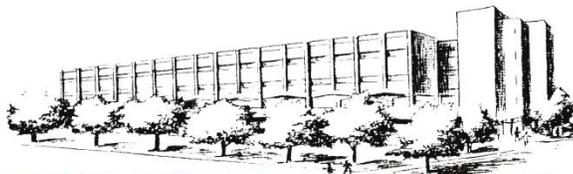


UNIVERSITY OF CONNECTICUT



INSTITUTE OF MATERIALS SCIENCE

POLYMER PROGRAM SEMINAR

“High Performance Multifunctional, Halloysite-Containing Coatings for Desert Based Solar Cells”

**Prof. Khalid Askar
Masdar Institute of Science and Technology
Abu Dhabi, UAE**

**Friday, April 7, 2017
11:00 AM, IMS Room 20**

ABSTRACT

Solar cells generate electric power by converting sunlight into energy. There have been significant technological advances targeting the enhancement of the amount of energy solar cells can produce. Today, solar cells are seen everywhere from the rooftops of homes, above parking meters on the roads, to even household appliances that we use on a daily basis. Depending on the location solar cells are placed, the surface of the cell can be exposed to dust, dirt, grime, bird droppings and air pollution and the panel can also get scratched by sand, leaves or tiny pebbles. These factors can tremendously affect the performance of a solar cell and lower the conversion efficiency drastically. With just 4 grams per square meter of dust on a solar cell surface the amount of energy loss is 40 percent. Therefore solar cells are usually maintained on a regular basis and cleaning systems are installed to rinse the solar panels surface with water to wash away any dirt or grime that might have accumulated on the surface of the panels. However, cleaning and maintaining solar cells on a regular basis can be very expensive and sometimes it can be very difficult depending on the location of the solar panels. Solar cells located on top of buildings are more difficult to clean than solar cells on the ground. Panels placed in desert climates such as in the Middle East where dust storms are common are harder to clean due to scarce water sources in the vicinity. Thus, finding novel fabrication techniques to develop a coating that can be placed on the surface of solar cells and have the following properties: 1)Anti-reflection, 2)Anti-soiling, 3) Abrasion Resistance and 4)Self-healing would be extremely crucial in lowering the cost of maintaining solar cells.

**For further information, please contact YoungHee Chudy at younghee.chudy@uconn.edu or 860 486 3582.*