ICOE (International Conference on Organic Electronics): June 16-18, 2008, Eindhoven, The Netherlands

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There were, and are, conferences associated with organic and molecular electronics. They mainly have delegates from management and business whereas there was a recognisable need for a more fundamental meeting for scientifically active engineers, physicists at the postdoc and more senior levels, as well as those undertaking PhDs in the field. It is now in its fifth years and it has been held in the conference facilities at the world famous Philips labs in Eindhoven. It is coupled with workshops which are held free of charge. There has been 15 speakers mainly covering fundamentals from photovoltaics to electronic circuit design as well as keynote speakers in the conference itself. The average number of attendees has been about 100.

The 2008 meeting was as usual held in the middle of June and occupied 3 days full days with invited talks from Neil Greenham from Cambridge University on photovoltaics. This subject acquires increasing levels of interest with time. There are problems with stability and efficiency but much of the understanding of photovoltaics in organic semiconductors has come from the Cambridge Physics group. Ananth Dodabalapur is one of the fathers of the organic transistor technology, now at the University of Texas but previously with the start-up Organic IC and Bell Laboratories. He emphasised the need to understand trapping effects in determining device stability and circuit speed. Both of these are among the most crucial items in roadmapping the field. Sony presented an exciting talk on their new technology and Savas Tay a postdoc from the University of Arizona described the use of organic materials in holography. The latter was introduced as part of the policy of ICOE in selecting a very recent paper from 'Nature' or 'Science' which is close to but not necessarily coincident the primary interests of the delegates to the conference.

Several trends were noted from the abstracts submitted to the conference and the subsequent presentations. One was the increased interests in soluble versions of pentacene such as 'TIPS'. They have the advantage of more mobile carriers whilst being compatible with printing. It also became apparent that these films have irregular surfaces which, if not addressed will have limitations in terms of reduction in channel length and maintaining the yield of interconnect in real circuits.

A disappointment was the lack of strong papers on circuit design. There is an increase realisation that new circuit design concepts may be the best way of overcoming some of the problems imposed by the materials. These include the spread of parameters which is closely linked to the presence of trace amounts of air in the semiconductor. It also emphasises the need for concentrated effort on ways of preventing the diffusion of air into the films.