

# Chimie supramoléculaire



## En bref

- › Langue(s) d'enseignement: Français
- › Ouvert aux étudiants en échange: Oui

## Présentation

### Description

#### Supramolecular Chemistry: basics (9h)

- # From molecular to supramolecular chemistry.
- # Supramolecular interactions.
- # Characterization of supramolecular structures.
- # Host molecules for the recognition of cations, anions and neutral molecules.
- # Chemosensors.
- # Molecular flasks.
- # Supramolecular catalysis.

#### Supramolecular polymerization (4h)

- # Physical and chemical gels.
- # Application fields (conducting materials, mesophases, self-healing systems,...).
- # Description of supramolecular polymerization processes (isodesmic, cooperative, chain-growth).
- # Chirality and supramolecular polymers ("sergeant and soldiers" and "majority rules" experiments).
- # H and J aggregates.

#### Supramolecular Chemistry based on metal (12h)

- # Basics and tools.
- # Self-assembling: helicates.
- # Self-assembling: grids, ladders and racks.
- # Self-assembling: molecular polygons and polyhedra.
- # Catenanes, rotaxanes and molecular knots.
- # Molecular machines.
- # Supramolecular polymers.

## Objectifs

### Heures d'enseignement

CM - Chimie supramoléculaire	Cours magistral	25h
TP - Chimie supramoléculaire	Travaux pratique	10h

### Pré-requis obligatoires

- # Know and identify non-covalent interactions.
- # Know main families of natural and synthetic receptors (including their synthetic access).
- # Apply various analytical methods for addressing the thermodynamics of host-guest complexes.
- # Know new concepts associated to the reactivity in confined spaces.
- # Understand the supramolecular polymerization mechanisms (isodesmic, cooperative, ...).
- # Know the metal-directed strategies towards discrete and polymeric supramolecular structures based on metals.
- # Know interlocked, stimuli-responsive and dynamic systems.

## Infos pratiques

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### Lieu(x)

> Angers