

S. Litwin, G. Melilli, L. Vincent, M. C.P. Roelands, R. Cuypers, P. Janssen, A. F. Sousa, N. Sbirrazzuoli, N. Guigo.

Dissolution kinetics of Poly(styrene-co acrylonitrile) below and above its glass transition temperature. *Materials Today Communications*, 2026, 50, 114556.

G. Matta, N. Courtois, J-B. Champenois, S. Perrin, N. Sbirrazzuoli.

Thermal Behavior Investigation of Bitumen Embedding Sodium Nitrate: A Non-Isothermal Study. *Journal of Nuclear Materials*, 2026, 619, 156272.

N. Pardalis, E. Xanthopoulou, N. Jourdainne, P.A. Klonos, A. Kyritsis, N. Guigo, D.N. Bikiaris. Effect of Carbon-Based Nanofillers with Different Geometries on the Crystallization Behavior and Molecular Dynamics of Poly(Butylene Furanoate) (PBF) *Macromolecular Chemistry and Physics*, 2025, 226, 1-15.

L. M. Grilo, S. Faoro, B. Agostinho, A. F. Sousa, N. Guigo, K. Loos, D. Maniar, T. M. Lacerda. Synthesis of semi-rigid-biobased polyesters from renewable furanic cyclobutane diacid *Polym. Chem.*, 2025, 16, 3808.

D. Dalla Torre, G. Trapasso, N. Jourdainne, N. Guigo, F. Aricò. Etherification of Bio-Based Furanic Compounds via Continuous Flow *Adv. Sustainable Syst.* 2025, 9, e00526.

S. V. Pandeirada, C. F. Araújo, M. M. Nolasco, P. D. Vaz, S. Rudić, A. J.D. Silvestre, N. Guigo, P. Ribeiro-Claro, A. F. Sousa. Unveiling the uncommon crystallization features of 3,4-PEF, a thermal and DFT study *Polymer*, 2025, 320, 28065.

T. Cabanis, A. Auroux, J.-L. Dubois, N. Sbirrazzuoli, G. Postole. An innovative approach to evidence pathways in a reactional mechanism of heterogeneous catalysis. *Applied Catalysis O: Open*, 2025, 208, 207073.

L. Pezzana, G. Melilli, E. Malmström, M. Johansson, M. Sangermano, N. Sbirrazzuoli, N. Guigo. Exploiting epoxy-based monomers from biobased ferulic acid and furfuryl amine for a new set of bio-derived materials. *Reactive and Functional Polymers*, 2025, 216, 106443.

A. Lesiak, L. Vincent, J. Schollaert, L. Safou, F. Orange, S. Pagnotta, N. Sbirrazzuoli, N. Guigo. Effect of mechanical recycling and virgin PBR addition on the properties of ABS recovered from WEEE: A multi-technique characterization. *Waste Management Bulletin*, 2025, 3, 100238.

N. Sbirrazzuoli, F-E. N. Lahfaïdh, A. F. Sousa, G. Molinari, M. C. Righetti. Crystallization Behavior of Biobased Poly(butylene furandicarboxylate) (PBF): Influence of Amorphous Chain Mobility, Diffusion and Nucleation on Thermodynamic and Kinetic control. *Polymer*, 2025, 335, 128845.

F-E. N. Lahfaïdh, N. Guigo, L. Vincent, N. Sbirrazzuoli. Shedding light on the impact of a dissolution-precipitation recycling process on crystallization and thermal stability of PBS. *Polymer Testing*, 2025, 150, 108924.

M. Venturi, N. Lotti, M. Soccio, N. Sbirrazzuoli. Non-Isothermal Crystallization Kinetics as a Probe for Molecular Interactions in Biobased Aromatic Polyester. The Effect of Furan, Thiophene and Benzene Ring.

Macromolecules, 2025, 58(11), 5782–5795.

N. Sbirrazzuoli, F-E. N. Lahfaïdh, S. Vyazovkin.
Isoconversional kinetics of enthalpy recovery in glass annealed into equilibrium.
Polymer, 2025, 329, 128474.

L. Quinquet, L. Vincent, N. Guigo, N. Sbirrazzuoli.
Polyurethane free biobased epoxy binder for cork agglomeration.
Industrial Crops & Products, 2025, 229, 120972.

G. Melilli, P. Rousselle, M. Mehiri, N. Guigo, D. Pin, N. Sbirrazzuoli.
Bio-derived green algal metabolite as latent crosslinking agent for protein-based hydrogel and its use for skin repair.
ACS Applied Biomaterials, 2025, 8, 3, 2558–2568.

M. Jamali Moghadam Siahkali, N. Guigo, L. Vincent, N. Sbirrazzuoli
Catalytic effect of eutectic hardeners to polymerize epoxidized vegetable oil for synthesis of fully biobased thermosets at low temperatures.
Macromolecules, 2025, 58, 1, 601–615.

Guigo N. (2024) Editorial. *Green Materials* 12(4): 223–224.

E. D. Balla, P. A. Klonos, A. Kyritsis, M. Bertoldo, N. Guigo, D. N. Bikiaris.
Novel Biobased Copolymers Based on Poly(butylene succinate) and Cutin: In Situ Synthesis and Structure Properties Investigations.
Polymers 2024, 16(16), 2270

S. Moozhiyil, P. Maïté F. Tronco, M. Ponçot, C. C.S, N. Guigo, M. Malfois, N. Kalarikkal, S. Thomas, I. Royaud, D. Rouxel.
Quantifying the Crystalline Polymorphism in PVDF: Comparative Criteria Using DSC, WAXS, FT-IR, and Raman Spectroscopy
ACS Appl. Polym. Mater. 2024, 6, 14, 8291–8305.

P. Dellièrè, N. Guigo.
Tuning conditions for the amine-functionalization of carbonyls formed in biobased polyfurfuryl alcohol.
Giant, 18, 2024, 100283

M. Annatelli, J. E. Sánchez-Velandia, G. Mazzi, S. V. Pandeirada, D. Giannakoudakis, S. Rautiainen, A. Esposito, S. Thiyagarajan, A. Richel, K. S. Triantafyllidis, T. Robert, N. Guigo, A. F. Sousa, E. García-Verdugo, F. Aricò.
Beyond 2,5-furandicarboxylic acid: status quo, environmental assessment, and blind spots of furanic monomers for bio-based polymers.
Green Chem., 2024, 26, 8894.

E. Poschia, P. Dellièrè, R. Sanchez, K. Triantafyllidis, N. Guigo.
Sustainable alliance between nanocellulose and biobased polyfurfuryl alcohol
Industrial Crops and Products, 2024, 212, 118346.

G. Melilli, S. Litwin, L. Vincent, N. Sbirrazzuoli, M. C.P. Roelands, J. C. van der Waal, R. Cuypers, N. Guigo.
Monitoring in-situ dissolution of polystyrene-acrylonitrile (SAN) via calorimetry and spectroscopy.
Journal of Molecular Liquids, 2024, 415, 126336.

P. Delliere, L. Vincent, N. Sbirrazzuoli, N. Guigo.
Oxygen-induced surface hardening and aromatization of thermoset furanic biobased resin: origin and consequences.

Polymer Degradation and Stability, 2024, 230, 111020.

E. Forestier, C. Combeaud, N. Guigo, N. Sbirrazzuoli, G. Monge, J-M. Haudin.
Poly(ethylene 2,5-furandicarboxylate) pole figures to determine the microstructural scheme upon uniaxial stretching: link between orientation and crystallisation.

Polymer, 2024, 312, 127613.

F-E. N. Lahfaïdh, N. Guigo, L. Vincent, N. Sbirrazzuoli.
Exploring and understanding the recycling of a biobased epoxy thermoset via saponification.

ACS Sustainable Resource Management, 2024, 1(4), 1834–1844.

M. Jamali-Moghadam-Siahkali, N. Guigo, L. Vincent, N. Sbirrazzuoli.
Low viscosity eutectic hardeners for more sustainable cross-linking conditions

ACS Appl. Polym. Mater. 2024, 6, 6334–6346.

S. Vyazovkin*, N. Sbirrazzuoli.
Isoconversional methods as single-step kinetic approximation.

Thermochim. Acta, 2024, 733, 179692.

N. Sbirrazzuoli.
Advanced isoconversional kinetic analysis: insight in mechanisms and simulations. Successes and future.

Thermochim. Acta, 2024, 733, 179688.

Article sur invitation de l'éditeur pour l'édition spéciale « Modern Isoconversional kinetics. Developments and Applications ».

N. Sbirrazzuoli, S. Vyazovkin.
Two step model for crosslinking polymerization with account of diffusion.

Chemical Engineering Journal, 2024, 481, 148414.

P. Delliere, P. Antonczak, N. Guigo.
Impact of amine functionalization on poly(furfuryl alcohol) properties

Polymer Testing, 2023, 129, 108248.

P. Delliere, N. Guigo.
Revealed pathways of furan ring opening and surface crosslinking in biobased polyfurfuryl alcohol

European Polymer Journal, 2023, 187, 111869.

P. Delliere, A. Pizzi, N. Guigo.
Structural Variations in Biobased Polyfurfuryl Alcohol Induced by Polymerization in Water

Polymers, 2023, 15(7), 1745.

P. Delliere, N. Guigo.
Revealed pathways of furan ring opening and surface crosslinking in biobased polyfurfuryl alcohol

European Polymer Journal, 2023, 187, 111869.

E. Xanthopolou, Z. Terzopoulou, A. Zamboulis, S. Koltsakidis, D. Tzetzis, K. Peponaki, D. Vlassopoulos, N. Guigo, D. N. Bikiaris, G. Z. Papageorgiou.
Poly(hexylene vanillate): Synthetic Pathway and Remarkable Properties of a Novel Aliphatic Lignin-Based Polyester

ACS Sustainable Chemistry and Engineering, 2023, 11(4), 1569–1580.

N. Guigo, G. Z. Papageorgiou, N. Pouloupoulou, D. N. Bikiaris, N. Sbirrazzuoli.
Kinetics and mechanism of nonisothermal crystallization of biobased poly(hexamethylene 2,5-furan dicarboxylate).
Polymer, 2023, 285, 126366.

S. Vyazovkin, N. Sbirrazzuoli.
Nonisothermal Crystallization Kinetics by DSC: Practical Overview (Review).
Processes, 2023, 11(5), 1438.
Article sur invitation de l'éditeur pour la Special Issue : "Thermal Analysis and Multi-Scale Modeling for Chemical Processes".

G. Matta, N. Courtois, J-B. Champenois, S. Perrin, N. Sbirrazzuoli.
Kinetic analysis of pyrolysis and thermal oxidation of bitumen.
Thermochim. Acta, 2023, 724, 179514.

L. Pezzana, G. Melilli, N. Guigo, N. Sbirrazzuoli, M. Sangermano.
Photopolymerization of furan-based monomers: exploiting UV-light for a new age of green polymers.
Reactive and Functional Polymers, 2023, 185, 105540.

M. Jamali Moghadam Siahkali, N. Guigo, N. Sbirrazzuoli.
Crosslinking mechanisms of a rigid plant oil-based thermoset from furfural-derived cyclobutane.
Macromolecules, 2023, 56(2), 404-415.

E. Forestier, C. Combeaud, N. Guigo, N. Sbirrazzuoli.
Mechanical behaviour and induced microstructural development upon simultaneous and balanced biaxial stretching of Poly(ethylene furandicarboxylate), PEF.
Polymers 2023, 15(3), 661.
Invitation pour la "special issue" : State-of-the-Art Polymer Science and Technology in France.

L. Pezzana, G. Melilli, M. Sangermano, N. Sbirrazzuoli, N. Guigo.
Sustainable approach for coating production: Room temperature curing of diglycidyl furfuryl amine and itaconic acid with UV-induced thiol-ene surface post-functionalization.
Reactive and Functional Polymers, 2023, 182, 105486.

N. Sbirrazzuoli.
Kinetic analysis of complex chemical reactions by coupling model-free and model-fitting analysis.
Thermochim. Acta, 2023, 719, 179416.

L. Pezzana, G. Melilli, N. Guigo, N. Sbirrazzuoli, M. Sangermano.
Cross-Linking of Biobased Monofunctional Furan Epoxy Monomer by Two Steps Process, UV Irradiation and Thermal Treatment.
Macromol. Chem. Phys., 2023, 224(1), 2200012.

P. Dellièrè, N. Guigo.
Exploring New Horizons for Bio-Based Poly(furfuryl alcohol) by Exploiting Functionalities Offered by Side Reactions.
ACS Macro Letters, 2022, 11, 1202–1206.

S.L. Zelinka, M. Altgen, L. Emmerich, N. Guigo, T. Keplinger, M. Kymäläinen, E. E. Thybring, L. G. Thygesen.
Review of Wood Modification and Wood Functionalization Technologies
Forests, 2022, 13 (7), 1004.

- L. Quinquet, P. Delliere, N. Guigo.
Conditions to Control Furan Ring Opening during Furfuryl Alcohol Polymerization
Molecules, 2022, 27 (10), 3212.
- V. Haas, J. Wenger, L. Ranacher, N. Guigo, A.F. Sousa, T. Stern.
Developing future visions for bio-plastics substituting PET – A backcasting approach
Sustainable Production and Consumption, 2022, 31, 370–383.
- P. Delliere, N. Guigo.
Monitoring the Degree of Carbonyl-Based Open Structure in a Furanic Macromolecular System
Macromolecules, 2022, 55 (4), 1196–1204.
- L. Pezzana, R. Wolff, G. Melilli, N. Guigo, N. Sbirrazzuoli, J. Stampfl, R. Liska, M. Sangermano*.
Hot-lithography 3D printing of biobased epoxy resins.
Polymer, 2022, 254, 125097.
- G. Melilli, N. Guigo, T. Robert, N. Sbirrazzuoli.
Radical Oxidation of Itaconic Acid-Derived Unsaturated Polyesters under Thermal Curing Conditions.
Macromolecules, 2022, 55(20), 9011–9021.
- L. Pezzana, G. Melilli, P. Delliere, D. Moraru, N. Guigo, N. Sbirrazzuoli, M. Sangermano.
Thiol-ene biobased networks: Furan allyl derivatives for green coating applications.
Progress in Organic Coatings, 2022, 173, 107203.
- S. Vyazovkin*, D. Achilias, X. Fernandez-Francos, A. Galukhin, N. Sbirrazzuoli.
ICTAC Kinetics Committee recommendations for analysis of thermal polymerization kinetics.
Thermochim. Acta, 2022, 714, 179243.
- E. Forestier, C. Combeaud, N. Guigo, N. Sbirrazzuoli.
A proposal for enhanced microstructural development of Poly(ethylene 2,5-furandicarboxylate), PEF, upon stretching: On strain-induced crystallization and amorphous phase stability improvement.
Polymer, 2022, 246, 124775.
- A. Sangregorio, N. Guigo, L. Vincent, E. de Jong, N. Sbirrazzuoli.
Furanic humins from biorefinery as biobased binder for bitumen.
Polymers, 2022, 14(5), 1019.
- N. Guigo, F. Jérôme, A. F. Sousa.
Biobased furanic derivatives for sustainable development
Green Chemistry, 2021, 23 (24), 9721–9722. (Editorial)
- A.F. Sousa, R. Patrício, Z. Terzopoulou, D. N. Bikiaris, T. Stern, J. Wenger, K. Loos, N. Lotti, V. Siracusa, A. Szymczyk, S. Paszkiewicz, K. S. Triantafyllidis, A. Zamboulis, M. S. Nikolic, P. Spasojevic, S. Thiyagarajan, D. S. van Es, N. Guigo.
Recommendations for replacing PET on packaging, fiber, and film materials with biobased counterparts
Green Chemistry, 2021, 23 (22), 8795-8820.
- S. Zaidi, M. J. Soares, A. Bougarech, S. Thiyagarajan, N. Guigo, S. Abid, M. Abid, A.J. D. Silvestre, A. F. Sousa.
Unravelling the para- and ortho-benzene substituent effect on the glass transition of renewable wholly (hetero-)aromatic polyesters bearing 2,5-furandicarboxylic moieties.
European Polymer Journal, 2021, 150, 110413.

L. Pezzana, G. Melilli, N. Guigo, N. Sbirrazzuoli, M. Sangermano.
Cationic UV-curing of bioderived epoxy furan-based coatings: Tailoring the final properties by in situ formation of hybrid network and addition monofunctional monomer.
ACS Sustainable Chem. Eng., 2021, 9, 17403–17412.

C. Menager, N. Guigo, L. Vincent, N. Sbirrazzuoli.
Suberin from cork as a tough cross-linker in bioepoxy resins.
ACS Appl. Polym. Mater., 2021, 3, 12, 6090–6101.

J. Tellers, P. Willems, B. Tjeerdma, N. Sbirrazzuoli, N. Guigo
Spent coffee grounds as property enhancing filler in a wholly bio-based epoxy resin.
Macromol. Mater. Eng., 2021, 306, 2100323.

E. Forestier, C. Combeaud, N. Guigo, G. Corvec, C. Pradille, N. Sbirrazzuoli, N. Billon.
Comparative analysis of the mechanical behaviour of PEF and PET upon uniaxial stretching based on the Time/Temperature Superposition principle.
Polymers, 2021, 13(19), 3295. Open Access.

J. Tellers, N. Sbirrazzuoli, N. Guigo.
A Rigid Plant oil-based thermoset with Furfural derived cross-linker.
Green Chem., 2021, 23, 8053-8060. Sélectionné par l'éditeur comme "Hot Green Chemistry Article 2021".

J. Tellers, M. Jamali, P. Willems, B. Tjeerdsma, N. Sbirrazzuoli, N. Guigo
Cross-linking behavior of eutectic hardeners from natural acid mixtures.
Green Chem., 2021, 23, 536.

A. Sangregorio, A. Muralidhara, N. Guigo, G. Marlair, E. de Jong, N. Sbirrazzuoli.
Natural fibre composites with furanic thermoset resins. Comparison between polyfurfuryl alcohol and humins from sugar conversion.
Composites Part C, 2021, 4, 100109. Open Access.

X. Chen, A. Pizzi, H. Essawy, E. Fredon, C. Gerardin, N. Guigo, N. Sbirrazzuoli.
Non-Furanic Humins-based Non-Isocyanate Polyurethane (NIPU) Thermoset Wood Adhesives.
Polymers, 2021, 13, 372. Open Access.

L. Granado, N. Sbirrazzuoli.
Isoconversional computations for nonisothermal kinetic predictions
Thermochim. Acta, 2021, 697, 178859.

N. Sbirrazzuoli.
Model-free isothermal and nonisothermal predictions using advanced isoconversional methods.
Thermochim. Acta, 2021, 697, 178855.

N. Pouloupoulou, N. Guigo, N. Sbirrazzuoli, D. G. Papageorgiou*, D. N. Bikiaris, G. N. Nikolaidis, G. Z. Papageorgiou.
Towards increased sustainability for aromatic polyesters: Poly(butylene 2,5-furandicarboxylate) and its blends with poly(butylene terephthalate).
Polymer, 212(6) 2021, 123157.