Nanostructured materials | Jožef Stefan Institute Ljubljana, Slovenia

SEMINAR

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Unlocking the potential of high entropy materials as (photo)(electro)catalysts

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During the last decades, great efforts have been undertaken to improve the activity and durability of catalysts in diverse fields of application. Since for each type of reaction certain catalysts are more effective than others, it is critical to identify and understand those features serving as active sites, and how to tune these features for maximum performance. Much has been done to understand these parameters on single metal, metal oxide, and doped metal oxide catalysts, but improved materials are still urgently needed. The raise of a new category of complex high entropy materials (HEMs), including high entropy alloys (HEAs) and high entropy oxides (HEOs), shows great potential to become the next generation of high-performance catalysts as they have already been reported to present high catalytic activity. In this lecture, the main findings observed in the synthesis and applications in different (photo)(electro)catalytic processes will be presented and discussed along with the next steps to better understand the potential of this class of materials in the catalysis field.

Kindly invited.