

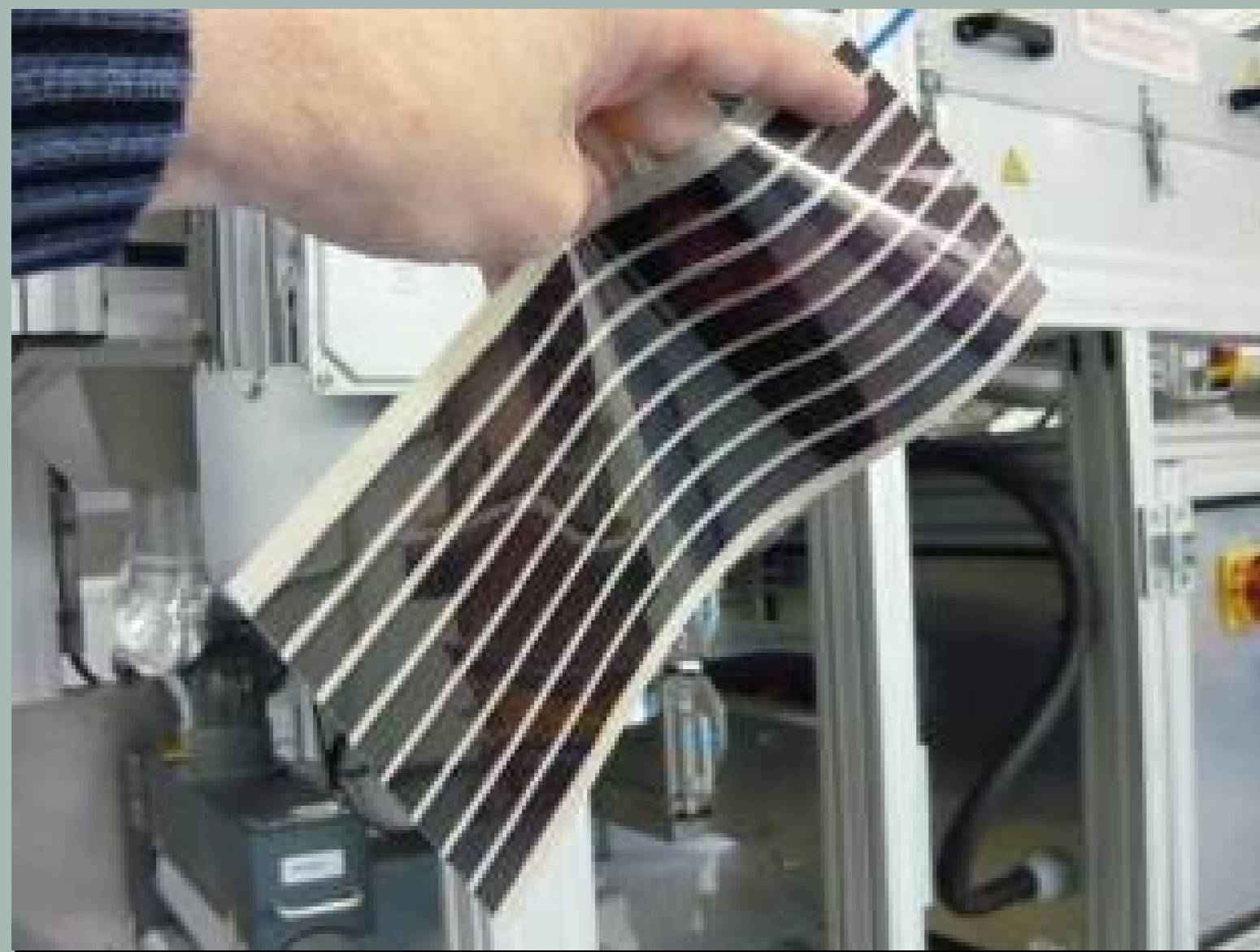


Photovoltaic and Charge Transfer Laboratory

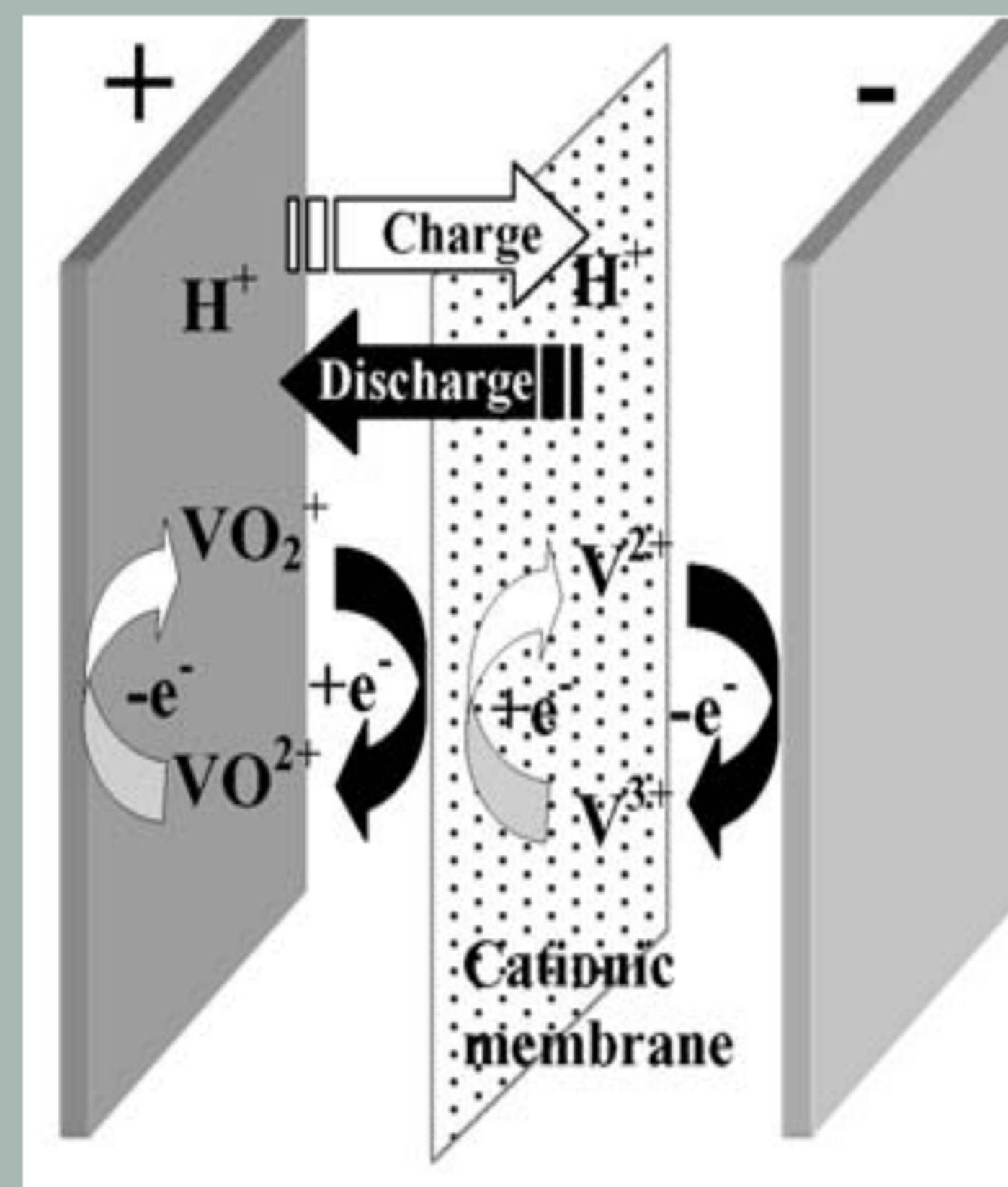
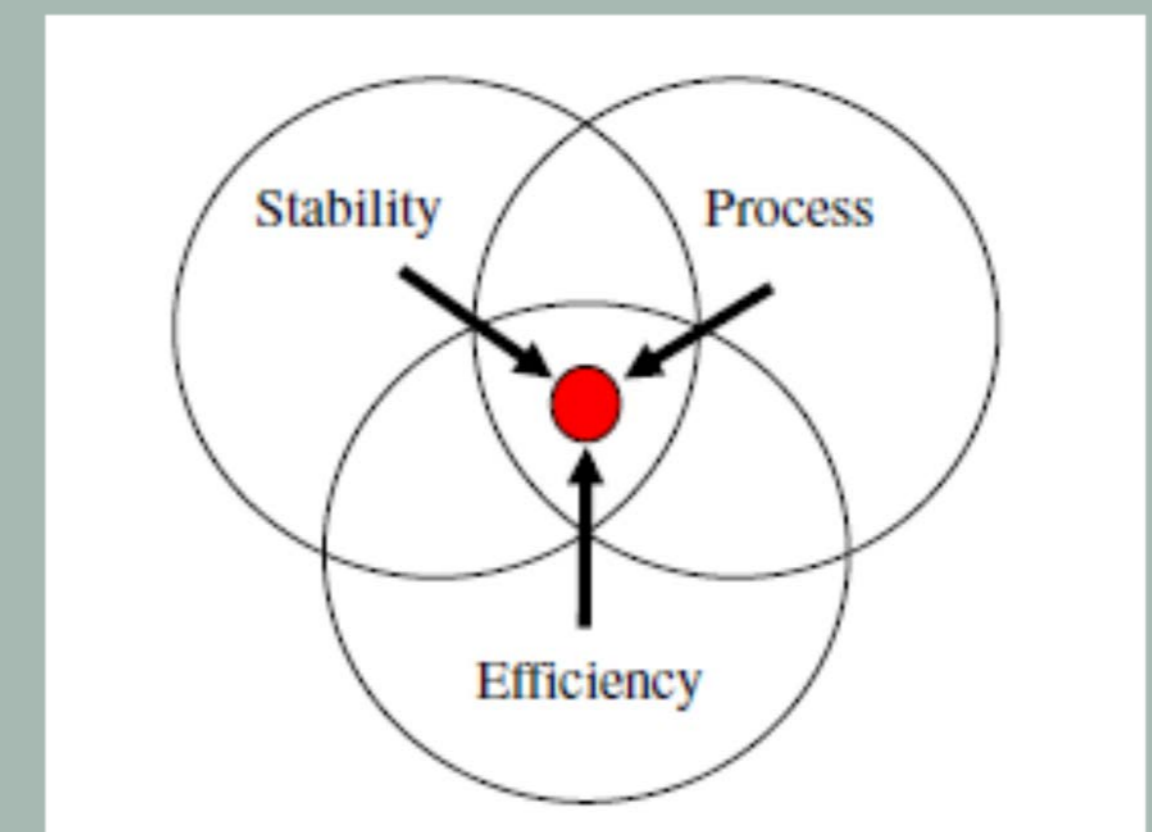
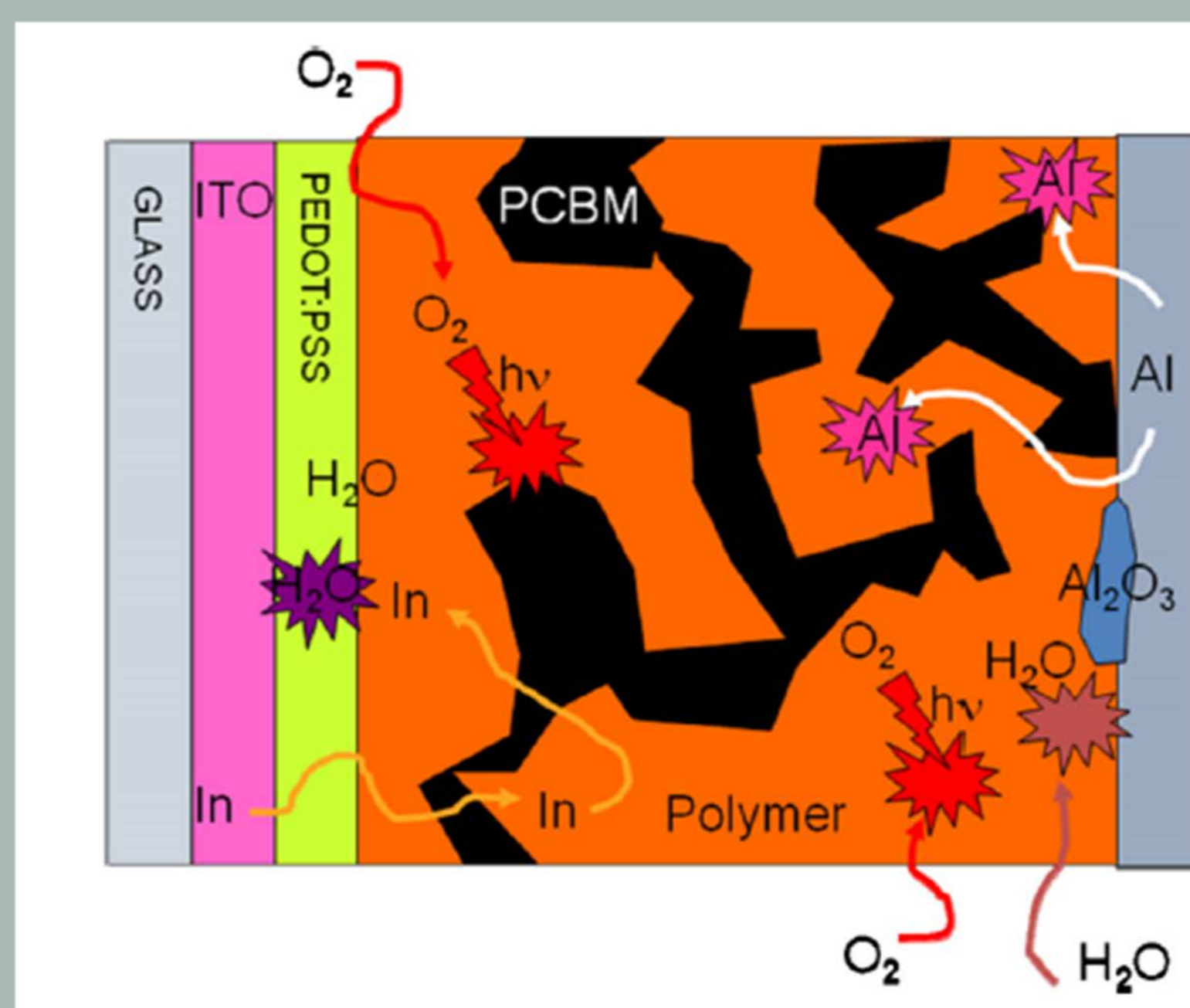


The Swiss Institute for Dryland Environmental and Energy Research
(a selection of future and continuing research)

Organic and nanostructured solar cells: towards high efficiency and stability



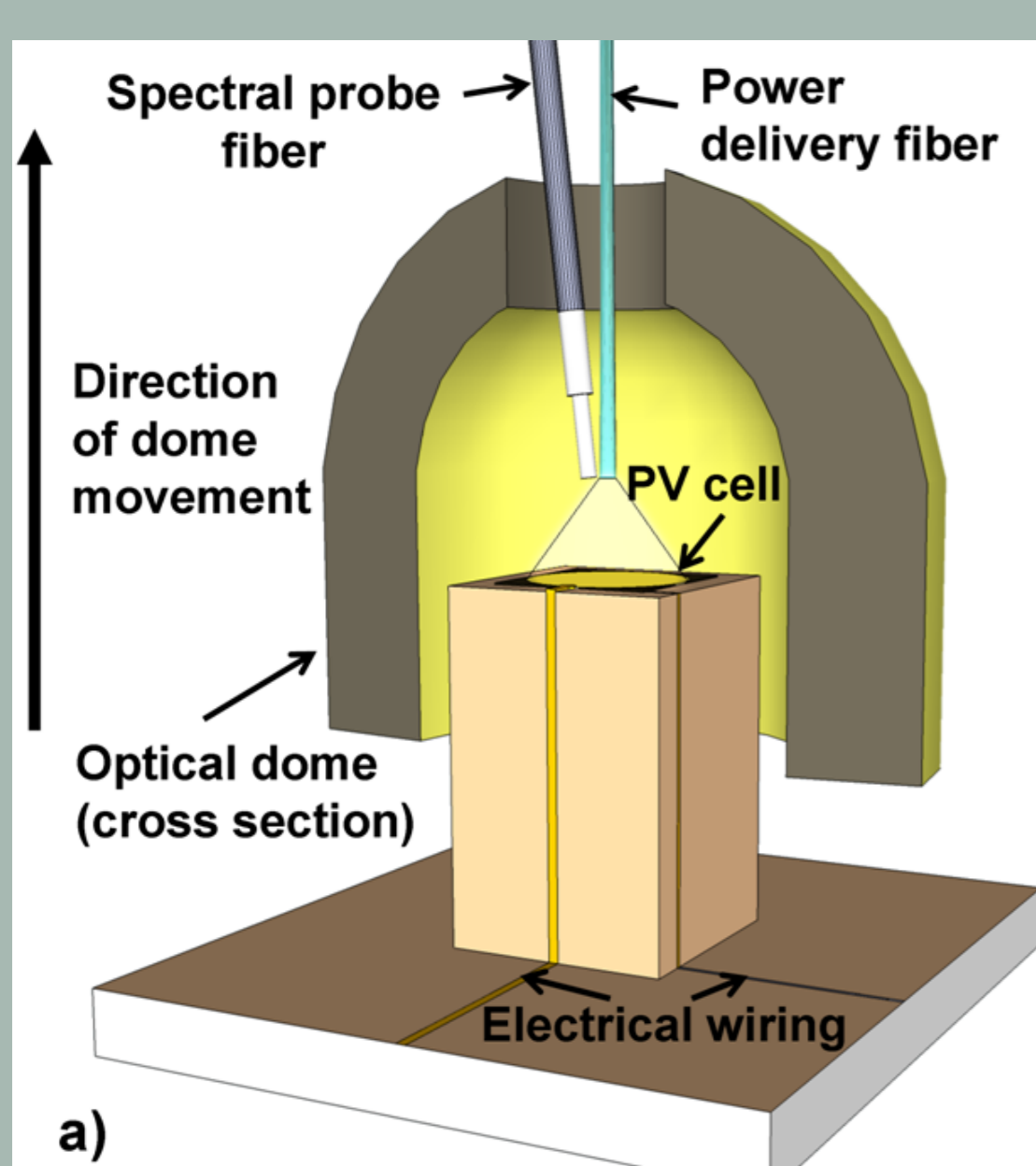
Development of polymer/fullerene/carbon nanotube photoactive layers and solar cells as well as characterizing of their performance and operational stability of these cells requires a glove-box, spin-coater, vacuum post and UV-Vis spectrophotometer for light absorption spectra of photoactive layers.



Battery storage: smoothing the variability of alternative energy sources.

Efficient energy storage via vanadium redox flow batteries: Resolving the complex transport and cross flow reactions of vanadium ions requires a multitude of expensive equipment such as cyclic voltammetry, chronoamperometry, impedance spectroscopy and a rotating disk electrode.

Development of novel concepts of ultra-efficient solar cells



Experimental testing of novel concepts of ultra-efficient photovoltaic conversion recently suggested by the Institute researches (light management in solar cells, vertical multi-junction solar cells, thermophotovoltaics) requires photolithography and local bonding/contacting setups, solar simulator, scanning optical microscope with Light Beam Induced Current (LBIC) regime (example is shown on the right).

