

Surface and interface design for heterogeneous catalysis

Composante
Sciences Fondamentales et Appliquées

En bref

- # Langue(s) d'enseignement: Anglais
- # Ouvert aux étudiants en échange: Oui

Présentation

Description

- Catalysis principles
- Surface/interfaces properties
- Design of catalysts (structure-performances relationship)
- Applications of heterogeneous catalysts in the field of environment and energy will be emphasized during seminars.

Objectifs

Program overview:

- Understanding the fundamental principles of catalysis.
- Knowledge about catalysis by metals, electrocatalysis and catalysis by solid acids.
- Impact of interface design on performance of catalysts.

Heures d'enseignement

CM

CM

8h

Programme détaillé

After a presentation of the fundamentals of heterogeneous catalysis, the courses will aim at giving to students the basic knowledge about catalysis by metals, catalysis by solid acids and electrocatalysis which are the main research areas dealing with interface design of solid (catalyst) and reactants (gas or liquid phase). Catalytic processes represent 90% of the processes used in industry to obtain chemicals.

Informations complémentaires

Assessment methods

- Written examination

Compétences visées

Outcomes

- Basic knowledge of heterogeneous catalysis
- Study of the main families of catalysts (acid-base, metallic, electrodes)
- Knowledge of the phenomena involved in heterogeneous catalysis
- Correlation between interface and catalytic performance