

Multi-disciplinary Undergraduate Research Opportunities

Professor Vasilios Manousiouthakis' Systems Engineering Laboratory, the UCLA Hydrogen Engineering Research Consortium (UCLA-HERC), and the Center for Clean Technology (CCT), are providing multi-disciplinary research opportunities for undergraduates, focusing on various fields related to clean technology. These include research areas such as clean technologies, sustainability, "green" engineering, and hydrogen.

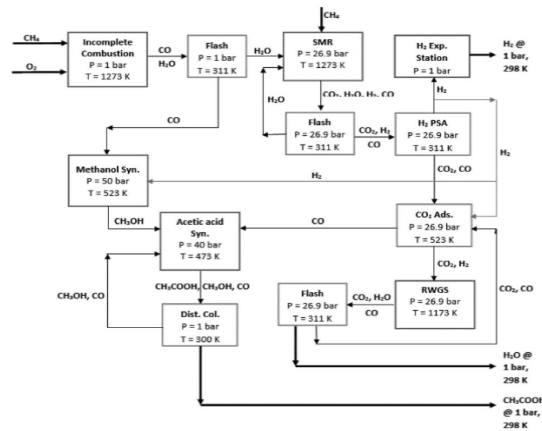
Application Information

- Enrollment in a UCLA B.S. engineering program
- CV, Academic transcript, and a one paragraph statement of purpose
- Ranking of desired projects in project list

A single PDF Application file should be emailed to: Vasilios@ucla.edu

Title your application email as:
CCT REU, YOUR NAME

Project List



1. Design, simulation, and economic analysis of novel "green" chemical/power plants

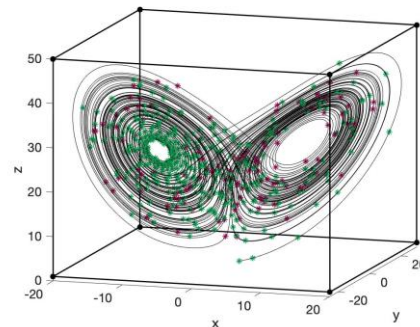
Project's Knowledge acquisition opportunities:

- Application of chemical engineering concepts in design of green real-world chemical plants
- Hands on experience with state-of-the-art process simulators (e.g. UNISIM) and in-house software (e.g. heat and power integration)

2. Detailed design, construction, testing, and assembly of a hydrogen fuel cell powered tricycle

Project's Knowledge acquisition opportunities:

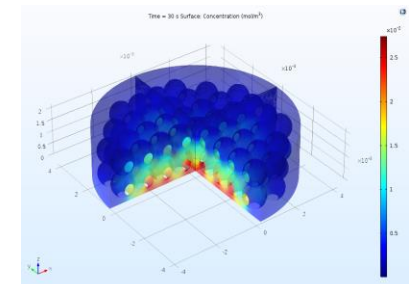
- Conceptual and detailed design of components and subsystems of a hydrogen fuel cell powered tricycle (e.g. chassis, DC/DC converter, super capacitor, hydrogen fuel cell, etc.)
- Hands on experience with building the above designed components



3. Analysis and synthesis of sustainable systems

Project's Knowledge acquisition opportunities:

- Mathematical quantification of sustainability
- In depth knowledge of dynamical systems theory, modeling, control, and optimization
- Hands on programming experience



4. Multi scale modeling of chemical processes

Project's Knowledge acquisition opportunities:

- Application of chemical engineering concepts in modeling and simulation of chemical processes
- Hands on experience with Computational Fluid Dynamics (CFD) software (e.g. COMSOL)