PERSONAL INFORMATION

NEJIB KASMI

Current address: Petange, Luxembourg

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Reviewer Board Member of MDPI

Scientific Societies:

- European network of FURan based chemicals and materials FOR a Sustainable development (COST Action CA18220, LINK)
- American Chemical Society: Division of Polymer Chemistry (POLY)

Journals Reviewer: Polymers (MDPI), Materials (MDPI), Polymer Testing (Elsevier).

Skype: NEJIB KASMI Personal website: https://nejibkasmi.com/

Links related to Nejib's Profile: Scopus, LinkedIn, Google Scholar, ResearchGate, ORCID

Language(s): English (Proficient user), French (Independent user), German (Basic user), Arabic (Mother tongue)

Ph.D. in Polymer Chemistry
Master's Degree in Synthesis and Reactivity in Organic Chemistry

JOB-RELATED SKILLS AND EXPERTISE

- Deep knowledge of Design, Synthesis, and Study of fully biobased polymers, mainly polyesters and copolyesters
- Excellent command of several synthesis techniques of Polyesters: Melt Polycondensation, Solid state Polycondensation, Polymer Blending, Ring-Opening Polymerization, In Situ polymerization, etc.
- Sustainable Furan-based polyesters, copolyesters, polyester Blends, and Isocyanate-free polyurethane / Investigation of crystallization, melting behavior, and biodegradability of (Co-)polymers / Organic chemistry / (Microwave-assisted) organic synthesis / Effective supervision skills (acquired through my experience as co-supervisor of MSc and PhD students), etc.

PROFESSIONAL AND WORK EXPERIENCE

01/03/2019 to present — Junior Research & Technology Associate
Green Polymers Group, Department of Materials Research and Technology (MRT), Luxembourg Institute of Science and Technology (LIST), Luxembourg

01/04/2018-31/10/2018 — Postdoctoral Fellowship
BIKIARIS Group (LINK), Laboratory of Polymer Chemistry and Technology, Aristotle University of Thessaloniki, Greece
Research project: Furan-based Polyesters (LINK)
Main activities (supervision: Prof. Dimitrios Bikiaris, LINK): Design, Synthesis, and Study of new fully biobased Furanoate (Co-)polyesters and polyester blends from renewable resources-derived monomers

01/07/2017-31/03/2018 — Temporary Research Fellowship
BIKIARIS Group, Aristotle University of Thessaloniki, Greece
Main activities (project: Furan-based Polyesters): Synthesis, investigation of crystallization behavior, and thermal analysis of biobased Furanoate (Co-)polyesters and sustainable polyester blends

16/09/2016-30/06/2017 — Mobility grant within the frame of Erasmus+ International Programme
BIKIARIS Group, Aristotle University of Thessaloniki, Greece
Main activities (project: Furan-based Polyesters): Different studies have been conducted on biobased poly(ethylene furanoate) polyester (PEF)

01/05/2016-31/07/2016 — Research Assistant
Polymer Engineering Group, University of Padova, Italy
Main activities (supervision: Prof. Alessandra Lorenzetti, LINK): Synthesis of rigid polyurethane foam insulation panels from new polyols based on renewable resources
Funding source: National Interuniversity Consortium of Materials Science and Technology, Italy

29/01/2016-30/04/2016 — PhD Internship 3
Polymer Engineering Group, University of Padova, Italy
Main activities: Synthesis of thermoplastic polyurethanes from new aromatic monomers derived from isosorbide

10/05/2015-10/06/2015 — PhD Internship 2
Polymer Engineering Group, University of Padova, Italy
Main activities: Microwave-assisted synthesis of new biobased chiral monomers derived from isosorbide

01/05/2014-30/06/2014 — PhD Internship 1
Department of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna, Italy
Main activities (supervision: Prof. Annamaria Celli, LINK):
- Synthesis of new Isosorbide-based polyesters by melt polycondensation procedure
- Learning of new synthesis techniques and physicochemical analysis method specific for polymers

AWARDS & ACHIEVEMENTS

7-13/07/2018 Fully Funded Scholarship to attend IUPAC Postgraduate Summer School on Green Chemistry – Venice, Italy

13/07/2018 ***Best Presentation Award*** at the IUPAC Postgraduate Summer School on Green Chemistry – Venice, Italy, awarded by **L'Oréal** Group and **Eni** Group. (LINK)

Presentation Title: *Synthesis of New Eco-Friendly Copolyesters From Fully Renewable Resources: Poly(ε-Caprolactone-Co-Pentylene 2,5-Furandicarboxylate)*

Research project: Furan-based polyesters (09.2016 – 10.2018, LINK): Investigation of polymerization conditions and catalysts for a variety of Furanoate polyesters, copolyesters and nanocomposites and how important parameters like thermal transitions, thermal degradation, biodegradability and mechanical properties are influenced.

Collaborators: D.N. Bikiaris, G.Z. Papageorgiou, N. Kasmi, Z. Terzopoulou. L. Papadopoulos.

EDUCATIONAL QUALIFICATIONS

Jan 2014-Mar 2018 PhD in polymer chemistry (Merit: Very Honorable)
University of Monastir, Tunisia
PhD dissertation Title: *Valorisation of Isosorbide: Synthesis of new functional polymers*
Doctoral research activities were supervised by Professor Dimitrios Bikiaris from Aristotle University of Thessaloniki, Greece (LINK)

Sep 2011-Nov 2013 Master's degree in synthesis and reactivity in organic chemistry
University of Monastir, Tunisia
Master Thesis Title: *Synthesis and characterization of new functional structures based on isosorbide*
With Distinction (16.50 /20). Final average mark (M1 +M2): 13.17/20. Number of acquired credits: 114/120

Sep 2008-Jun 2011 Bachelor's degree in chemistry
University of Monastir, Tunisia
Number of acquired credits: 166/180 – (Rank: First year: **5**/55, Second year: **7**/59, Third year: **6**/67)

PRESENTATIONS AT INTERNATIONAL CONFERENCES

15-17/07/2020 1 communication at "Milan Polymer Days Congress - MIPOL2020" – Milan, Italy
- Solvent-free synthesis of new fully biobased diol monomers through industrially viable approach: Toward new insights into the valorization of vanillic acid-based polyesters. N. Kasmi, G.Z. Papageorgiou, D.N. Bikiaris

21-25/10/2019 1 communication at "6th EPNOE International Polysaccharide Conference" – Aveiro, Portugal
- Novel Fully Biobased Non-Isocyanate Polyurethanes from Hemicelluloses. N. Kasmi, R. Dieden, D. da Silva-Perez, Y. Habibi

9-14/06/2019 1 communication at "European Polymer Congress 2019 (EPF 2019)" – Hersonissos Heraklion Crete, Greece
- From 2,5-furandicarboxylatic acid to vanillic acid novel biobased polyesters with promising properties. N. Kasmi, G.Z. Papageorgiou, D.N. Bikiaris

11-13/03/2019 1 communication at "Milan Polymer Days Congress - MIPOL2019" – Milan, Italy
- Synthesis, structure, and properties of novel biobased polyesters obtained from furan dicarboxylic acid and new fully renewable diols based on vanillic acid. N. Kasmi, G.Z. Papageorgiou, D.N. Bikiaris

30/09/2018-03/10/2018 1 communication at "12th Hellenic Polymer Society International Conference 2018" – Ioannina, Greece
- Synthesis of new eco-friendly copolyesters from fully renewable resources: poly(ε-caprolactone-co-hexamethylene 2,5-furandicarboxylate). N. Kasmi, G.Z. Papageorgiou, D.N. Bikiaris

7-13/07/2018 1 communication at "IUPAC POSTGRADUATE SUMMER SCHOOL ON GREEN CHEMISTRY" – Venice, Italy
- Synthesis of new eco-friendly copolyesters from fully renewable resources: poly(ε-caprolactone-co-pentylene 2,5-furandicarboxylate). N. Kasmi, G.Z. Papageorgiou, D.N. Bikiaris

28-31/05/2018 1 communication at "Bordeaux Polymer Conference" - BPC 2018 - Bordeaux, France
- Synthesis of new fully biobased random copolyesters: poly(hexamethylene-co-isosorbide 2,5-furandicarboxylate). N. Kasmi, G.Z. Papageorgiou, D.N. Bikiaris

11-13/9/2017 3 communications at "6th International Conference on Biodegradable and Biobased Polymers" - BIOPOL 2017- Mons, Belgium
- Synthesis of new fully renewable resources-based copolyesters: poly(1,4-cyclohexanedimethanol-co-isosorbide 2,5-furandicarboxylate). N. Kasmi, M. Majdoub, G.Z. Papageorgiou, D.N. Bikiaris
- Solid-state polymerization of poly(ethylene furanoate) biobased polyester: effect of catalyst type on molecular weight increase. N. Kasmi, M. Majdoub, G.Z. Papageorgiou, D.N. Bikiaris
- Crystallization and melting behavior of Poly(ethyene furanoate): Effects of molecular weight and nanofillers. G.Z. Papageorgiou, N. Kasmi, V. Mandraki, S. Exarhopoulos, D.N. Bikiaris

2-7/07/2017 1 communication at "European Polymer Federation, EPF Lyon 2017" – Lyon, France
- Poly(ethylene-2,5-furanoate) (PEF); A promising polyester for food packaging applications: from research synthesis to reality. D.N. Bikiaris, V. Tsanaktsis, Z. Terzopoulou, M. Nerantzaki, A. Chondroyiannis, E. Karakatsianopoulou, N. Kasmi, G.Z. Papageorgiou

15-16/2/2017 1 communication at "Milan Polymer Days, MIPOL2017" – Milan, Italy
- New thermally stable Isoidide-derived diols based on Isosorbide for the preparation of thermoplastic polyurethanes: Microwave-assisted synthesis and optimization. N. Kasmi, M. Majdoub, M. Modesti, A. Lorenzetti

3-7/5/ 2015 1 communication at "International Symposium on Green Chemistry" - ISGC2015 - La Rochelle, France
- Synthesis and characterization of new polyurethanes based on isosorbide. N. Kasmi, N. Hammami, M. Majdoub

REFEREED JOURNAL PUBLICATIONS

Top Co-authors: Prof. Dimitrios Bikiaris (LINK): [**20**] - Prof. George Z. Papageorgiou (LINK): [**19**]

To be submitted (1)

(23) N. Kasmi, Z. Terzopoulou, D.N. Bikiaris, Y. Habibi. Modification of Isosorbide-based polyester with 2,5-Furandicarboxylic acid (FDCA) for the synthesis of fully biobased furanoate plastics with enhanced Tg and biodegradability, to be submitted to *Green Chemistry* in January **2021**.

Submitted (2)

(22) L. Papadopoulos, A. Zamboulis, N. Kasmi, M. Wahbi, C. Nannou, D. A. Lambropoulou, M. Kostoglou, G. Z. Papageorgiou, D. N. Bikiaris*. Investigation of the catalytic activity and reaction kinetic modeling of two antimony catalysts in the synthesis of poly(ethylene furanoate), Submitted to *Green Chemistry* **2020**.

(21) N. Kasmi, C. Pinel, D. Da Silva Perez, R. Dieden, Y. Habibi. Synthesis and characterization of fully biobased polyesters with tunable branched architectures, Submitted to *Polymer Chemistry* **2020**.

Published papers (20)

(20) N. Kasmi, L. Papadopoulos, Y. Chebbi, G.Z. Papageorgiou, D.N. Bikiaris*. Effective and facile solvent-free synthesis route to novel biobased monomers from vanillic acid: Structure-thermal property relationships of sustainable polyesters, *Polym. Degrad. Stab.* **2020**, 181, 109315. LINK

(19) Z. Terzopoulou, M. Wahbi, N. Kasmi, G.Z. Papageorgiou, D.N. Bikiaris*. Effect of additives on the thermal and thermo-oxidative stability of poly(ethylene furanoate) biobased polyester, *Thermochim. Acta* **2020**, *686,* 178549. LINK

(18) B. Quienne, N. Kasmi, R. Dieden, S. Caillol, Y. Habibi*. Isocyanate-free fully biobased star polyester-urethanes: synthesis and thermal properties, *Biomacromolecules,* **2020**, 21, 5, 1943–1951. LINK

(17) N. Kasmi, N. Ainali, E. Agapiou, L. Papadopoulos, G.Z. Papageorgiou. D.N. Bikiaris*. Novel High Tg fully biobased poly(hexamethylene-co-isosorbide-2,5-furan dicarboxylate) Copolyesters: Synergistic Effect of Isosorbide Insertion on Thermal performance Enhancement, *Polym. Degrad. Stab.* **2019**, *169*, 108983. LINK

(16) N. Kasmi, M. Wahbi, L. Papadopoulos, Z. Terzopoulou, N. Guigo, N. Sbirrazzuoli, G.Z. Papageorgiou*. D.N. Bikiaris*. Synthesis and characterization of two new biobased poly(pentylene 2,5-furandicarboxylate-co-caprolactone) and poly(hexamethylene 2,5-furandicarboxylate-co-caprolactone) copolyesters with enhanced enzymatic hydrolysis properties, *Polym. Degrad. Stab.* **2019***, 160,* 242- 263. LINK

(15) N. Kasmi, N. Poulopoulou, Z. Terzopoulou, D.G. Papageorgiou*, D.N. Bikiaris, G.Z. Papageorgiou*. Sustainable Thermoplastics from Renewable Resources: Thermal behavior of Poly(1,4-cyclohexane dimethylene 2,5-furandicarboxylate), *Eur. Polym. J.* **2019***, 112,* 1-14. LINK

(14) Y. Chebbi, N. Kasmi, M. Majdoub, P. Cerruti, G. Scarinzi, M. Malinconico, G. Dal Poggetto, G.Z. Papageorgiou, D.N. Bikiaris*. Synthesis, Characterization, and Biodegradability of Novel Fully Biobased Poly(decamethylene-co-isosorbide 2,5-furandicarboxylate) Copolyesters with Enhanced Mechanical Properties, *ACS Sustain. Chem. Eng.* **2019***, 7*, 5501-5514. LINK

(13) Y. Chebbi, N. Kasmi, M. Majdoub, G.Z. Papageorgiou*, D.N. Achilias, D.N. Bikiaris*. Solid-State Polymerization of Poly(Ethylene Furanoate) Biobased Polyester, III: Extended Study on Effect of Catalyst Type on Molecular Weight Increase, *Polymers* **2019**, *11*, 438. LINK

(12) N. Poulopoulou, A. Pipertzis, N. Kasmi, D.N. Bikiaris, D.G. Papageorgiou, G. Floudas, G.Z. Papageorgiou*. Green polymeric materials: On the dynamic homogeneity and miscibility of furan-based polyester blends, *Polymer* **2019**, *174*, 187-199. LINK

(11) N. Poulopoulou, N. Kasmi, M. Siampani, Z.N. Terzopoulou, D.N. Bikiaris, D.S. Achilias, D.G. Papageorgiou*, G.Z. Papageorgiou*. Exploring Next-Generation Engineering Bioplastics: Poly(alkylene furanoate)/Poly(alkylene terephthalate) (PAF/PAT) Blends, *Polymers* **2019**, *11*, 556. LINK

(10) Z. Terzopoulou, E. Tarani, N. Kasmi, L. Papadopoulos, K. Chrissafis*, D.G. Papageorgiou, G.Z. Papageorgiou, D.N. Bikiaris*. Thermal Decomposition Kinetics and Mechanism of In-Situ Prepared Bio-Based Poly(propylene 2,5-furan dicarboxylate)/Graphene Nanocomposites, *Molecules* **2019**, *24*, 1717. LINK

(9) N. Kasmi, M. Majdoub, G.Z. Papageorgiou*, D.N. Bikiaris*. Synthesis and crystallization of new fully renewable resources-based copolyesters: Poly(1,4-cyclohexanedimethanol-co-isosorbide 2,5-furandicarboxylate), *Polym. Degrad. Stab.* **2018**, *152*, 177-190. LINK

(8) N. Kasmi, G.Z. Papageorgiou*, D.S. Achilias, D.N. Bikiaris*. Solid-State Polymerization of Poly(Ethylene Furanoate) Biobased Polyester, II: An Efficient and Facile Method to Synthesize High Molecular Weight Polyester Appropriate for Food Packaging Applications, *Polymers* **2018**, *10*, 471. LINK

(7) N. Kasmi, Z. Terzopoulou, G.Z. Papageorgiou, D.N. Bikiaris*. Poly(1,4-cyclohexanedimethylene 2,6-naphthalate) polyester with high melting point: effect of different synthesis methods on molecular weight and properties, *eXPRESS Polym. Lett.* **2018**, *12*,

227-237. LINK

(6) N. Poulopoulou, N. Kasmi, D.N. Bikiaris, D.G. Papageorgiou, G. Floudas, G.Z. Papageorgiou*. Sustainable polymers from renewable resources: Polymer blends of furan-based polyesters, *Macromol. Mater. Eng*. **2018**, 1800153. LINK

(5) N. Kasmi, M. Majdoub, G.Z. Papageorgiou*, D.S. Achilias, D.N. Bikiaris*. Solid-state polymerization of poly(ethylene furanoate) biobased polyester, I: Effect of catalyst type on molecular weight increase, *Polymers* **2017**, *9*, 607. LINK

(4) N. Kasmi, M. Roso, N. Hammami, M. Majdoub, C. Boaretti, P. Sgarbossa, C. Vianello, G. Maschio, M. Modesti, A. Lorenzetti*. Microwave-assisted synthesis of isosorbide-derived diols for the preparation of thermally stable thermoplastic polyurethane, *Des. Monomers Polym.* **2017**, *20*, 547-563. LINK

(3) Z. Terzopoulou, N. Kasmi, V. Tsanaktsis, N. Doulakas, D.N. Bikiaris*, D.S. Achilias, G.Z. Papageorgiou*. Synthesis and Characterization of Bio-Based Polyesters: Poly(2-methyl-1,3-propylene-2,5-furanoate), Poly(isosorbide-2,5-furanoate), Poly(1,4-cyclohexanedimethylene-2,5-furanoate), *Materials* **2017***, 10,* 801. LINK

(2) Z. Terzopoulou, E. Karakatsianopoulou, N. Kasmi, V. Tsanaktsis, N. Nikolaidis, M. Kostoglou, G.Z. Papageorgiou, D.A. Lambropoulou, D.N. Bikiaris*. Effect of catalyst type on molecular weight increase and coloration of poly(ethylene furanoate) biobased polyester during melt polycondensation, *Polym. Chem.* **2017***, 8,* 6895-6908. LINK

(1) Z. Terzopoulou, E. Karakatsianopoulou, N. Kasmi, M. Majdoub, G.Z. Papageorgiou, D.N. Bikiaris*. Effect of catalyst type on recyclability and decomposition mechanism of poly(ethylene furanoate) biobased polyester*, J. Anal. Appl. Pyrolysis* **2017***, 126,* 357-370. LINK