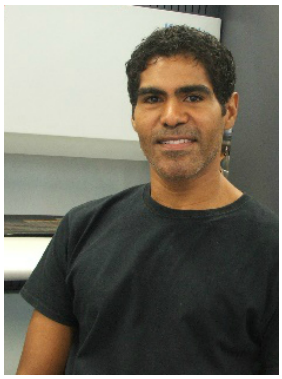
Project: Towards a comprehensive description of photoelectrochemical processes on model photoelectrodes

"In this project, advanced X-ray photoelectron spectroscopies under both welldefined and in-situ conditions will be applied to investigate design parameters of model photoelectrodes for the production of CO2 neutral solar fuels."
Freddy Oropeza Palacio (TU/e)



Can you do a short presentation about you?

Hello, I am Freddy, postdoc at Eindhoven University of Technology. I am a material scientist with special focus on the investigation of the structure and electronic properties of functional metal oxides with applications in catalysis, electronics and green energy technologies. I have experience in the study of the electronic structure of solids by experimental techniques such as photoelectron spectroscopy (PES) and X-ray absorption spectroscopy (XAS).

How is living in The Netherlands as a foreigner?

It has been pleasant in general. I think that the internationality of TU/e makes the process of adaptation very smooth. Also, I have been living as a foreigner in Europe for some time now, and I think the adaptation process is similar as in other European countries.

Would you advice a friend to come to the Netherlands?

Absolutely.

How/why did you finish in Eindhoven?

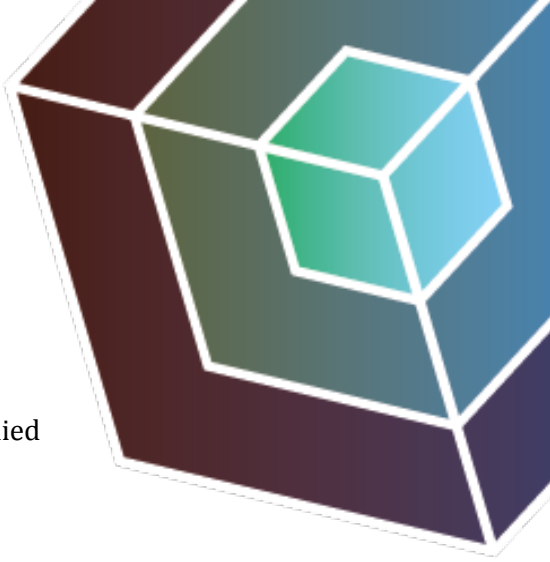
I was looking for a chance to work with advanced photoelectron spectroscopy techniques. Therefore, since the TU/e acquired a near ambient pressure XPS, I became very interested in coming and working here. And luckily I made it.

How did you become interested in science?

Maybe it's a cliché, but a very good science teacher in high school promoted my interest in the subject.

Did you know right away that you wanted to be a research scientist?

Not really. It came to me only after a disappointing industrial internship during my bachelor's degree.



What do you enjoy the most about your research?

It is very enjoyable (and important) to count with facilities that allow us to access fundamental properties of energy materials, which we can directly relate to their properties. In this way, we can gain a more complete picture of our studied systems and draw stronger conclusions.

What is your biggest motivation?

At this stage, I am very career-motivated. I think my time as a MCEC postdoc will give a big boost to my career.

How do you see yourself fitting in the MCEC project?

I have been focussing my research efforts on the study of the electronic structure of energy materials, which goes well in line with the MCEC project, especially since the incorporation of advance photoelectron spectroscopic techniques.

If you had a time machine and 2 beers, with which scientist would you like to meet?

I cannot think of anyone really. Although I acknowledge and admire the contribution of pioneers in my field, I honestly think the particularly interesting things about them are written in books and papers. I would much rather have those beers with current colleagues/friends – also interesting and good people to talk science with.

Which is the most memorable 'Eureka' moment in your life (not necessarily connected to science)?

Could be the time I learned I got a scholarship to study abroad in the U.K. It was the first big step in my career.

Which scientific term/phenomena you think is the most misused by media?

That must be 'Theory'.

What do you like to do in your spare time?

I am a traveller. In that sense, it is a big advantage to live near Eindhoven airport.

Is science the answer to everything?

No. But it can strongly influence the answer to everything.