Center for Clean Technology CCT Fellowships

The Center for Clean Technology (CCT) Fellowships focus on promoting research into various fields related to clean technology. These include research areas such as clean energy production, pollution prevention, and sustainable energy technologies for the future.

Students supported through a CCT fellowship are expected to carry out research related to one of the CCT projects listed in this brochure. CCT Fellowships are awarded to PhD students who have demonstrated outstanding progress in their PhD research, and make a convincing case that they can help accelerate progress of the CCT projects.

CCT fellows are chosen by the **CCT Fellowship Committee**: Drs. **Jane Chang, Yunfeng Lu, and Vasilios Manousiouthakis**

Application Information 2019-2020

Eligibility Requirements, and Application Material:

- Enrollment in a UCLA PhD Program
- Advancement to Candidacy
- CV, Academic transcript, 1-page Statement of Purpose
- Rank List of 3 desired projects from CCT project list
- Published papers, if applicable

Applications to **miguel@ea.ucla.edu, by October 15, 2019**

CCT Project List

Potential Projects include, but are not limited to:

- Technoeconomic Analysis (TEA) of Integrated Gasification Combined Cycles (IGCC) with carbon capture storage (CCS)
- Design of novel plant technologies/processes for clean power generation from coal and natural gas
- Development of hydrogen separation membranes for power generation
- Development of sulfur tolerant catalysts and processes for hydrogen production
- Development of high-performance adsorbents for CO_2 capture
- Pre-combustion CO_2 capture in power plants, using partial pressure, pressure, temperature-swing adsorption
- Multi-scale modeling of membrane reactors for hydrogen/CO_2 production, separation and capture
- Multi-scale modeling of adsorptive reactors for hydrogen/CO_2 production, separation and capture
- Energetically Enhanced Hydrogen Production from Natural Gas
- Detailed simulation of IGCC, and other hydrogen generating process flow diagrams
- Sensitivity analysis identifying the impact of various process parameters on the cost of electricity (COE) for IGCC plants
- Optimization of IGCC plants incorporating Membrane Reactor/Adsorptive Reactor technologies for maximum power production and minimum cost of electricity (COE)

Questions to CCT Fellowship Committee:

Professor Jane Chang, (310) 206-7980, **jpchang@ucla.edu**
Plasma chemistries and surface kinetics, Computational surface chemistry, Semiconductor processing and chemistry
Professor Yunfeng Lu, (310) 794-7238, **luucla@ucla.edu**
Nanostructured and Biomimetic Materials/Devices, molecular design/self-assembly, energy storage/conversion
Professor Vasilios Manousiouthakis, (310) 206-0300, **vasilios@ucla.edu**
Process Systems Engineering (Modeling, Simulation, Design, Control, Optimization), Pollution Prevention, Process Integration, Green Engineering, Hydrogen Economy