Seminario



Ciclo di Seminari 'Frontiers in Chemistry'

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How Big Data and Artificial Intelligence change the R&D Landscape in Chemistry

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Aula A «Raffaello Nasini»

Catalysis plays a crucial role in achieving the United Nations' sustainability goals, particularly in reducing greenhouse gas emissions, their valorization and through creating options for chemical recycling of various waste forms. Overall, the development workflows in the field of materials science and catalysis have already evolved quite a lot during the last decades but are again dramatically changing due to the advent of new digital technologies. In particular the drivers for the field come from the domain of Big Data and Big Data analysis coupled to technologies from the fields of Artificial Intelligence and Machine Learning. Although major development steps have already been made and first successful cases have been demonstrated, still a lot of work will have to be done with regards to turning materials science and catalysis into "digital sciences". The vision of of such "digital sciences" leads to a paradigm shift of more automated, efficient, and sustainable workflows with the goal of leading to the discovery and optimization of more efficient and selective advanced materials and catalysts to mitigate climate change and improve the sustainability of chemical processes. In this talk we will particularly explore how a coupling of precision synthesis in materials for catalysis can significantly advance the potential of AI methods, in combination with Big Data generated by high-throughput experimentation workflows.



La presenza della S. V. sarà molto gradita.

Prof. Stefano Mammi Direttore del Dipartimento di Scienze Chimiche



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