



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Advanced light-absorbing materials and their applications

2526-116R-M01

Title

Advanced Light-absorbing Materials and their Applications

Teacher(s)

Dr. Vanira Trifiletti
Dr. Giorgio Tseberlidis

Language

English

Short description

The course aims to provide insight into the role of Materials Science in the investigation of light absorbers and their applications in photovoltaics and photocatalysis, ranging from the material design and the properties required from the targeted technology, and conclude with future perspectives. In the first part of the course (Module A), the contribution that Materials Science can give in the field of photovoltaics will be presented, discussing in detail: (i) the current PV scenario and the main issues, (ii) the classification of the new generation of light-absorber materials, (iii) case studies on the emerging photovoltaics, (iv) focus on light absorber materials to be employed in integrated photovoltaics (outdoor and indoor), (v) focus on end-of-life and recycling. In the second part of the course (Module

B), the contribution that Materials Science can give in the field of photocatalysis will be presented, discussing in detail: (i) the state-of-the-art in photocatalytic systems and benchmark materials conventionally employed, (ii) light absorber materials used in the photocatalytic production of bio-fuels, (iii) introduction to environmental pollution, with a focus on wastewater pollution, (iv) conventional wastewater treatments and issues, (v) innovative materials for photocatalysis applied to wastewater treatments.

CFU / Hours

1 CFU / 8 hours

Teaching period

23, 24, 25, 26 February 2026

Sustainable Development Goals

AFFORDABLE AND CLEAN ENERGY
