

## Dottorato di Ricerca in Scienza dei Materiali e Nanotecnologie

**Dott. Angelo Nicosia**

**Title:** Methods and procedures in Polymers Synthesis

**Lecture period:** 1<sup>st</sup> semester 2024-2025

**CFU:** 2

**Brief description:** The course aims to describe the theoretical and practical aspects of polymer synthesis. Through classroom and laboratory lessons, the students will approach the standard procedures used in polymer synthesis. The chain radical and ionic polymerizations performed by using mono and multiphase processes, will be explored. In addition, approaches for step-growth polymerizations will be explored. Finally, several aspects of structural and chemical-physical characterization of the polymers will be faced.

**Program:**

General aspects of polymers: nomenclature and structural analyses

Classes of polymers and structure-properties correlation

Methods for polymer synthesis

Characterizations of polymers: Mass spectrometry, NMR, FT-IR, Gel Permeation Chromatography, Thermal analyses