Post-Doc POSITION (18 months) starting from September 2023

Recycling of Crosslinked Polyolefins : Micronization / Regeneration

Description

The project's framework is the ADEME collaborative project RENOV ("Regénération d'Elastomères pour une NOuvelle Valorisation") funded in 2023 between three laboratories of University Claude Bernard Lyon (CP2M, IMP and ISA) and three industrial companies (Elkem silicones, Nexans and Hutchinson).

The project will take place in two laboratories: 1) the team "Polymerization, Catalysis and Materials" of the CP2M laboratory in Villeurbanne (CP2M: Catalysis Polymerization Processes and Materials- UMR 5128 - CNRS - CPE Lyon – University Claude Bernard) and 2) IMP: Ingénierie des Matériaux Polymères, UMR5223-CNRS, Lyon 1, INSA, UJM under the supervision of Dr Vincent MONTEIL and Pr Dr Philippe CASSAGNAU in collaboration with Nexans.

The multidisciplinary project aims at: 1) recycling polyolefin-based cross-linked materials (XPO) using micronization (= grinding down to a few tens of μm) or regeneration at high T in extruders as mechanical recycling routes and 2) re-incorporating the obtained recycled particles or polymer regeneration products in industrially relevant formulations. To maximize reincorporation level a particular attention will be paid either to the surface of particles or to functionality of regeneration products with a potential implementation of chemical surface or polymer chains modifications.

The project will include the structural characterization of surfaces/interfaces and/or polymer chains (using modern spectroscopies such as liquid / solid state / hybrid liq/sol NMR) and viscoelasticity.

Qualifications

Applicants should have a PhD Degree in Polymer Synthesis or (Reactive) Polymer Processing. Expertise in Rubber Properties would be considered an asset.

HOW TO APPLY

CVs should be sent to: Dr. MONTEIL Vincent (vincent.monteil@univ-lyon1.fr) / Pr. Dr. CASSAGNAU Philippe (philippe.cassagnau@univ-lyon1.fr)