

# UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Introduction to Photochemistry (Curricular - Chemistry)

2021-94R-SCGA11

Titolo

Introduction to photochemistry

### Docente(i)

Luca Bertini ; Claudio Greco ; Antonio Papagni

#### Lingua

English

#### **Breve descrizione**

Photophysics:

- light-matter interaction and photostimulation processes
- Interactions between atoms and molecules and photographic processes
- Frank-Condon's Principle
- Dynamics and time scale for decaying an excited state (fluorescence, phosphorescence)

#### Photochemistry:

- Organic photochemistry and photochemical processes
- Organic photochemistry: Photostimulate organic reactions
- Radical or ionic dissociation
- Intrameloogic rearrangements and photoisomers
- Hydrogen atom abstraction
- Photodimerization, photoaddition, photoionisation reactions
- Photochemical activity of aromatic compounds
- photochemistry of diazo- and azide compounds
- Photo-removable protective groups
- Chemiluminescence

Technical and experimental aspects of organic photochemistry

- Inorganic photochemistry and coordination compounds
- Characterization of the inorganic and coordinated electron spectra
- Decay and Lifetime kinetics of an excited state
- Energy transfer: Förster and Dexter mechanism
- Electron transfer: Markus theory and quantum approach
- Proton-coupled electron transfer
- Redox properties of excited states of coordination compounds: the case of [Ru(bpy)3]2+;

Objective of the program: The mini-course of photochemistry is an introduc-tion to a selection of general, organic, inorganic, biological, solid state and theoretical photochemical themes with the aim of providing to phd students knowledge in basic principles and application of photochemistry.

Evaluation: NO

#### CFU / Ore

2 CFU - 16 Hours (Lecture)

#### Periodo di erogazione

II semester