



CHIM2201 Applied chemical kinetics

[22.5h+0h exercises] 2.5 credits

This course is not taught in 2006-2007

This course is taught in the 2nd semester

Teacher(s): Jacques Vandooren
Language: French
Level: Second cycle

Aims

Conception of chemical reactors from kinetic analysis data.

Main themes

Introduction: - classification of chemical reactors - ideal and real reactors - studying the conception of experimental reactors (open or closed system)

Chapter 1 : calculating ideal chemical reactors from the kinetic data; XX reactors with discontinued production, tubular reactors with piston flow, mixing reactors perfectly shaken in isotherm process, influence of the reactor's nature on product formation selectivity in composed reactions.

Chapter 2 : Heterogeneous catalysis and catalytic reactors : chemical kinetics of heterogeneous catalytic reactions, microkinetic on the reactor's grain level, using heterogeneous catalysers in conversion processes: conception of reactional section.

Chapter 3 : Analysis of the behaviour of non-ideal catalytic reactors on the bed-level: origin of non-idealism, experimental study of the distribution of time spent in the reactor, tubular reactor model with axial dispersion.

Conclusion : The development of catalytic processes.

Seminaries (15hrs) under the form of personal work and/or assisted, the exercises focused on calculating the chemical reactor's characteristics.

Other credits in programs

BIR23/1C	Troisième année du programme conduisant au grade de bio-ingénieur: chimie et bio-industries (Sciences, technologie & qualité des aliments)	(2.5 credits)
BIR23/2C	Troisième année du programme conduisant au grade de bio-ingénieur : Chimie et bio-industries (Ingénierie biomoléculaire et cellulaire)	(2.5 credits)
BIR23/3C	Troisième année du programme conduisant au grade de bio-ingénieur : chimie et bioindustries (Nanobiotechnologies, matériaux et catalyse)	(2.5 credits)
BIR23/4C	Troisième année du programme conduisant au grade de bio-ingénieur : chimie et bio-industries (Technologies environnementales: eau, sol, air)	(2.5 credits)
CHIM22	Deuxième licence en sciences chimiques	(2.5 credits)