



SMART Microsystems

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The Smart Microsystems concept promises to extend the functionality of standard Integrated Circuit (IC) technology by combining it with a wide variety of different materials, sensors and actuators. The integration of novel Microsystems technologies with the processing power of modern silicon electronics has the potential to transform a wide variety of application areas ranging from medical diagnostics and sensing to consumer electronics. Post processing of CMOS (the standard technology for silicon electronics) involves the addition of new structures and materials on top of ICs to add value and extend functionality. Although the UK is very strong in the field of IC design most of the advanced CMOS fabrication is now performed in silicon foundries in the Far East. However, the move to foundries means that the ICs have become a commodity where the added value can come from bespoke post-processed technologies.

The Smart Microsystems group is made up from members of the Institute of Integrated Systems which brings together researchers from the Universities of Edinburgh and Heriot who have many years of experience in the development of microsystems technologies, some of which have led to very successful spin-out companies. The IIS is one of the few research groupings in the UK with the capability to bring together IC designers, materials specialists and process technologists in one place to develop exciting and novel technologies for integrated microsystems with great potential for knowledge transfer and commercial exploitation. They will work with a number of industrial partners, led by National Semiconductor, to develop new materials, production methods, and post processed microsystems, with the aim of generating knowledge that will greatly benefit the UK economy.