

**University of Southampton**  
**SPFS Programme Innovation Fund**  
**- The First Call for Research Proposals (July 2014) -**

EPSRC-funded Programme Grant “Silicon Photonics for Future Systems (SPFS)” includes an “innovation fund” to enable the inclusion of additional partners to bring additional value to the programme. Initial engagement will be via short research projects that support the aims of the programme. Therefore, we are inviting proposals from UK-based academic researchers for projects valued up to £100k to support the following research areas of the Programme Grant:

1) **Wafer-scale testing of photonic components**

The SPFS programme is focused on developing erasable grating couplers, suitable for comprehensive wafer-scale testing of individual photonic components and devices. Funding will be awarded to research proposals that offer low-cost, high-throughput solutions in this field.

2) **Multi-layer 3D photonic platform**

Following trends in microelectronics, there is a strong motivation to upgrade the existing Silicon-on-Insulator (SOI) photonic platform that effectively offers only a single photonic layer. In this respect, development of a three-dimensional platform in Silicon Photonics, offering integration of multiple photonic layers is an important prerequisite for creating a low-cost, high-density integration platform suitable for mass market. The SPFS programme investigates the development of a poly-Silicon multilayer photonics platform and the funding will be awarded to research proposals that complement and/or support the ongoing research within the SPFS programme.

3) **Novel Silicon Photonics modulator architectures and coding formats for high capacity transmission**

Development of modulators in Silicon Photonics and appropriate modulation formats that offer high-speed and low power consumption and are suitable for optical interconnects is a key task within the SPFS programme. The innovation fund will support research related to novel modulation formats and architecture.

4) **Advanced packaging solutions in Silicon Photonics**

With the emergence of Silicon Photonics, and the consequent application of photonics to mass markets, there is an imperative to find a low cost, passive alignment solution to the coupling/packaging problem. It is one of the biggest challenges in Silicon Photonics today, but also an area of research that is vastly under investigated. Therefore, the SPFS

Innovation Fund will support development of robust and low cost packaging solutions for Silicon Photonics.

## 5) Integrated optical sources

Funding will support research in enhancing the integration of lasers for telecommunication wavelengths with Silicon Photonics integrated circuits that are potentially suitable for future industrial-scale fabrication.

For more information about the SPFS programme, see [www.uksiliconphotonics.co.uk](http://www.uksiliconphotonics.co.uk)

### **Eligibility**

The Call for Proposals is open to any interested UK-based academic research group or individual.

### **Funding levels available**

Up to £100k is available in this call. The funding can be either awarded to a single proposal or distributed among several winning proposals. Three additional calls (2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>) will be announced in 2015, 2016 and 2017.

### **Application process and requirements**

One page-long proposals should be e-mailed to the Project Manager, Dr. Stevan Stanković: [siliconphotonics@soton.ac.uk](mailto:siliconphotonics@soton.ac.uk). The proposals should include the project title, names of the investigators, brief description, expected duration, costs with manpower requirements and a breakdown of expenditure. Grants can support staff time, facility access, consumables, and travel to the project partners, but no equipment purchase. Proposals should also contain an explanation of how the proposed work fits into the frame of the SPFS programme and what added value it brings to a specific area of the programme. At the end of the project, a final report will be submitted to SPFS Management Group highlighting the project outcomes and impact.

The best proposals will be short-listed based on their innovation, compatibility with the SPFS programme and the added value that they are offering. Authors of the selected proposals will be asked to give a 15-minute presentation to the SPFS Management Group, followed by a 10-minute questioning session. Following this, the final ranking list will be made and the winning proposals will be awarded up to £100k.

### **Schedule and deadlines**

Deadline for submission of proposals: Friday 5<sup>th</sup> September 2014 (by 17:00 GMT).

Announcement of the short-listed proposals: 12<sup>th</sup> September 2014

Presentation to SPFS Management Group members: 29<sup>th</sup> September 2014.

Announcement of the winning proposals: 30<sup>th</sup> September 2014.