



In our consortium team, we are proud to have three industries who actively participate in the project and its research for the development of new thermoplastic elastomer, haptic coating and new adhesives.



Follow our activities, research and results on

www.dodynet.eu



[esr.dodynet](https://www.instagram.com/esr.dodynet)



is a project supported by the H2020 Programme (Marie Skłodowska-Curie Actions) of the European Commission's Innovative Training Networks (H2020-MSCA-ITN-2017).

The project focuses on the synthesis and study of polymeric gels and networks that have high-added value applications. Polymer gels can be either permanent (covalently cross-linked) and resist flow, or physical (reversible) and easy to process while creeping at long times. The grand challenge is to efficiently combine and control within the same material, distinct features of these two classes of networks.

The objective of DoDyNet is to develop a research roadmap that enhances our understanding of the synergistic effects arising by combining distinct dynamic modes within a polymeric network. These '**Double Dynamics Networks**' (DDNs) are characterized by a multi-scale viscoelastic response that can be tuned via molar mass, fraction of component and dynamics of (transient or exchangeable) bonds. This will enable us to selectively tailor their macroscopic properties at molecular level.

Based on this concept, the integrated research program involves: novel synthesis of different DDNs; detailed analysis of structure; rheology and dynamics; modeling and simulations; mechanical properties relevant to applications.

Our team is composed of 12 Early Stage Researchers working in 8 different European universities



Clément Coutouly

Synthesis and dynamics of model supramolecular polymer networks
Under the supervision of Charles-André Fustin, UCLouvain



Rowanne Lyons

Synthesis and Dynamics of Double Networks based on Slide Ring Gels
Under the supervision of Charles-André Fustin, UCLouvain



Larissa Hammer

Design and Characterization of Double Dynamic Networks Based on Dynamic Covalent Bonds
Under the supervision of Renaud Nicolaÿ, ESPCI



Christina Pyromali

Nonlinear Viscoelastic Response of Metallo-Supramolecular Polymeric Networks
Under the supervision of Dimitris Vlassopoulos, FORTH



Wendi Wang

Viscoelastic Response of Double Dynamics Polymer Networks under Transient Elongation
Under the supervision of Qian Huang, DTU



Carole-Ann Charles

Elastocapillary effects in double dynamic networks
Under the supervision of Christian Ligoure, CNRS Montpellier



Consiglia Carillo

Rheological investigations of reversible covalent systems and double networks systems
Under the supervision of Dimitris Vlassopoulos, FORTH



Simone Sbrescia

Influence of Temperature and Composition on Mechanical Properties of Thermoplastic Elastomers
Under the supervision of Evelyne van Ruymbeke, UCLouvain



Paola Nicolella

Structure and diffusion in DDNs at the nano- to micro- scale
Under the supervision of Sebastian Seiffert, UMainz



Hongwei Liu

Modeling the Nonlinear Rheology of Reversible Double Dynamics Networks
Under the supervision of Giovanni Ianniruberto, UNaples



Yanzhao Li

Modelling the linear dynamics of Double Dynamics Polymer Networks
Under the supervision of Evelyne van Ruymbeke, UCLouvain



Jianzhu Ju

Application property of double dynamics polymer networks
Under the supervision of Costantino Creton, ESPCI