

Projects in Organic Electronics

1. Simulation of OTFTs using FEMLAB (Dr. Mazhari).

One can understand the theory of Organic Thin Film Transistors in the same way as OLEDs or Organic Solar Cells. As, explained in class, these transistors are very important for Active Matrix organic displays. The project will involve using FEMLAB to simulate a Bottom Contact Organic Thin Film Transistor (OTFTs). The problem is similar to Abhinav Sharma's thesis and so, a special lecture will be organized on how to use FEMLAB and one explaining the functioning of OTFTs. The simulations once done on FEMLAB will help form a theoretical base and the results of the simulations will be confirmed by measurements.

2. Simulation of Organic Solar Cells (Dr. Mazhari)

A simulator was made by Sachin Kumar in his MTech thesis, which can be used to simulate bilayer Organic Solar Cells. This will be used to simulate a single layer Organic Solar Cell and study its I-V characteristics (dark characteristics) which are exponential for low voltages and then undergo a transition to some kind of a SCLC. No suitable model exists for this kind of an I-V relationship. So, the work will add on to the current/circuit model suggested in my BTP and study its validity for different barrier heights and other factors.

3. Fabrication and Characterization of Organic Solar Cells (Dr. SSK Iyer)

In this project students are expected fabricate and characterize solar cells based on GB molecules which have been developed by the chemistry dept at iitk. The concerned student will get a chance to work in the clean room set up at Samtel Center.

4. Fabrication and Characterization of OLEDs (Dr. Mazhari)

In this project students are expected fabricate and characterize OLEDs. The concerned student will get a chance to work in the clean room set up at Samtel Center.

Students interested in fabrication projects must contact us asap.

For any further queries feel free to contact us at
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