

## Course Syllabus for Industry 4.0 PhD ( Cycle)

<b>Course title</b>	Multifunctional organic materials for optics and optoelectronics
<b>Scientific Discipline Sector</b>	CHIM/06
<b>CFU (Hours)</b>	1 (10)
<b>Objectives</b>	The course aims at providing the PhD students a spread overview about the state of art in the field of organic materials and their application in optics, and optoelectronics. In particular, the course will focus on the technological applications of organic materials based on inert free radicals, where the presence of an odd electron in their electronic configuration leads to unconventional physical properties that make them one of the most promising candidates for the design of multifunctional materials.
<b>Programme</b>	Introduction: use of organic material in optics, electronics, and optoelectronics: state of the art and future perspectives exploiting inert organic radicals. Optoelectronics: inert radicals as fluorescent doublet emitters in OLEDs: a full-organic and metal-free solution for efficient electroluminescence. Optics: origin of the non-linear response in organic materials, two-photon absorption properties and their applications.