

II.2 Introduction to Renewable Energy

Research in the Renewables area seeks to develop technology which can be used to harvest solar, wind, geothermal and other forms of energy that are continuously replenished by existing geophysical processes at a rate exceeding the rate of extraction. In the long term, renewable energy has the potential to be carbon-neutral, and is therefore very appealing. GCEP currently has one project in solar energy conversion in its renewables portfolio, and will seek to add further projects in future solicitations.

Professor McGehee is developing nanostructured photovoltaic materials that could be deposited in reel-to-reel coating machines. This research will lead to devices that will efficiently split excitons and carry charge to electrodes, that will have improved packing of the molecules in the organic semiconductor to enhance its ability to carry charge, and that will have a modified organic-inorganic interface to prevent recombination of electrons and holes.