

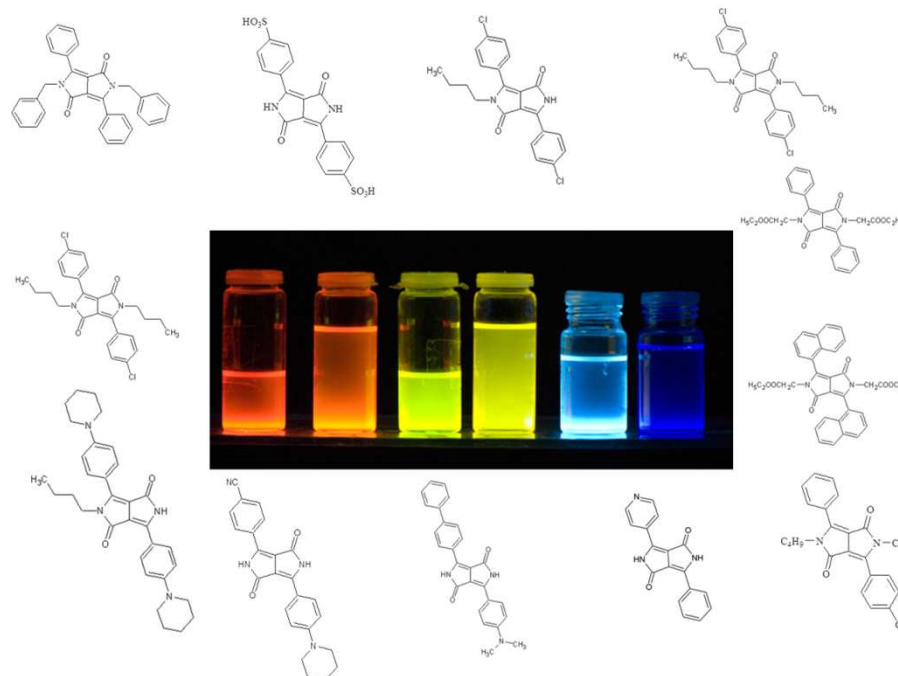
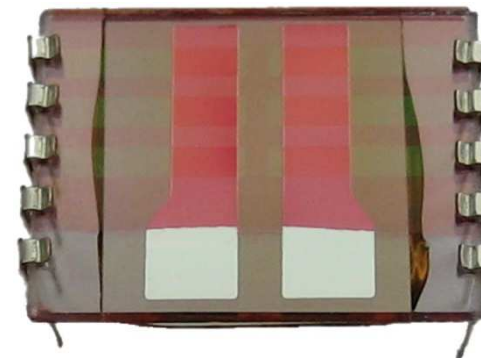
The group of functional smart materials



- is well **established research team** with long term **experience** in the field of inorganic and **organic semiconductors**.
- is focused on study of **physics and chemistry** of responsive smart materials.
- **collaborates** with numerous national institutions **and participates** on projects with partners from 12 European countries. **FP7-SME project** DEPHOTEX.

We are focused on

- **construction** and characterization of new **devices** transforming the optical signal to electrical response and vice versa (photodetectors, solar cells, light driven molecular current switch, OLEDs, etc.).
- **construction** and characterization of **field effect transistors (FET)** from new promising materials.
- **theoretical and experimental study** of the optical absorption, luminescence, charge and energy transfer, charge carrier photodissociation and following charge transport, capture and recombination, transistor effect, etc.
- techniques for **synthesis**, design and characterization **of new materials**.



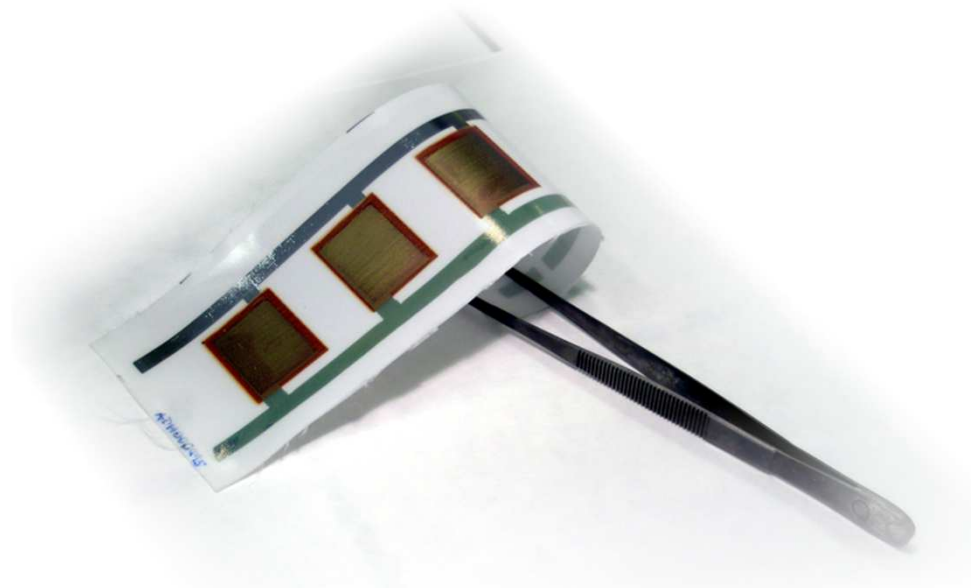
We can offer...



- **experiences** in preparation and realization of FP7 projects (Development of Photovoltaic Textiles based on novel Fibres)
- spin coating method, spray coating, inkjet printing, vacuum evaporation, glove box and clean room based deposition procedure
- photocurrent spectroscopy (CW) and time resolved photocurrent measurements (quantum yield of charge carrier generation, charge transport and charge traps, charge carrier mobility)
- time resolved and steady state optical spectroscopy, eg. flash-photolysis, fluorescence, IR (charge and energy transfer, fluorescence lifetime, etc.)
- characterization of optical and electronic properties of thin films (space-charge-limited current techniques, impedance spectroscopy, photoconductivity, electroluminescence, homogeneity of thin films, etc.)

Proposal: Novel materials for environment protection and sustainable development

- The project proposes the development, characterization and application of advanced organic materials for environment protection and sustainable development. The small molecular materials will be proposed and applied in different devices such as:
 - Organic photovoltaics,
 - Light and IR sensors,
 - Nonlinear photonic devices,
 - Gas sensors for monitoring of the environment,
 - Sensors for cells physiological function detection.
- The detailed scope of the project should be negotiated with respect to the expectation of the partner.





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