



Faculté des sciences appliquées

FSA

MAPR2400 Applied chemical kinetics

[30h+30h exercices] 5 credits

This course is taught in the 2nd semester

Teacher(s): Christian Bailly, Fernand Thyron
Language: french
Level: 2nd cycle course

Aims

To master chemical kinetics as a fundamental discipline for the design of chemical processes.

Main themes

Classification of reaction kinetics and chemical reactors.
 Formal kinetics of isolated reactions.
 Analysis methods for order-dependent reaction kinetics.
 Continuous and discontinuous ideal reactors.
 Formal kinetics of parallel and consecutive reactions.
 Heterogeneous catalysis.
 Acid-base catalysis and enzymatic catalysis.
 Polycondensation.
 Reactions involving solid reactants.
 Radical chain reactions.

Content and teaching methods

The first part of the course is devoted to formal kinetics while the second focuses on kinetic modeling of industrially relevant reactions. The theoretical analysis is illustrated by problems and case studies.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

The evaluation is based on an oral examination and a written solution to problems.

Other credits in programs

INCH21	Première année du programme conduisant au grade d'ingénieur (5 credits) civil chimiste	Mandatory
INCH22	Deuxième année du programme conduisant au grade d'ingénieur civil chimiste	(5 credits)
MAP23	Troisième année du programme conduisant au grade d'ingénieur civil en mathématiques appliquées	(5 credits)