

UE Polymers for renewable energy sources



- > **Teaching language(s):** English
- > **Open to exchange students:** No

Presentation

Description

This course addresses the elaboration and characterizations of main polymer materials (polymer electrolytes, electrode binder, membranes, separators) for alternative energies: i.e. lithium batteries, redox flow batteries, fuel cells, super-capacitors, solar cells etc. We will discuss on the impact of the chemical structures of polymers and membrane manufacturing conditions on the ion conductivity and cell performance. Specific polymers used in the manufacturing of membranes, separators, electrode binders as well active materials in electrode or electrolyte will be presented. The polymers can induce some limitations in the performances of different systems, these aspects will be reviewed and some solution reported in the literature will be discussed.

Objectives

Skills:

Basic knowledge on preparation and characterization of polymer materials for renewable energy sources. Correlations between the polymer structure - material properties and applications.

Course parts

UE Polymers for renewable energy sources - CM	Lectures (CM)	15h
UE Polymers for renewable energy sources - TD	Tutorials (TD)	9h

Recommended prerequisites

Prerequisites: Polymers 1 & 2 (M2 Master Program)

Useful info

Contacts

Program director

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Campus

› [Grenoble - University campus](#)