

# Research in Ecuador

Learn. Explore. *Make an impact.*



Prepare yourself  
for a globalized world



Learn about renewable  
energy for the future



Learn about **fuel cells**



Work **experimentally**  
or modeling



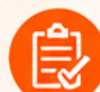
Try to live and work  
in a different culture



## SCIENTIFIC RESEARCH QUESTIONS

Plenty of questions have been raised related to hydrogen production and hydrogen utilization. Specific research questions can be stated once the area is selected:

- **Materials:** How can mechanical, electrical, and thermal properties impact the fuel cell behavior?
- **FC behavior:** How does the fuel cell perform without pure Hydrogen/Oxygen?
- **Modeling:** How do the transport parameters impact the fuel cell efficiency?



## POSSIBLE TASKS OF THE INTERN

Tasks will be discussed and agreed upon when the topic is selected for the prospective visiting students. Objectives will depend on the length of the stay period.

**Our group all speak Spanish and English and aim to speak German!!!**



## EXPERIMENTAL APPROACH

The research will focus on experimental or modeling PEFC (Proton Exchange Fuel Cell) research, such as new types of bipolar plate material development (by using expandable carbon), modeling characterization of Gas Diffusion Layers (understanding the different transport phenomena inside the PEFC through the GDLs) or PEFC behavior (understanding the energy conversion process when the cells are operated under various conditions).

**We are also trying to develop new and alternative materials for fuel cells!!!**



## A FRIENDLY AND SUPPORTIVE TEAM

- ✓ Collaborative team
- ✓ Open and supportive environment
- ✓ We enjoy what we do and we enjoy working together!



## ABOUT ESPOL



ESPOL is a teaching/research university in Guayaquil, Ecuador. It has been selected among the best three universities in Ecuador.



It is also possible for you to stay at the campus student accommodation. The campus is located around 13 km from downtown.



At ESPOL, our group is one of the most productive from a scientific point of view.



Guayaquil, Ecuador  
Gateway to South America



Interested?  
Let's connect!

[masespin@espol.edu.ec](mailto:masespin@espol.edu.ec)  
[www.espol.edu.ec](http://www.espol.edu.ec)