The Chemist's Interactions

Seminars @ the Chemistry Department

LIVE STREAM h 14:30

Friday, 28th May 2021

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Reduced Graphene Oxides, Polycrystalline and Amorphous Membranes: Growth, Integration Challenges & Applications Opportunities

Formidable progress has been recently achieved in the fabrication and characterization of disordered low dimensional materials with unprecedented properties. Particular forms of disordered graphene (reduced graphene oxides), obtained by chemical exfoliation techniques, have been found suitable to improve the performances of composite materials, with applications in energy, textiles, thermoplastics *etc*. In parallel, catalytic vapor deposition methods have been used intensively to upscale the growth of two-dimensional materials at wafer size, with resulting material morphologies ranging from polycrystalline to fully amorphous phases, and a diversity of physical properties.

In this talk, I will discuss the challenges faced by chemists and engineers in fabricating those forms of materials, and controlling their chemical reactivity and physical properties for a given application purpose. After overviewing some structural aspects common to all of them and the added value of disorder to enhance their chemical reactivity/sensitivity, I will present the new opportunities of using these materials as part of organic composites or coating materials, with applications varying from chemical sensors, solar cells to microelectronics interconnects and devices.

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The Virtual Seminar Series will be broadcast with the Zoom software.

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