UNIVERSITÀ DEGLI STUDI DI PADOVA

DiSC

Lunedì **18 novembre 2019**
alle ore **16** presso l'aula I

il prof. Carmine Capacchione

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terrà il seminario dal titolo:

Iron and chromium [OSSO]-type metal complexes as catalysts for the synthesis of cyclic carbonates and polycarbonates

Incorporation of C into fine chemicals represents a value-added utilization of this abundant and cost effective molecule. Among the possible targets, the selective and effective synthesis of cyclic carbonates (COCs) and aliphatic polycarbonates (APCs) under mild conditions, as well as the rationalization of metal-mediated processes, is still challenging and in the focus of interest for industrial and academic researchers. We have recently reported that a new group of [OSSO]-type iron(III) complexes be used as highly active catalysts for the reacion of carbon dioxide with epoxides under very mild conditions. Notably, these catalysts are able to promote both the formation of COCs and APCs depending on the type of epoxide employed. Supported by experimental and computational data, we have found that the real catalytic species is a ferrate complex formed by reaction of catalyst precursors and tetrabutylammonium bromide. This complex can be prepared and used as single component catalyst for the reaction of carbon dioxide with epoxides. Furthermore the corresponding [OSSO]-type chromium(III) complex display an high versatility as catalyst for the synthesis of polycarbonates from terminal epoxides and CO_2.

Il Direttore del Dipartimento
Prof. Michele Maggini