

<b>Title</b>	<b>Photophysicals and Photochemicals Process</b>
<b>Credit Rating</b>	<b>2 ECTS / 16 hours</b>
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## Objectives

*Acquisition of the theoretical bases in photochemistry and photophysic.*  
*Understanding of the principles governing the reactivity of molecular excited states and the solids under irradiation.*  
*Presentation of the major classes of natural and industrial photochemical processes.*

## Content

### A- PHOTOCHEMISTRY

#### 1. Introduction

#### 2. Electronic Transition States

- **Electronic Wave Functions**
- **Potential Energy Surface**
- **Vibrational Wave Functions**
- **Singlet and Triplet States**
- **Jablonski Diagram**
- **Adiabatic Process**

#### 3. Radiative Transitions

- **Electromagnetic Radiation**
- **Absorption and Emission**
- **Polar Moment Transition**

#### 4. Non-Radiative Transition States

- **Internal Conversion**
- **Electron Transfer**
- **Energy Transfer**

#### 5. Solvation Effect on the Electronic transition

#### 6. Kinetic of the Excited States

- **Stern-Volmer Equation**
- **Quantum Yield**

### B. PHOTOPOLYMERISATION

