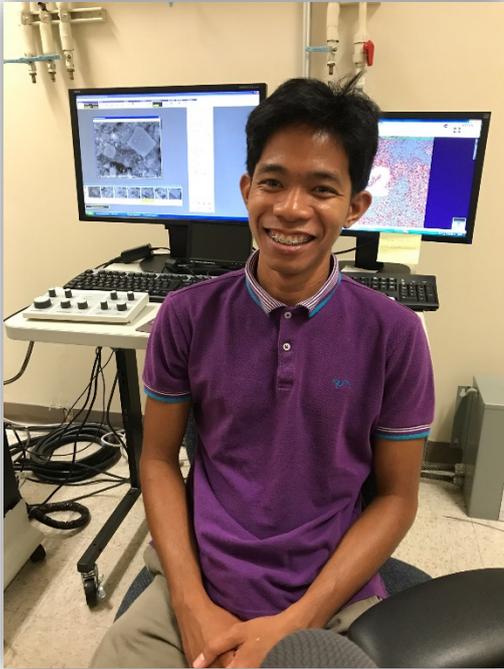


Advanced Research Scholar – PhD Dissertation

Jose Paolo Bantang

De La Salle University



Field of Study:
Research Period
US University
US Professor
Research Title

Chemistry – Materials Science
April 2017 – March 2018
University of Texas in San Antonio
Dr. Kirk Schanze
Towards Greener Energy: Fabrication of Dye-Sensitized Solar Cell based on Carrageenan

Describe your research conducted in the US.

My research is on the synthesis and characterization of carbon nanodots for improving the efficiency of water-based dye-sensitized solar cells. My objective is to use kappa-carrageenan, a seaweed polysaccharide commonly manufactured in the Philippines, as a precursor for carbon nanodots and as sensitizer for dye-sensitized solar cells. Also, this polysaccharide will also act as a water-based polymer electrolyte for dye-sensitized solar cells.

What was the highlight of your research in the US?

The major highlight of my research is the discovery that we could harness the sunlight and convert it into electrical energy using natural and abundant materials such as carrageenan.

In what way has the USAID scholarship changed you?

The USAID scholarship gave me the opportunity to become more productive in research, interact with international students, and be more confident in writing research proposals.

How would you use the knowledge and skills gained through your research to contribute or influence economic growth in the country?

I am planning to continue doing alternative energy-related research in the Philippines. I believe that alternative energy has the potential of lowering the cost of electricity and make electricity become accessible especially to communities in highly remote areas.

As a young scientist, what do you envision for the Philippine science, technology and innovation ecosystem in the next 10 years?

With the current economic growth and the government's interest in supporting research and development, more Filipinos are encouraged to pursue career in science. Hopefully, universities in the Philippines will be as competitive as the universities in the US in terms of research and development.

Upon his return to the Philippines, Jose Paolo will apply as a university faculty. He also plans to apply for another research grant to continue doing research.

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