The new, lean, information screen

Plastic electronic screens a few millimetres thick that can be fixed to clothing or to a tin can could be the basis for the next revolution in lighting and information.

An international research project has begun that could help bring to market organic light emitting devices (OLEDs), which are wafer-thin devices that can convert sunlight into electricity and vice-versa.

Because the devices are thin and flexible, lighting and electronic display screens could, for the first time, be created on almost any material, and the devices could be used in many ways:

- as a transparent window. A transparent OLED is pasted onto a conventional window and acts as a solar cell by absorbing light and storing it as electricity. When it gets dark a switch is turned on and the entire window area emits light in a much more efficient way than conventional or energy saving bulbs, promising huge savings
- included in clothing, which can then change colour at the press of a button
- as strips of the polymer which run off solar power and which could be attached to clothing or packaging. These strips would show electronic messages, broadcast through wifi, which can be updated. An example could be information on the health warnings on food that goes off, or traffic updates on the jackets of police officers.

An international consortium of researchers, led by the University, has begun an £850,000 project to put the science behind the devices on a firmer basis. The consortium, called Modecom, consists of 13 groups from Europe, the USA and China.

The co-ordinator, Dr Alison Walker, of the Department of Physics, said: "Success in achieving the goals of cheap, efficient and long-lasting devices is essential as we must do everything we can to bring this novel technology to the point where it can be exploited."