



DEPARTMENT OF INDUSTRIAL CHEMISTRY
"TOSO MONTANARI"

Giovedì 12 Aprile 2018 (ore 11.30-13.30) e
Venerdì 13 Aprile 2018 (ore 11.00-13.00)

presso l'aula 9

del Dipartimento di Chimica Industriale
"Toso Montanari"

Dr. Nikolaos Dimitratos

*School of Chemistry, Cardiff Catalysis Institute, Cardiff University,
Main Building, Park Place, Cardiff, Wales, CF10 3AT*

terrà un seminario dal titolo

Catalytic materials for Green Chemistry

Il seminario è specificatamente dedicato agli studenti del
Corso di Chimica della Catalisi della LM in Chimica
Industriale ma eventuali colleghi e dottorandi interessati
sono invitati a partecipare.

Prof. Angelo Vaccari



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Course: Catalytic materials for Green Chemistry

Aims:

To use selected examples to illustrate current synthetic approaches for catalyst development in the area of nanoparticles and a brief history of nanoparticle's development will be presented. The course will discuss the importance of a number of preparation methods for the generation of nanoparticles and aspects of important characterisation methods for understanding and choosing the appropriate techniques for characterising nanomaterials. Specific examples will be used to demonstrate important factors of controlling morphology of nanomaterials, in important catalytic applications, such as selective oxidation and hydrogenation reactions. The importance of selected reactions will be highlighted and discussed.

The course will provide the following outline of syllabus:

1. History and importance of nanoparticles
2. Synthesis of nanoparticles
3. Characterization techniques
4. Catalytic applications

Learning Outcomes - Intended Knowledge Outcomes

- understand the general principles of nanoparticle preparation and importance of nanomaterials worldwide
- know about the basic and some advanced characterisation techniques and how to choose the appropriate techniques for your nanomaterials
- know about some specific examples of industrial heterogeneous catalysis and catalytic processes
- know about the relationships between nanoparticle morphology and catalytic activity
- appreciate current/evolving challenges in heterogeneous (nano)catalysis
- understand nanoparticle design and how it can be used to optimise catalyst performance