

Syllabus 2021/22

Teacher (name and affiliation)	Luca Bertini, Claudio Greco, Antonio Papagni
Title	Introduction to photochemistry
Language	English
CFU	2
Hours	16
Program	<p>Photophysics:</p> <ul style="list-style-type: none"> - 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) <p>Photochemistry:</p> <ul style="list-style-type: none"> - Organic photochemistry and photochemical processes - Organic photochemistry: Photostimulate organic reactions - Radical or ionic dissociation - Intramolecular 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 <p>Technical and experimental aspects of organic photochemistry</p> <ul style="list-style-type: none"> - 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: Marcus theory and quantum approach - Proton-coupled electron transfer - Redox properties of excited states of coordination compounds: the case of $[\text{Ru}(\text{bpy})_3]^{2+}$; <p>Objective of the program: The mini-course of photochemistry is an introduction 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.</p>

Evaluation: YES/NO	No
Calendar	2 nd semester