



香港城市大學  
City University of Hong Kong

## The development of solar power projects based on the analysis of photovoltaic devices

**Project Number:** 6000595

**Principal Investigator:** Dr. Sam Hsien-Yi HSU

**Grant Type:** TSG

### **Abstract:**

The project is to apply the analysis of photovoltaic cells to enhance the teaching related to energy. Aiming to give an overview of the photophysics and photoelectrochemistry of photovoltaic cells and their behavior. It also introduces how light absorption can be used to induce energy transport, charge transfer and charge separation for energy generation in photovoltaic cells. Finally, it describes the factors that affect the design and behavior of photovoltaic cells. The procedure of photovoltaic cell fabrication with the analysis of photophysical and photoelectrochemical properties will enable the students to understand photovoltaic devices and observe its dynamic behavior and materials characteristics. Through the observation of photovoltaic devices analysis, students would learn how to relate mathematical formulas of the theory of solar cells to the real world in order to develop a deeper understanding of the photophysics and photoelectrochemistry of solar devices.