Agustín Ríos de Anda
Associate Professor
Université Paris-Est Créteil, France

Guest lecture: "Introduction on Polymers – From their synthesis to their applications"

Seminar room of CSC, Martensstraße 5a, 91058 Erlangen

Registration via https://www.capriccio.research.fau.eu/2024/10/15/register/

The planned guest lecture on Polymer Science will develop on 5 sessions of 1.5 hours each the following topics.

Monday 9th December 14:15-15:45: The lecture will first introduce what are macromolecules, where are they found in nature and how mankind found a way to synthesize them in order to obtain polymers. The main polymerization reactions and polymer families will be presented.

Thursday 12th December 10:15-11:45 and 14:15-15:45: Afterwards, a focus on semicrystalline polymers will follow. The influence of chemical structure, chain length and morphology on crystallinity will be discussed. Experimental methods, such as X-ray diffraction and DSC, to characterize crystallinity will be presented. Then, the glass transition phenomenon and secondary molecular transitions will be detailed for amorphous and semi-crystalline polymers. The influence of chemical structure and morphology on these phenomena will be also detailed, with experimental techniques to characterize them, such as DSC, DMA and Dielectric Spectroscopy, will be detailed.

Friday 13th December 10:15-11:45 and 14:15-15:45: Furthermore, a focus on biosourced polymers will be introduced, and their current importance as a means to reduce the carbon footprint of these materials in functional-oriented applications. Finally, a summary on the functional and industrial applications of the most common polymers will be given, as regards their chemical structure and physicochemical and mechanical properties.

These lectures are aimed to be a general introduction on polymer science from a physicochemical point of view and will be set so as to appeal to a public not familiarized with these materials.

Truly yours,

Agustín Ríos de Anda
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