Organic Electrochemistry Short Course

Title of Lecture and Instructional Video

Lecture 1: by Shannon Stahl
Introduction to Organic Electrochemistry (90 minutes)

Lecture 2: by Mohammad Rafiee
Principles of Electron Transfer at Electrodes: Thermodynamics, Mass Transport (60 minutes)

Lecture 3: by Mohammad Rafiee
Equipment and Practical Considerations and Constant Potential and Current Techniques of Electrolysis (90 minutes)

Lecture 4: by Shannon Stahl
Applications of Electrochemical Organic Synthesis: Direct Electrolysis (75 minutes)

Lecture 5: by Shannon Stahl
Applications of Electrochemical Organic Synthesis: Indirect Electrolysis (90 minutes)

Lecture 6: by Mohammad Rafiee
Cyclic Voltammetry (70 minutes)

Lecture 7: by Shannon Stahl
Applications of Electrochemical Organic Paired Electrolysis Methods, Alternating Current and Photoelectrochemical Methods (50 minutes)

Lecture 8: by Mohammad Rafiee
Practical Examples and Mechanistic Case Studies by Cyclic Voltammetry (45 minutes)

Lecture 9: by Shannon Stahl
Nickel-Catalyzed Coupling Methods: A Synthetic and Mechanistic Case Study (70 minutes)

Experimental Videos:

- Potentiostats and Power Sources
- Divided Cells
- Undivided Cells
- Reference Electrodes
- Working and Counter Electrodes
- Maintaining Reference Electrodes
- Polishing Electrodes
- CV Analysis of Side Reactions
- CV and CA Analysis of Catalytic Reactions
- CV Experiment and Adjusting the Parameters
- Setting up an Electrosynthesis Reaction_Reductive Cross-Coupling
- Setting Up an Electrosynthesis Reaction_Shono Oxidation