

Progress Report

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1. Purpose of the project

The p-n junctions in inorganic semiconductors are exploited in a wide range of today's electronic applications. Thus, the organic p-n junctions may have potential in some applications such as organic photovoltaic cells. Pursuing this purpose, project focuses on the fabrication of organic solar cell base on heterojunction between single crystals pentacene/perfluoropentacene and examination its photovoltaic characteristics.

2. Experiments

Using single crystals pentacene and PFP which is mentioned in previous reports, I made samples with structure show in figure 1 and then measure its I-V characteristics with and without light exposure.

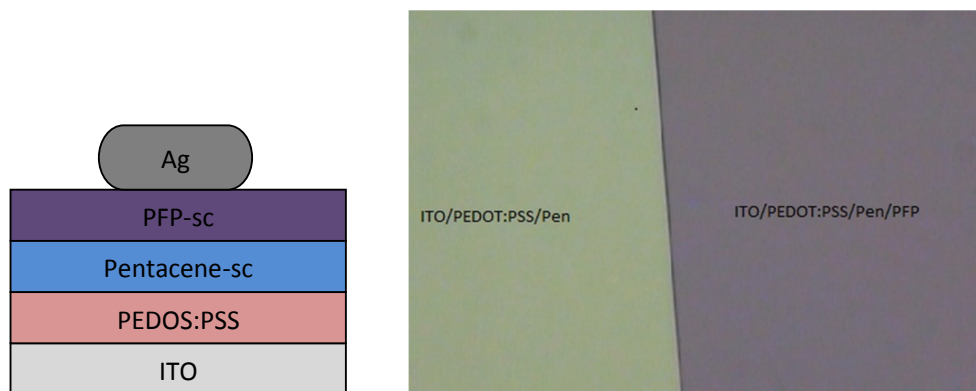


Figure 1: Sample structure (left) and image of PFP single crystal edge on top of the pentacene single crystal (right).

The I-V curve of this sample is shown rectification but no photovoltaic effect. It may due to the work function of silver is not appropriated. (The silver electrode is used because of its easy fabrication.)

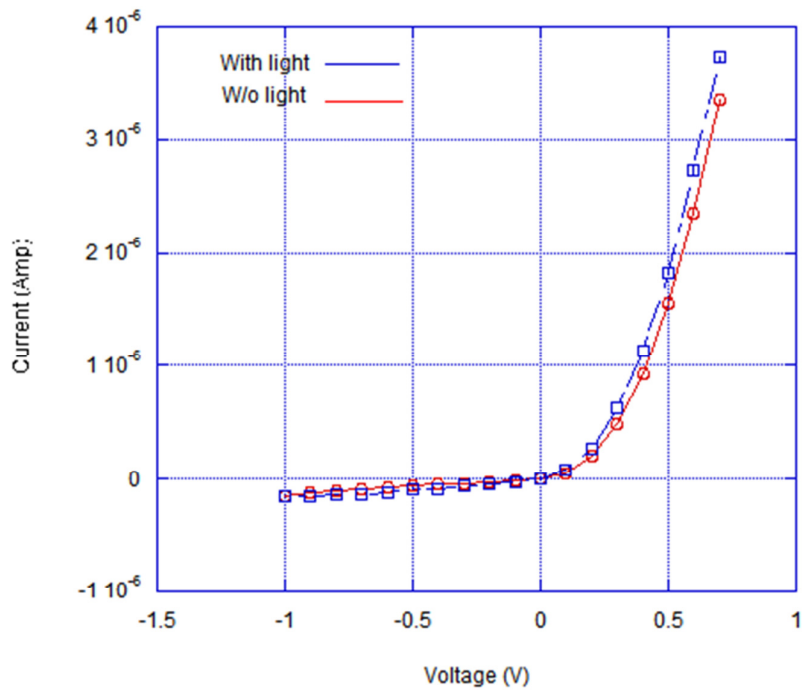


Figure 2: I-V curve of my sample.

3. My next plan

My next plan is trying to make large enough single crystals in order to deposit aluminum as the second electrode and characterizing them.