

Grupo Español
de Reología



Sevilla
December 2023

Topics on Rheology

Free Seminar/Webinar



We are delighted to invite you to attend the Free Seminar/Webinar on Topics on Rheology, organized by the “Grupo Español de Reología”. The seminar will take place on Friday, **December 1, 2023**, at the "Centro Andalucía Tech Escuela Politécnica Superior", **CATEPS**, University of Seville, but can also be attended online.

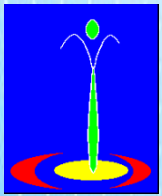
The seminar will include two 50-minute presentations with 10 minutes of discussion each:

10:00 Prof. Dr. Antxon Santamaría (Universidad del País Vasco, UPV/EHU)
Los Polímeros y la Reología: Amigos para siempre?

11:00 Prof. Dr. Loic Hilliou (University of Minho)
In-process rheological monitoring of extrusion-based polymer processes



CATEPS, Centro Andalucía Tech Escuela Politécnica Superior, c/ Américo Vespucio, Isla de La Cartuja, Sevilla



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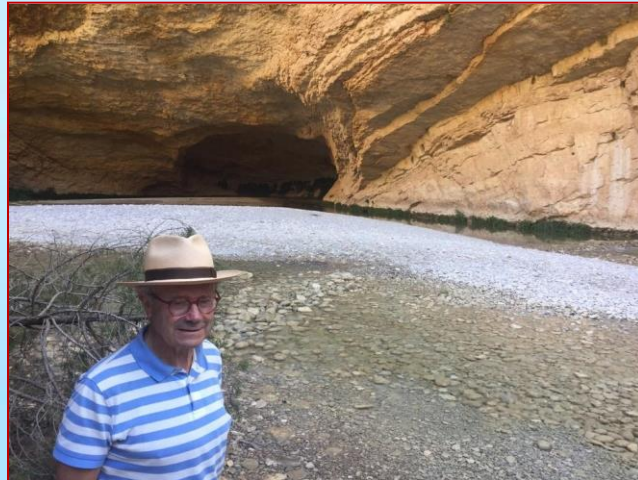


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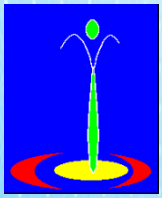
Los Polímeros y la Reología: ¿amigos para siempre?



Polymers and rheology were both born in the late 1920s, fruit of the disruptive and creative scientific atmosphere of that decade. The development of polymer science and technology in the last century has been colossal, whereas rheology has been able to create its own route as a branch of Physics. In this lecture the interactions between both scientific areas are described, demonstrating that many of the crucial aspects for the progress of one of them owes to the other's contribution and vice versa. The current influence of rheology over polymer science is discussed.

Prof. Dr. Antxon Santamaría, Universidad del País Vasco (UPV/EHU)

Prof. Antxon Santamaria is Emeritus Professor at the University of the Basque Country. After completing his PhD Thesis on the rheology of polystyrene based copolymers in 1980, he joined the Polymer Science and Engineering Department at the University of Tennessee. He was a founding member of the Spanish Rheology Group (GER) in 1983. In 1992 he became full Professor of Applied Physics at the University of the Basque Country (UPV/EHU). He has worked on basic and applied rheology of polymer systems, such as thermoreversible gels, copolymers, blends, liquid crystals, polymer modified bitumens, adhesives and nanocomposites for over 40 years. He has published over 200 papers in scientific journals, delivered more than 60 lectures and directed 24 PhD Thesis. His close relationship with international and Spanish scientists lead him to become President of the Spanish Polymer Group (GEP) from 1997 to 2003 and President of the Spanish Rheology Group (GER) between 2006 and 2015. He was awarded the Golden Medal of the GER in 2021.



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In-process rheological monitoring of extrusion-based polymer processes



Prof. Dr. Loïc Hilliou,
University of Minho
Guimaraes (Portugal)

The efficient development of new plastics requires the availability of characterization techniques that are able to quickly provide relevant and accurate data during the melt mixing of materials. In-process measuring techniques are frequently adopted for this purpose, as they: i) minimize the time delay between the decision to make a measurement and obtaining the result; ii) avoid the need to subject the material to further thermal/flow cycles in order to prepare samples for the rheological measurements, which may affect its initial characteristics. Using small-scale processing equipment for this purpose has the further advantage of requiring small material quantities, which may be especially pertinent at the early stages of material development. Examples of prototype small-scale extruders coupled to in-process rheo-optical devices used to characterize the rheological and morphological characteristics of various polymer systems are presented.

Loïc Hilliou (ORCID 0000-0002-9936-8088) is associate researcher at the Institute for Polymers and Composites, University of Minho, Portugal, and in charge of the rheology lab of this institute. His research is about the relationships between the materials properties, their process-induced structure and rheology and the final properties of the resulting products. Recent studies focused on the extrusion of polymer-based systems, on hybrid carrageenan hydrogels, on formulation of pastes for 3D printed lithium batteries, on polyhydroxyalkanoates, and the rheological understanding of extrusion-based additive manufacturing. He is currently the elected secretary of the Portuguese Society of Rheology.