Summary
The course presents the main classes of photopolymers and key factors which control photopolymerization. It explains how to select the right formulation and optimize processes for a given application. Standard and novel characterization methods, new materials and new applications are also presented.

Content
1. Introduction to radiation processing
2. Fundamentals of free-radical systems
3. Components of photocurable formulations: photoinitiators, monomers, additives
4. Analytical methods: state of the art and new developments
5. Structure-property relations in UV curable polymers
6. Advances in UV-induced polymerization research
7. Application to UV inks and coatings, nanostructures and devices

Frequency
Every year

Note
Program relevant for students in materials science, chemistry and micro-engineering (part of the course on 'selected topics in polymer science')

Learning Prerequisites
Recommended courses
Polymer science, organic chemistry

Assessment methods
The course provides 1 ECTS, based on a written report (maximum 10 pages) on a topic relevant to UV polymers. The report should synthesize three technical papers A, B and C from open scientific literature and develop a short case study (for example using equation from paper A and data from paper B to model results from paper C, or designing a process method (formulation, UV intensity, time) using inputs from the 3 papers).

Resources
Notes/Handbook
A copy of the course slides is provided at the start of the course.