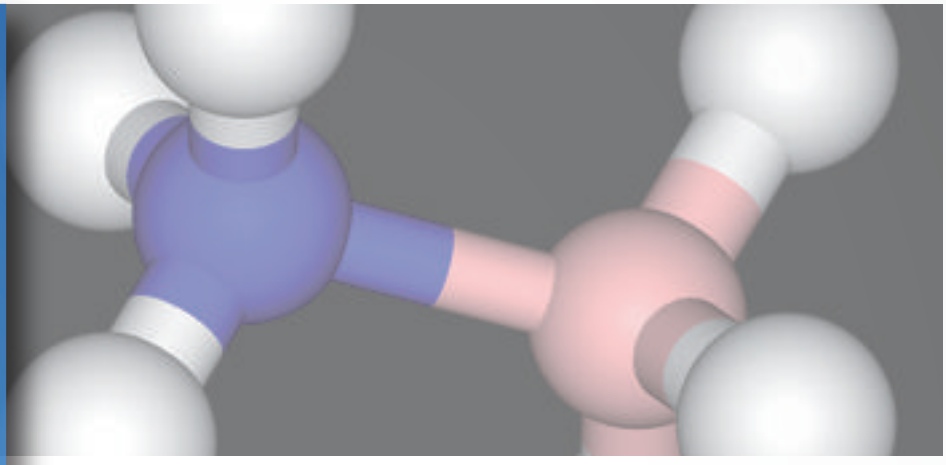
Coordination-Activation Chemistry of Ammonia-Boranes at Multiple Metal-Metal Bonded Complexes



PROJECT DETAILS

Funding Programme:
7th Framework Programme (FP7)
Sub-Programme:
People
Funding Scheme:
European Re-integration Grants (ERG)
Project Reference:
276958;
UE-11-DGV-276958
Project Duration:
36 Months (from 2011-04-01 to 2014-03-31)
Total Project Value:
€ 45.000
EU Grant-Aid:
€ 45.000
Funding to UniOvi:
€ 45.000

Website:
http://cordis.europa.eu/projects/rcn/98309_en.html

PROJECT DESCRIPTION

With more than 65% of the refined petroleum products exhausted by transportation in the developed countries, is vitally important to promote a shift away from carbon-based fuels and towards environmentally friendly energy sources. In this sense, hydrogen has the potential to be a clean (producing water) and source-independent energy carrier. A type of compounds which has attracted much attention in recent years as new materials for hydrogen storage are the ammonia-borane and related molecules, for which hydrogen loss is favoured over dissociation under most conditions.

The primary purpose of this project is to study the coordination/activation chemistry of ammonia-borane and related organic molecules when reacted with dinuclear transition metal complexes exhibiting multiple metal-metal bonds. The interest of the project is based on: a) the absence of previous studies of the coordination chemistry of AB's on multiply bonded dinuclear complexes, b) the interesting dehydrogenation processes of AB's when reacted with mononuclear transition metal complexes, and c) the possible utility of this catalytic dehydrogenation of AB's not only for hydrogen production processes, but also for the incorporation of B-N species to unsaturated organic molecules.

Apart from the novelty of the research results, this project will provide a solid platform from which the applicant can begin a fully independent research career. It will enable him to carry out and lead an internationally competitive research programme in an unexplored area, gaining further experience in teaching, oral and written communication and networking. Also, timeliness will be a critical factor, with results written up expeditiously to ensure that Europe maintains a lead position in this research area.

The acceptance of the project proposed by the applicant will exponentially increase its chances of success, in line with the final aim of this program that is the reintegration of the applicant to his home country.

PROJECT PARTNERS

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