

PhD position: Synthesis and properties of PS-PMMA copolymers containing reversible covalent crosslinks as compatibilizers in blends

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This PhD project is part of the European Doctoral Network 'ReBond', which involves eight Universities, five industrial partners et 15 PhD students. By combining the expertise of the different partners in synthesis, advanced characterization, linear and nonlinear dynamics, mechanical properties, modelling, and plastic product development and processing, we shall uncover the underpinning relationships among processing and performance of vitrimer-based recycled plastics and elastomers.

Within this framework, the specific objectives of this PhD are to compare the classical compatibilization approach of blends based on the use of copolymers to an approach using vitrimers, and to investigate the possibility of combining the two approaches. Blends of PS and PMMA have been chosen as model systems.

This experimental project will involve aspects of polymer synthesis, structural characterization by scattering techniques, and characterization of the dynamics by rheometry and dielectric techniques and of the mechanical properties.

The applicant must have a master's degree in polymer chemistry or physico-chemistry. Good knowledge in controlled radical polymerization is required. Additional knowledge in polymer physics or in rheology is a plus.

Applications should be sent by email (a single pdf file containing a detailed CV, a transcript of marks obtained during the Master, a motivation letter, and the names of two referees) to:
rebond-manager@uclouvain.be

Starting date: 1st of September 2024 at the latest.

Project duration: 36 Months at UCLouvain (Belgium) and 12 Months at University of Ioannina (Greece)