Self-Organized Hybrid Devices for Electronic Applications– OLEDs and OPVs using organic-inorganic hybrid materials

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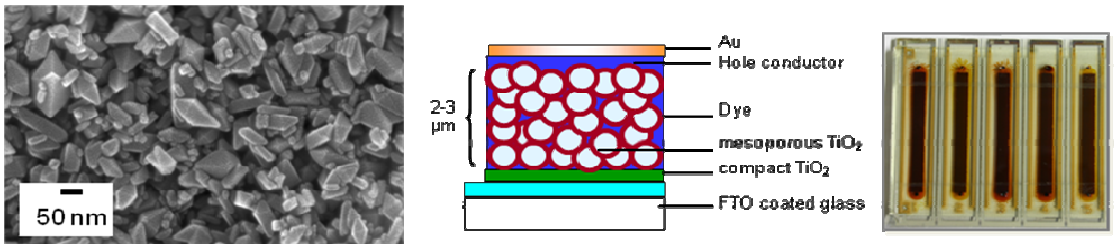
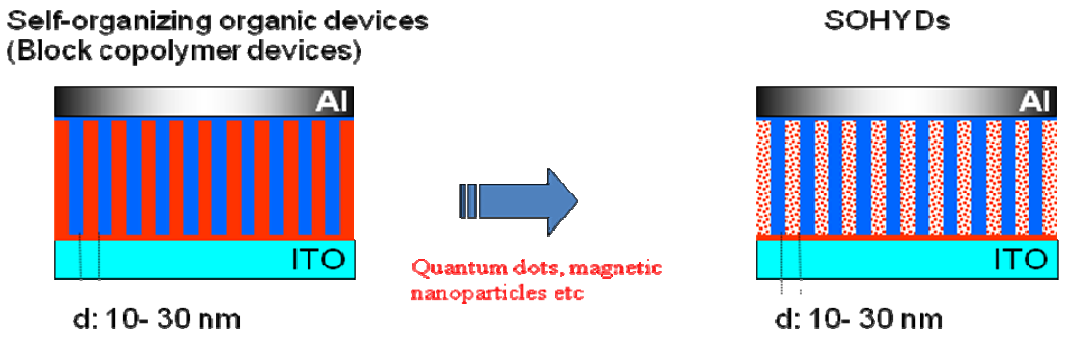
The The Collaborative Research Project SOHYDs concentrates on developing self-assembling and hybrid structures suitable for novel technological applications such as Organic Light Emitting Diodes (OLEDs), organic photovoltaics (OPVs) etc. A main theme running through the individual projects to realize highly efficient hybrid systems is how to control the interfaces and physical processes occurring in such complex systems via suitable design of molecules and materials. In a final stage these hybrid systems are integrated into devices and the device characteristics, device morphology etc are elucidated. Some examples are shown in the following.



SEM of mesoporous netwerk of highly crystalline anatase titania nanocrystal film used in solid state dye sensitized solar cells, a scheme of the cell and a picture of five test cells on a substrate of 76 mm x 76mm.



Schematic representation of evolution of SOHYDs from self-assembling organic devices based on block copolymers capable of microphase separation

References

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