University of Ioannina

Intensive Programmes (IP)

Lifelong Learning Programme Erasmus

Advanced CAtalysis and Organometallic Chemistry

Camerino 1 - 12 August 2010 Italy

Palazzo Ducale

ACAOC is 2-week intensive course in **Advanced Catalysis and Organometallic Chemistry.**
The **main objective** is to provide a comprehensive and balanced overview of the most important aspects of organometallics and catalysis in the preparation of products relevant for industry, bridging the gap between the need of advanced training and the actual offer in this field.
The **program** is an integrated program among the participating institutes and consists of 1) introductory courses (6 ECTS 1st week) to take care of possible background gaps 2) specific corse and Lab activities(6 ECTS, 2nd week).

The IP is intended **for postgraduate, master in science or PhD students attending courses in chemistry.**
They will be selected in the number of 3 from each of the partner institutions attending the project and admission will be on competitive basis.
The selection will be performed in-house by the sending Institutions.

Lecturers from the participating University will present important aspects in the field of catalysis and organometallic chemistry, such as ligands and complexes synthesis for the design and preparation of catalysts, exhaustive spectroscopic characterization, computational studies, catalytic studies, kinetic and mechanistic studies and, finally, also non-standard methods.

The **2010 edition** of ACAOC has been expanded with respect to previous one, with the introduction of new 'frontier' topics, including asymmetric and stereoselective catalysis, new organometallic materials and nanotechnology, and biological organometallic chemistry.

Lecturers
Rodica M. Dinica
Nick Hadjiliadis
Carlos Henriques
Russell Howe
Agustin Galindo
Philippe Kalck
Francisco J. Maldonado
Fabio Marchetti
Rinaldo Poli
Armando Pombeiro
Claudio Pettinari
Anna Trzeciak

Info
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UNICAM Nucleo ideazione e realizzazione grafica, marzo 2010

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Advanced CAtalysis and Organometallic Chemistry

2nd edition

Camerino 1 - 12 August 2010 **Italy** Palazzo Ducale

1 August

15 - 16 Welcome to participants (Fabio Marchetti, Claudio Pettinari)

15 - 16 Presentation of the IP program and of the teaching activities (Fabio Marchetti)

16 - 19 Homogeneous catalysis (Armando Pombeiro **T1**)

2 August

10 - 13 C-H catalytic activation (Claudio Pettinari **T2**)

15 - 18 Functionalization of alkanes (Armando Pombeiro **T3**)

3 August

10 - 13 Asymmetric catalysis (Philippe Kalck **T4**)

15 - 18 Catalytic reactions in ionic liquids with metal complexes and nanoparticles (Anna Trzeciak **T5**)

4 August

10 - 13 The applications of coordination catalysis in industrial processes including fine chemistry (Philippe Kalck **T6**)

15 - 18 Organometallic complexes as antitumor, antibacterial, antivirus and antimicrobial agents (Nick Hadjiliadis **T7**)

5 August

10 - 13 Heterogeneous catalysis I - structural and chemical aspects (Francisco J. Maldonado Hodar **T8**)

15 - 18 Heterogeneous catalysis II - industrial heterogeneous catalysis (Carlos Henriques **T9**)

6 August

10 - 13 Catalysis by carbons - energetic and environmental applications (Francisco J. Maldonado Hodar **T10**)

15 - 18 Catalysis by zeolites (Carlos Henriques **T11**)

7 August

10 - 13 Experimental mechanistic studies of catalytic cycles (Rinaldo Poli **T12**)

15 - 18 Transition metals in polymerization: coordination polymerization and controlled radical polymerization (Rinaldo Poli **T13**)

8 August

10 - 13 Green chemistry: alternative energy sources (microwaves, ultrasounds, sunlight/uv) assisting organometallic reactions (Rodica Dinica **T14**)

15 - 18 Fundamentals of quantum chemistry applied to organometallic chemistry and catalysis (Rinaldo Poli **T15**)

9 August

10 - 13 Gaussian calculations of simple organometallic molecules: technical aspects (Agustin Galindo **T16**)

10 August

10 - 13 Gaussian calculations of simple organometallic molecules: technical aspects (Agustin Galindo **T17**)

11 August

10 - 13 Spectroscopic techniques in heterogeneous catalysis I (Russell Howe **T18**)

15 - 18 Spectroscopic techniques in heterogeneous catalysis II (Russell Howe **T19**)

12 August

10 - 13 Final test and concluding remarks (Fabio Marchetti, Claudio Pettinari **T20**)

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