

UE Molecular photophysics



Niveau d'étude
Bac +4



ECTS
3 crédits



Composante
UFR PhITEM
(physique,
ingénierie, terre,
environnement,
mécanique)



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

- > **Langue(s) d'enseignement:** Anglais
- > **Ouvert aux étudiants en échange:** Oui
- > **Code d'export Apogée:** PAX8NAAI

Présentation

Description

1. INTRODUCTION

2. BASIC PHOTOPHYSICAL PROCESSES

2.1. Creating excited states by light absorption

2.2. Properties of excited states

2.2.1. Geometry

2.2.2. Acid-base properties

2.2.3. Redox properties

2.2.4. Dipolar moment

2.3. Deactivation of the excited electronic states

2.3.1. Non-radiative transitions

2.3.2. Radiative transitions

2.3.3. Parameters

2.3.4. Experimental measurement

3. QUENCHING OF EXCITED STATES

3.1. Kinetics of Stern-Volmer

- 3.2. Energy transfer reaction (electronic)
 - 3.2.1. Radiative energy transfer
 - 3.2.2. Non-radiative energy transfer by resonance
 - 3.2.3. Non-radiative energy transfer by exchange
 - 3.3. Electron transfer reactions
 - 2.3.1. Energy aspect
 - 3.3.2. Kinetic aspect
 - 3.3.3. Application of electron transfer to conversion and storage of solar energy
 - 3.4. Excimers and exciplexes
 - 3.5. Time-resolved spectroscopy method
4. PHOTONICS OF SOLIDS AND NANOPARTICLES
- 4.1. Introduction
 - 4.2. Exciton formation
 - 4.3. Applications of photonics of solids
5. PHOTOCHEMICAL AND PHOTOCHROMIC REACTIONS
- 5.1. Photochemical reactions
 - 5.1.1. The biradical reactions
 - 5.1.2. Pericyclic reactions
 - 5.2. Photochromic reactions

Heures d'enseignement

UE Molecular photophysics - CM-TD	Cours magistral - Travaux dirigés	13,5h
UE Molecular photophysics - TP	TP	12h

Période : Semestre 8

Infos pratiques

Lieu(x) ville

› Grenoble

Campus

› Grenoble - Domaine universitaire