Some of these crystals also represent problem cases as the ensuing crystals are generally small and extremely prone for different kinds of twinning. Still, a first classification of such systems seems to be feasible. Results of these investigations will be reported concurrently.

Keywords: supramolecular assembly; disorder; crystallization

FA4-MS04-P11

High Performance Organic Field Effect Transistors, Textured by Self-assembly. Jens W. Andreasen[a], Claudia M. Duffy[b], Hoi N. Tsao[c], Dag W. Breiby[d], Wojciech Pisula[c], Masahiko Ando[e], Takashi Minakata[f], Don Cho[c], Ali Rouhanipour[c], Martin M. Nielsen[g], Henning Sirringhaus[b], Klaus Müllen[c]. *[a]Solar Energy Programme, Risø National Laboratory for Sustainable Energy, Technical University of Denmark. [b]Optoelectronics Group, Cavendish Laboratory, University of Cambridge. [c]Max Planck Institute for Polymer Research. [d]Department of Physics, Norwegian University of Science and Technology. [e]Hitachi Cambridge Laboratory. [f]Asahi-KASEI Corporation. [g]Centre for Molecular Movies, Niels Bohr Institute, University of Copenhagen.*
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It is often stated that the penetration of so-called pervasive computing in society depends on the availability of cheap, even disposable, electronics for RFID tags, sensors, flexible displays and matching backplane circuits. Organic field effect transistors (OFETs) are expected to be the building block for these devices, but have been hampered by their low mobility. The performance of organic field effect transistors is seriously compromised by trapping and scattering sites that may comprise structural defects and grain boundaries. Thus, it is crucial to control the formation of such sites, minimizing their occurrence frequency in the completed device, preferably as an integral part of facile processing, i.e. by self-assembly. Research has to a large degree focused on device models based on spin-coated thin films, but in practice, real devices will be manufactured by printing techniques. It is therefore important to determine the process of self-organization of organic molecules using either industrial, or simulated industrial deposition methods. Examples are inkjet or coating methods using molecules in solution. It is well established that texture can be induced by crystallisation from solvent in confined geometries with substantial impact on the charge transport properties of organic semiconductors [1]. We present two cases that may be regarded as laboratory equivalents of the "slot die" and the "immersion/dip coating" techniques of the coating industry, and demonstrate the self-organization effect of these techniques. The first example uses the zone-casting technique [2] which is closely related to the roll-to-roll slot-die coating method. With this method, we demonstrate thin-film deposition of large area (several mm^2) crystalline mono-domains of the small-molecule organic semiconductor, pentacene [3]. The second example employs the dip-coating method with a high-mobility conjugated copolymer, cyclopentadithiophenebenzothiadiazole, which shows a doubling of the charge mobility in the processed device because of crystalline texture [4]. The thin film crystalline texture was in both cases determined by comparing grazing incidence X-ray diffraction data with simulations [5].

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Keywords: organic electronics; conjugated organic compounds; grazing incidence X-ray diffraction

FA4-MS04-P12

Variation in the Supramolecular Assembly of the Molecular Container *p*-Sulfonatocalix[4]arene, a Well-Known Supramolecular Building Block. Clive L. Oliver[a], Leonard J. Barbour[b]. *[a]Department of Chemistry, University of Cape Town, South Africa. [b]Department of Chemistry, University of Stellenbosch, South Africa.*
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The well-known supramolecular building block *p*-sulfonatocalix[4]arene (mostly occurring in its anionic form) crystallizes in a variety of different packing arrangements, depending on the co-crystallized components. It has especially attracted attention when it crystallizes in large, spherical arrangements of twelve calixarene anions residing on the vertices of an icosahedron or cuboctahedron, respectively, the former mimicking the geometry of the many viruses [1,2]. Here we report a variety of novel arrangements of the *p*-sulfonatocalix[4]arene anion some of which include large, multi-component assemblies not conforming to the geometries of the previously reported Platonic and Archimedean solids.

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FA4-MS04-P13

Structure of 2-amino-3-hydroxymethylpyridinium 2-Benzoylbenzoate Monohydrate. Hakkı Yasin Odabaşoğlu[a], Mustafa Odabaşoğlu[b], Orhan Büyükgüngör[c]. *[a]Pamukkale University, Textile Engineering, Denizli-Turkey. [b]Pamukkale University, Chemistry Program, Denizli-Turkey. [c]Ondokuz Mayis University, Department of Physics, Samsun-Turkey.*
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