Title: Designing and embedding IC dies into yarn without dedicated signal interconnections to be woven into wearable cloth

Type of award  PhD Research Studentship

Department  Electrical & Electronic Engineering

Scholarship Details
- full UK PhD tuition fees
- a tax-free bursary of no less than £17,000 p.a. for at least 3.5 years

Duration  3.5 - 4 years

Eligibility  Home (UK) only

Start Date  25 – 29 September 2017

Application deadline  Midnight 14 September 2017

PhD Topic Background/Description
Future applications of microelectronic circuits may be envisaged that depend upon the removal of the physical restriction of a rigid package. For example, wearable human-monitoring membranes, robot encapsulation, conformal man-machine interfaces, smart clothing, wearable computing and miniature board-less electronic systems. These applications require electronic computation in a package which is physically flexible where the inputs are from environment monitors (sensors) handling dynamic information that is distributed across a membrane-like device. This PhD study will focus on the integrated circuit (IC) design requirements, but also approach the material science and fabrication techniques required for a woven yarn-based material with imbedded IC functionality. A key research emphasis will be the circumvention of dedicated interconnections between the IC dies along the length of the yarn; thus, providing a robust platform with inherent immunity to single points of failure.

Students will be based at the University of Bristol in the Department of Electrical and Electronic Engineering where much of the research will be in the analogue IC design domain. The study will result in a physical outcome in the form of IC dies. The integration with yarn and fabrics for energy delivery and information transfer will be supported by the University of Southampton where the student will spend a lesser part of their study time.

Applications are invited for a fully-funded PhD studentship to start no later than the 29th September 2017. The funding restrictions for this PhD study limits the viable candidates to UK applicants.
**Candidate Requirements**
Candidates should ideally hold a first/upper-second class degree or masters (MSc) in Electronics (with microelectronics content) or microelectronics. Consideration will also be given to applicants from a material science background given the materials target of this study, if a track record in Electronics is demonstrated in the application. Excellent interpersonal and communication skills are required, as is an ability to work independently.

**Scholarship Details**
Scholarship covers full UK PhD tuition fees and a **tax-free** stipend of a minimum £17,000 per annum.

**Informal enquiries**
Please contact Dr Paul Warr, Paul.A.Warr@bristol.ac.uk

For general enquiries, please email gsen-pgrs@bristol.ac.uk

**Application Details**
To apply for this studentship submit a PhD application using our [online application system](http://www.bristol.ac.uk/pg-howtoapply)

Please ensure that in the Funding section you tick “I would like to be considered for a funding award from the Electrical & Electronic Engineering Department” and specify the title of the scholarship in the “other” box below with the name of the supervisor Dr Paul Warr.

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