UE Polymers 2 chemistry and physico-chemistry

Niveau d'étude
Bac +4

ECTS
3 crédits

Composante
UFR Physique, Ingénierie, Terre, Environnement, Mécanique (PhITEM)

Période de l'année
Printemps (janv. à avril/mai)

Diplômes intégrant cet élément

- Master Nanosciences et nanotechnologies

Langue(s) d'enseignement: Anglais

Ouvert aux étudiants en échange: Oui

Code d'export Apogée: PAX8NCAE

Présentation

Description

This course gives an overview of the polymer field from the synthesis of polymers to characterization, properties, and applications of synthetic and natural polymers. All major polymerization methods, their reaction mechanisms and kinetic aspects are considered: step growth polymerization, chain growth polymerization with ionic and radical variations, insertion polymerization. A lecture portion is integrated with a laboratory component, in which experiments are conducted that are directly connected to the class work. Analysis of polymer solution properties and caracterization techniques are presented : thermodynamics, polymer/solvent interactions, average molecular weight determination via osmometry, ligth scattering, viscosimetry and SEC.

This course is divided in two parts covering selected aspects of polymer chemistry and physical chemistry. The chemistry part aims to help students better understand contemporary polymer science focusing on syntheses and materials properties of polymers. It covers copolymer synthesis, discussing control of copolymer composition and relevant recent research such as controlled

Informations non contractuelles.
Dernière mise à jour le 30 juin 2026

radical polymerization, supramolecular polymers and bio-based polymers. The course will also provide detailed information for polymerization techniques and polymer characterization tools.

Heures d'enseignement

CMTD	Cours magistral - Travaux dirigés	21h

Période : Semestre 8

Infos pratiques

Lieu(x) ville

Grenoble

Campus

Grenoble - Domaine universitaire

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