

Course: Power2Hydrogen

credits: 5

Course code ZVWH19P2U
Name Power2Hydrogen
Study year 2021-2022
ECTS credits 5
Language English
Coordinator J. Bekkering

Modes of delivery Education
Assessments Assignment 1 - Assignment
 Assignment 2 - Assignment

Learning outcomes

By completing the module the student demonstrates knowledge and understanding of:

- E2.2.a.1 theoretical constructs and scientific frameworks relevant to power-to-hydrogen*
E2.2.a.2 main sources of energy dissipation in electrolyzers and fuel cells
E2.2.b.1 power-to-hydrogen value chains for mobility

And is able to:

- E2.1.c.1 design scientific experiments to analyse the performance of electrolyzers*
E2.3.e.1 define and measure the energy efficiency of electrolyzers
E1.1.c.1 archive and communicate effectively experimental results

Content

Theory (3 EC):

- Electrochemistry basics
- Electrochemical storage - overview on electrochemical storage, including fundamentals of batteries and fuel cells. Limits and applications
- Electrolysis: theory and electrolyser design
- Fuel cells: theory and design

Experiments (2 EC):

- Electrolyser and fuel cell measurements

Adsorption (storage) measurements

Included in programme(s)

European Master in Renewable Energy

School(s)

Institute of Engineering