Post-doc position in Printed Metal Oxide Thin Film Transistors on Temperature Sensitive Substrates

The MEMS and Printed Microsystems group led by Dr. Danick Briand from the Microsystems for Space Technologies Laboratory at the EPFL (Swiss Federal Institute of Technology) has an opening for a PhD student in the field of printed electronics.

Requirements
- Ph.D. in Electrical/Electronic Engineering, Physics, Material Engineering, or related field.
- Knowledge and experience with metal-oxide thin film transistors (TFTs)
- Strong experimental skills on devices fabrication and characterisation
- Ability to collaborate closely with colleagues in a multicultural setting.
- Fluent in English. French is a plus.

Objectives
Printed electronics has made significant progress on printing of organic transistors on a large variety of substrates. Recently, the research on metal-oxide materials has resulted in thin film transistors with superior performances, but their processing is limited to temperature resistant substrate (mainly polyimide) and fully printed devices were rarely demonstrated. For a larger deployment of printed electronics, notably in smart packaging applications, the challenge is to print transistors at temperatures compatible with temperature sensitive substrates (i.e. PET, PEN, Paper).

The position has a twofold aim: 1) Support the already started work on printing metal-oxide thin film transistors on temperature sensitive substrates, and 2) Demonstrate the technology by performing system integration. Architectures and low-temperature processes, based on photonic sintering, will be investigated for the printing of the different layers of the thin film transistor. The technology will be demonstrated through the implementation of the low temperature TFTs to address arrays of soft micro-actuators used in haptics at our laboratory.

Context
This research activity is carried out at The EPFL-LMTS / MEMS and Printed Microsystems group (Dr. D. Briand), leader in printed flexible electronics and microsystems. The laboratory is located in the Neuchatel campus of the EPFL, with state of the art facilities for additive manufacturing.

The position is in the frame of the FOXIP project, Functional OXIde Printed on Polymers and Paper, funded by the Swiss Strategic Focus Area (SFA) on Advanced Manufacturing. Partners involved in the project are the Federal Institutes EMPA and PSI in Switzerland. 
https://www.sfa-am.ch/foxip.html

Ideally, the candidate should have experience on designing, fabricating, and testing TFTs. The candidate must have strong electrical design and processing skills, be adept at thinking at a system level, and enjoy building and testing working devices. The candidate must be highly motivated, independent, yet able to work closely and harmoniously with colleagues in this lab and partner labs.
Contract details
- 1 year with potential renewal
- Start date: Late Fall 2019 to early 2020
- Excellent facilities (state of the art printing facility)
- Work location is Neuchâtel, Switzerland.
- The main language used for technical discussions in the lab is English.

To apply for the position, please email a CV, cover letter, university transcript, and list of three references to danick.briand@epfl.ch

Further information about our lab can be found at http://lmts.epfl.ch/EnviroMEMS