The Chemist's Interactions

Seminars @ the Chemistry Department

ROOM G11 h 14.30

Friday, 20th January 2023

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From metal to metal-free heterogeneous catalysts: a journey into more sustainable chemical processes

Heterogeneous transition metal catalysts are generally based on nanoparticles, that nowadays can be synthesized with uniform size and shape. The extraordinary advances in material science support a new vision for nanoscale-inspired design and synthesis of industrially important catalysts. This precise structural and morphological control, coupled with the possibility to modulate the metal-support interactions, allowed us to have a step change increase in the activity, selectivity and stability of many industrially and environmentally important catalysts.[1-5] Furthermore, single atom catalysts[6] and metal-free[7-9] materials are becoming an essential strategy in sustainable catalysis.

In this context, green organic synthesis, renewable energy conversion, pollution prevention and control are the real challenges of the 21st century and the focus of the present talk.

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