



**ESSEE
2025**

**10th Summer School on
Electrochemical Engineering**
22-26 September
2025, Cagliari, Italy



LECTURES SCHEDULE

MONDAY SEPTEMBER 22, 2025 @ Cagliari University, Faculty of Engineering and Architecture

AFTERNOON

2 PM	Introduction to electrode reactions	Michele Mascia
2:45 PM	Thermodynamics of electrochemical processes	Carlos Ponce de Leon
3:45 PM	Kinetics of electrochemical reactions	Carlos Ponce de Leon
4:30 PM	Mass transport in electrochemical systems	Karel Bouzek

TUESDAY SEPTEMBER 23, 2025 @ Cagliari University, Faculty of Engineering and Architecture

MORNING

9 AM	Electrode structures and current distributions	Karel Bouzek
9:45 AM	Electrochemical reactor and components	Manuel Rodrigo
10:30 AM COFFEE BREAK		
10:45 AM	Parallel plate reactors, set-up and operation	Michele Mascia
11:30 AM	Poster presentation	

1 PM LUNCH BREAK

AFTERNOON

2 PM	Membranes: divided/undivided cells, membranes, and separators.	Karel Bouzek
2:45 PM	Reduction of carbon dioxide and co-electrolysis	Carlos Ponce de Leon
3:30 PM COFFEE BREAK		
3:45 PM	Environmental Electrochemical Engineering I: introduction and principles	Manuel Rodrigo
4:30 PM	Advanced oxidation processes: applications, reactors and electrodes.	Manuel Rodrigo

WEDNESDAY SEPTEMBER 24, 2025 @ Cagliari University, Faculty of Engineering and Architecture

MORNING

9 AM	Batteries and capacitors	Claudia Weidlich
9:45 AM	Fuel Cells	Davide Clematis
10:30 AM COFFEE BREAK		
10:45 AM	Electrolysis of water I: Low temperature electrolysis.	Karel Bouzek
11:30 AM	Electrolysis of water II: High temperature electrolysis	Davide Clematis

1 PM LUNCH BREAK

AFTERNOON

2 PM	Industrial electrochemistry	Claudia Weidlich
2:45 PM	Photo-electrochemical processes: fundamentals and catalytic mechanisms	Annalisa Vacca
3:30 PM COFFEE BREAK		
3:45 PM	Bio-electrochemical processes I: fundamentals and mechanism of biocatalysis	Mirella Di Lorenzo
4:30 PM	Bio-electrochemical processes: applications	Mirella Di Lorenzo

THURSDAY SEPTEMBER 25, 2025 @ Sotacarbo Research Center

MORNING

9:30 AM	Hydrogen economy I: hydrogen in industry	Paula Mendoza
10:30 AM	Hydrogen economy II: Hydrogen as energy carrier	Paula Mendoza
11:30 AM	Hydrogen system engineering: integration of electrolysis in energy systems	Paula Mendoza

FRIDAY SEPTEMBER 26, 2025 @ Cagliari University, Faculty of Engineering and Architecture

MORNING

9 AM	Modelling electrochemical processes: kinetics hydrodynamics and charge conservation	Karel Bouzek
9:45 AM	Modelling bioelectrochemical processes with FEM	Michele Mascia
10:45 AM	Poster award and closing ceremony	