

Opportunity Title: Consortium of Hybrid Resilient Energy Systems Professional Internship Program (PIP)

Opportunity Reference Code: NETL-CHRES-2021-PIP

Organization National Energy Technology Laboratory (NETL)

Reference Code NETL-CHRES-2021-PIP

How to Apply A complete application consists of:

- An application
- Transcripts – [Click here for detailed information about acceptable transcripts](#)
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional references

All documents must be in English or include an official English translation.

If you have questions, send an email to NETLinfo@oraui.org. Please include the reference code for this opportunity in your email.

Application Deadline 2/26/2021 11:59:59 PM Eastern Time Zone

Description The high penetration of intermittent renewable energy in the grid requires a high turn down capability, and the ability to maintain high efficiency at part-load operations. Therefore, the essential operational flexibility characteristics should include: 1) turn down ratio, 2) capability to quickly respond during startup and shutdown, 3) cycling, and 4) fuel flexibility. These important requirements can be potentially realized by hybrid energy systems and offer a significant opportunity for market penetration. This education opportunity will perform some system analysis related to fuel cell gas turbine hybrid system, fuel cell internal combustion engine hybrid system. The research projects include: 1) off-design: large turn up/down ratio; fast turn up/down response; high efficiency at part-load operations; 2) fuel processing for FC/GT hybrid systems: autothermal reforming, steam reforming, on-anode reforming, anode recirculation; 3) component degradation, economic analysis and multi-objective optimization.

Qualifications To be eligible, you must:

- Be a U.S. citizen
- Be an undergraduate or graduate student in good standing at a regionally accredited college/university, or a post-baccalaureate within two years of graduation
- Be associated with one of the following universities:
 - Universidad Ana G. Méndez
 - University of Texas at El Paso
 - University of New Mexico
 - University of Puerto Rico at Mayaguez
- Have an overall minimum GPA of 2.5/4.0
- Be at least 18 years of age at the time of appointment
- Provide proof of coverage under a health insurance plan prior to the beginning of the internship


The ideal candidate would have a strong background in some, but not all, of these elements:




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MATLAB-Simulink programming, thermodynamics, middleware interface, and dynamic controls.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Associate's Degree, Bachelor's Degree, Master's Degree, or Doctoral Degree.
 - **Overall GPA:** 2.50
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#) )
 - **Communications and Graphics Design** ([2](#) )
 - **Computer, Information, and Data Sciences** ([17](#) )
 - **Earth and Geosciences** ([21](#) )
 - **Engineering** ([27](#) )
 - **Environmental and Marine Sciences** ([14](#) )
 - **Life Health and Medical Sciences** ([46](#) )
 - **Mathematics and Statistics** ([10](#) )
 - **Physics** ([16](#) )
 - **Science & Engineering-related** ([1](#) )
 - **Social and Behavioral Sciences** ([28](#) )

Affirmation I certify at the time of application that:

- I am currently pursuing or have received an undergraduate degree no more than two years before the date of the internship appointment.

OR

- I am currently pursuing a master's degree.

OR

- I have not received a master's degree within three years, but currently pursuing a doctoral degree.

I certify also that I am

1. a U.S. citizen
2. affiliated with one of the following universities:

- Universidad Ana G. Méndez,
- Universidad of Texas – El Paso
- University of New Mexico
- University of Puerto Rico at Mayaguez