



# Puerto Rico Energy Center

**Dr. Amaury Malavé**  
**Executive Director**



# Mission

- To contribute to the creation of knowledge in alternative and renewable energy as well as energy efficiency practices and technologies.
- To promote the use and production of alternative resources to contribute to the preservation of the environment and the sustainable economic development of Puerto Rico.



# Organization

SUAGM and Universities

INTECO and industries

Executive Committee

Technical Committee

Advisory Board  
Eng. Luis Ramirez

PREC Executive Director  
Dr. Amaury Malavé

Scientific Department

R & D on innovative sources of energy

**Dr. Roberto Callarotti**

Energy Efficiency Department

Projects to reduce cost of energy and develop better energy management practices

**Eng. Felix Rivera**

Education and Department

Maintain an education and training program for students, professionals and entrepreneurs

**Prof. Sandra Pedraza**

External Resources and Relations Department

Development of partnerships and alliances

**Eng. Luis Herrera**

Business and Commercial Development Department

Commercialization and business development support

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# Activities

- Research and Development
- Education
- Demonstration
- Outreach
- Commercialization Support
- Technical Assistance

# Current Projects



## Materials Synthesis and Characterization Laboratory

- UT has the only hispanic DoE Massie Chair of Excellence, which sponsors part of its initiatives
- Research on materials with potential use for hydrogen storage , energy storage (batteries) and nanotechnology

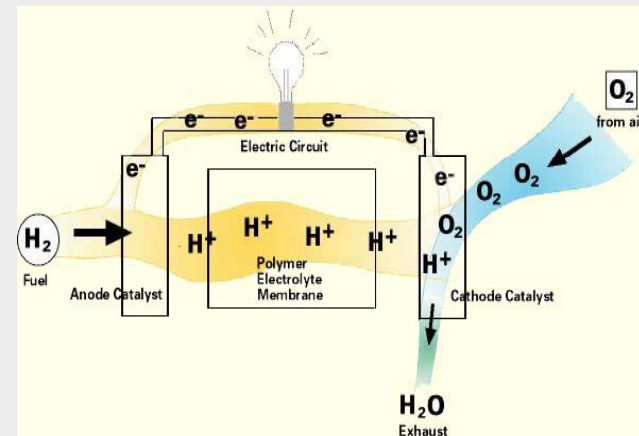
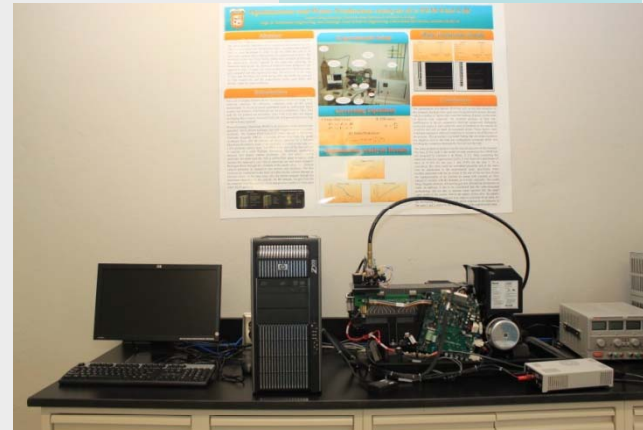


# Current Projects



## Fuel Cell

- Cell is currently used in research activities
- Generates 1.5 kW of power
- Study the magnetic and electronic transport properties at material interfaces



# Current Projects



## Ecologic House (Solaria)

- Ecologic, sustainable, and efficient house
- 1,250 sq. ft. with natural ventilation, compost toilets, and rainwater for domestic use
- Solar panels interconnected to grid using net metering
- Use of new construction and retrofitting building codes
- Used as a Guest House and funded by Casas Miantojo.



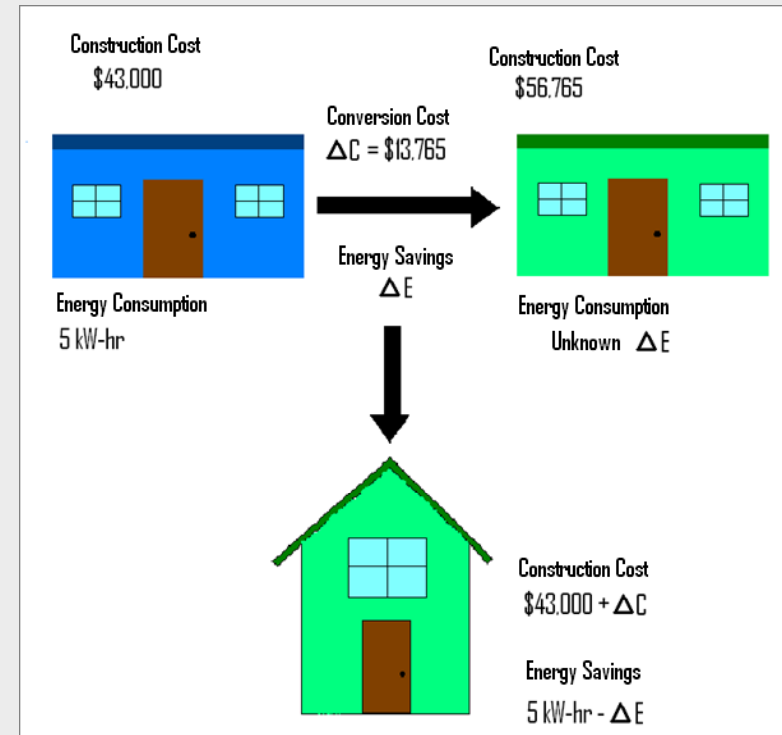
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# Current Projects

## Energy Conservation Code

- Energy consumption modeling using Energy Plus
- Improve energy efficiency at residential buildings
- Suggest new construction materials and methods for the Puerto Rico Energy Affairs Administration





# Current Projects



## Photovoltaic Array

- Solar panel array with an area of 23,000 sq. ft.
- Generates 60 kW of power providing electricity to PREC building
- One of the largest photovoltaic arrays in PR
- High-tech energy monitoring system to support research projects.



# Current Projects



## Educational Activities

- Formal courses, seminars and training activities as well as student enterprises
- Presentations and demonstrations in energy and renewable sources.
- Graduate students will be performing research activities in the field.





# Current Projects

## – Energy Efficiency

- Perform energy audits for small and medium size companies of the region.
- Provide energy management training.
- To strengthen the existing UT student-operated company providing energy management consulting services.
- Funded by WIRED, Aireko, Glenn International
- Success History: Fondos Unidos Building, Six Points Sheraton Hotel (Caguas), Universidad del Turabo Facilities and others

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# Current Projects



## Wind Turbine

- 1kW Wind turbine adquisition
- Courses on wind turbine design and installation
- Part of the renewable technologies showcased at our site



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# Contact Information

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