lontos, **K. Ntetsikas**, A. Alexander-Katz, A. Avgeropoulos, C.A. Ross.
Macromolecules, 47, 6000-6008, **2014**.
6. "High Throughput Sub-10 nm Metallic Particles Organization on Templates Made by Block Copolymer Self-Assembly and Nanoimprint"
J. Arias-Zapata, J. Cordeiro, S. Bohme, C. Girardot, J. Garnier, P. Bezar, **K. Ntetsikas**, G. Lontos, A. Avgeropoulos, D. Peyrade, M. Zelsmann.
Microelectronic Engineering, 141, 155-159, **2015**.
7. "Failure behavior after stepwise uniaxial extension of entangled polymer melts"
H. Sun, P. Lin, G. Liu, **K. Ntetsikas**, K. Misichronis, N. Kang, J. Liu, A. Avgeropoulos, J. Mays, S-Q. Wang.
Journal of Rheology, 59, 751-767, **2015**.
8. "Soft Graphoepitaxy for Large Area Directed Self-assembly of Polystyrene-block-poly(dimethylsiloxane) Block Copolymer on Nanopatterned POSS Substrates Fabricated by Nanoimprint Lithography"

- D. Borah, S. Rasappa, M. Salaun, M. Zellsman, O. Lorret, G. Lontos, **K. Ntetsikas**, A. Avgeropoulos, and M. A. Morris.
Advanced Functional Materials, 25, 3425-3432, **2015**.
9. “*Immiscible Polydiene Blocks in Linear Copolymer and Terpolymer Sequences*”
G. Zapsas, D. Moschovas, **K. Ntetsikas**, S. Rangou, J.-H. Lee, E. L. Thomas, N. E. Zafeiropoulos and A. Avgeropoulos.
Journal of Polymer Science, Part B: Polymer Physics, 53, 1238-1246, **2015**.
 10. “*Universal Pattern Transfer Methods for Metal Nanostructures by Block Copolymer Lithography*”
K.-H. Tu, W. Bai, G. Lontos, **K. Ntetsikas**, A. Avgeropoulos, C. A. Ross.
Nanotechnology, 26, 375301, **2015**.
 11. “*Combining Graphoepitaxy and Electric Fields Toward Uniaxial Alignment of Solvent-Annealed Polystyrene-*b*-Poly(dimethylsiloxane) Block Copolymers*”
C. C. Kathrein, W. Bai, J. A. Currivan-Incorvia, G. Lontos, **K. Ntetsikas**, A. Avgeropoulos, A. Boker, L. Tsarkova, C. A. Ross.
Chemistry of Material, 27, 6890-6898, **2015**.
 12. “*Domain Configurations in Co/Pt and L1₀-FePt Nanowire Arrays with Perpendicular Magnetic Anisotropy*”
P. Ho, K.-H. Tu, J. Zhang, C. Sun, J.-C. Chen, G. Lontos, **K. Ntetsikas**, A. Avgeropoulos, P. Voyles, C. A. Ross.
Nanoscale, 8, 5358-5367, **2016**.
 13. “*Synthesis, Characterization and Self-Assembly of Well-Defined Linear Heptablock Quaterpolymers*”
C. Ntaras, G. Polymeropoulos, G. Zapsas, **K. Ntetsikas**, G. Lontos, A. Karanastasis, D. Moschovas, S. Rangou, C. Stewart-Sloan, N. Hadjichristidis, E. L. Thomas, A. Avgeropoulos
Journal of Polymer Science, Part B: Polymer Physics, 54, 1443-1449, **2016**.

Participation in National Conferences

1. **7th Panhellenic Polymers Conference** (Ioannina, Greece, September 28–October 1, 2008)
2. **26th Panhellenic Conference of Solid State Physics and Materials Science** (Department of Physics, University of Ioannina, Ioannina, Greece, September 26-29, 2010)
3. **8th Hellenic Polymers Conference** (Hersonissos, Crete, Greece, October 24-29, 2010)
Title: *Synthesis, Molecular Characterization and Chemical Modification of Poly(Trimethylsilyloxymethyl Ether Methacrylate)-*b*-Poly(Methyl Methacrylate)*”

- Ntetsikas K.**, Constantinou M. and Avgeropoulos A. (poster)
4. ***E-MRS 2012 Spring Meeting*** (Strasbourg, France, May 15-17, 2012)
Title: "Polydimethylsiloxane (PDMS)-based nanocomposite coatings: morphology, structure, thermal stability and optical properties"
L. E. Koutsokeras, **K. Ntetsikas**, G. Lontos, A. Avgeropoulos, P. Patsalas (poster)
Title: "Evaluation of the sp^2/sp^3 ratio of carbon materials from X-ray emission spectra"
D. F. Anagnostopoulos, L. E. Koutsokeras, D. Katsigiannopoulos, **K. Ntetsikas**, A. Avgeropoulos, P. Patsalas (oral presentation by L. E. Koutsokeras)
 5. ***APS March Meeting, 2012*** (February 27- March 2, 2012, Boston, Massachusetts, USA)
Title: "Exploring the role of long-chain branching in large deformation of entangled melts"
Liu G., **Ntetsikas K.**, Avgeropoulos A., Wang SQ. (oral presentation by Liu G.)
 6. ***9th Hellenic Polymer Conference*** (Thermi, Thessaloniki, Greece, November 29-December 1, 2012)
Title: "Nanoimprint Lithography on Diblock Copolymer Thin Films"
K. Ntetsikas, D. Moschovas, C. Delgado Simao, N. Kehagias, C. M. Sotomayor Torres, A. Avgeropoulos (oral presentation by **K. Ntetsikas**)
 7. ***The Society of Rheology 85th Annual Meeting*** (October 13-17, 2013, Montreal, QC, Canada)
Title: "A rheo-optical study of monodisperse H-polyisoprenes to delineate the nature 'strain hardening' in uniaxial extension"
Liu G., **Ntetsikas K.**, Avgeropoulos A., Wang SQ. (poster)
 8. ***2013 MRS Fall Meeting*** (December 1-6, 2013, Boston, Massachusetts, USA)
Title: "Thin Film Morphology of a Bulk-Gyroid Block Copolymer"
Bai W., Hannon A., Gotrik K., Aissou K., Choi H. K., Lontos G., **Ntetsikas K.**, Avgeropoulos A., Katz A. A., Ross C. A. (poster)
 9. ***APS March Meeting 2014*** (March 3–7, 2014, Denver, Colorado, USA)
Title: 'Shear and extensional rheology of model branched polymer melts (H shaped and grafted)' (oral presentation by Liu G.)
Liu G., **Ntetsikas K.**, Misichronis K., Mays J., Avgeropoulos A., Wang SQ.
 10. ***APS March Meeting 2014*** (March 3–7, 2014, Denver, Colorado, USA)
Title: 'Thin Film Morphologies of Bulk-Gyroid Polystyrene-block-Polydimethylsiloxane under Solvent Vapor Annealing'
W. Bai, A. Hannon, K. Gotrik, H.K. Choi, K Aissou, Lontos G., **Ntetsikas K.**, Avgeropoulos A., Katz A. A., Ross C. A. (oral presentation by W. Bai)
 11. ***3rd International Conference on Industrial Technologies Research and Innovation*** (April 9-11, 2014, Athens, Greece)

Participation in Research Programs

- **Funded by the European Union under the Call identifier: FP7-NMP-2009-SMALL-3 with Proposal No: CP-FP 245565-2 LAMAND (24 months, 1/7/2010-30/6/2012), title: “Large Area Molecularly Assembled Nanopatterns for Devices” and Acronym: “LAMAND”, as *Researcher*.**
- **Funded by the European Union under the Call identifier:FP7-NMP-2007-LARGE-1, with Proposal No: CP-IP 213939-1 POCO (48 months, 1/11/2008-31/10/2012) entitled: “Carbon Nanotube Confinement Strategies to Develop Novel Polymer Matrix Composites” and acronym “POCO”, as *Researcher*.**

Visits to Foreign Institutes-Universities

- **February 4-9, 2012:** Participation together with PhD advisor at University of Newcastle Upon Tyne, Department of Chemistry for the 18-Month Meeting for the EU funded proposal (LAMAND).
- **May 15-29, 2012:** Visiting Researcher, *Phononics and Photonics Nanostructures Group, Catalan Institute of Nanotechnology, Campus de la UAB, Barcelona, Spain, Collaboration through EU funded proposal (LAMAND):* Training and research on nanolithography techniques for diblock copolymers of PS-b-PDMS, PS-b-PMMA, PS-b-PEO, PS-b-PB, PI-b-PPMDSS types.
Supervisor: Professor Clivia Sotomayor Torres
- **June 3-16, 2013:** Visiting Researcher, *Phononics and Photonics Nanostructures Group, Catalan Institute of Nanotechnology, Campus de la UAB, Barcelona, Spain, Collaboration through EU funded proposal (LAMAND):* Research on nanolithography techniques for triblock copolymers of PS-b-PDMS-b-PS type and comparison with results from PS-b-PDMS type.
Supervisor: Professor Clivia Sotomayor Torres