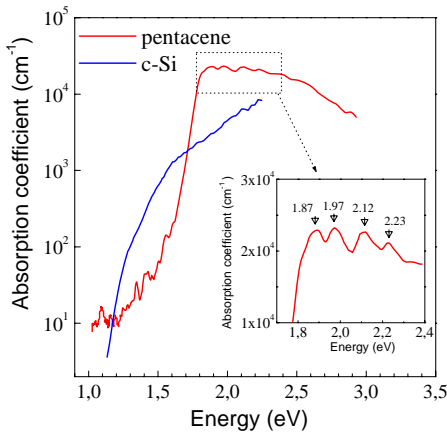
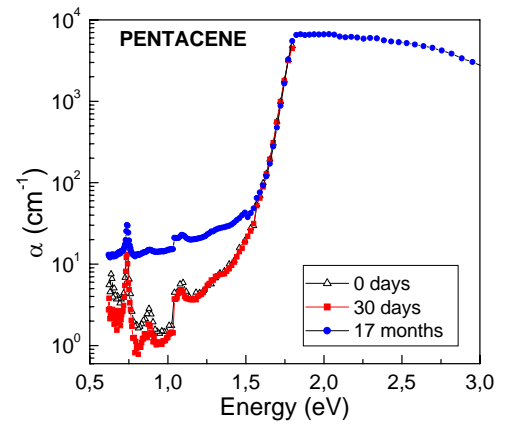


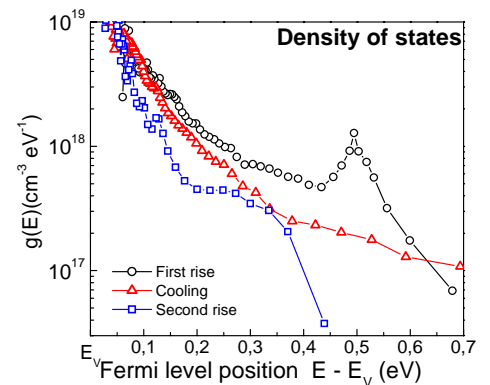
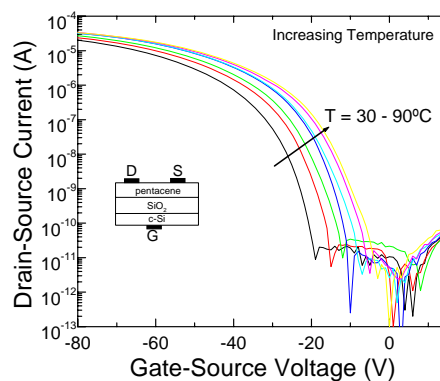
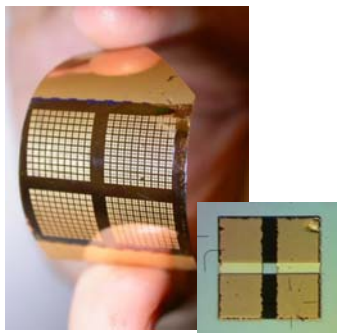
1_Low-level optical absorption coefficient of organic materials by PDS



In order to fabricate organic solar cells, it is very important to know the optoelectronic properties of the used organic semiconductors. In our group, the low level optical absorption coefficient of organic materials is determined by Photothermal Deflection Spectroscopy (PDS). The high sensitivity of this method allows to measure the optical absorption related to band tail and midgap localized states. In addition, it offers information about excitonic levels and degradation kinetics of organic materials (oxidation).



2 Density of states (DOS) and field effect mobility from TFT characteristics



On the other hand, we are able to fabricate and characterize organic Thin-Film Transistors (TFTs) and diodes using small-molecule semiconductors (pentacene, C₆₀, PTCDI-C₁₃, PTCDA, CuPC...). These devices are used to evaluate the transport properties of the organic semiconductor. In particular, the field-effect mobility and density of states (DOS) is deduced from the organic TFT characteristics measured as a function of the temperature (30-100 °C).

3 Fabrication of templates for substrate texturing

One technological strategy to increase the organic solar cell efficiency is the use of light confinement strategies. We have wide experience in the fabrication of crystalline silicon textured templates that have been transferred to flexible substrates by the Hot-Embossing technique or Nanoimprinting lithography. On the other hand, 3D silicon microstructures could have application in novel device structures.

