

Hydrogen production



Component
École Nationale
Supérieure
d'Électrotechnique
d'Électronique

In brief

- **Ametys Code:** M4R9Y3TU
- **Open to exchange students:** Yes

Presentation

Objectives

- Understand the challenges of the global hydrogen market and its current production methods.
- Identify low-carbon electrolysis technologies and their applications.
- Model the operation of a water electrolyzer and analyze its efficiency.
- Master the principles of power supply and auxiliary equipment in an electrolysis system.

Description

This module deals with the production of low-carbon hydrogen by electrolysis. It begins by providing an overview of the hydrogen market and conventional production processes. It then examines the different electrolysis technologies, along with their modeling and operational characteristics. The course covers power supply strategies, auxiliary equipment management, and operating constraints. The final section is devoted to a techno-economic analysis of the cost of green hydrogen.

Pre-requisites

Knowledge of electrical engineering and electrochemistry.