

Ongoing Research in CeFEMA on Advanced Materials and Processes for Energy

Thursday, 23 September 2021 10:30 (20 minutes)

This keynote talk will briefly present the ongoing research in the Center of Physics and Engineering of Advanced Materials (CeFEMA) on the topic of Advanced Materials and Processes for Energy. The CeFEMA team members working in this topic come from the following groups: MemChem - Membranes, Chemical and Electrochemical Processes Group; LASYP - Laser-Assisted Synthesis and Processing Group; NanoMatter - Multiscale Nanostructured Materials Group; and CFNMRS - Complex Fluids, NMR and Surfaces Group.

The research topics include: electrochemical characterization of membranes and electrocatalysts for direct liquid fuel cells (BOR, EOR, ORR, HPRR) and for alkaline water electrolysis (HER, OER); developing membrane processes for attaining significant energy savings (compared to traditional processes) in industrial applications; developing 2D TMDs, i.e., two-dimensional transition metal dichalcogenides, for solar spectrum related applications, e.g. solar cells and photoelectrochemical cells for water splitting; mechano-synthesis of low lithium tin alloys for nuclear fusion applications; and the development of thin films of SnS for photovoltaics, specifically using microwave transient reflection in annealed SnS thin films.

Scientific Area

Advanced materials and processes for Energy

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