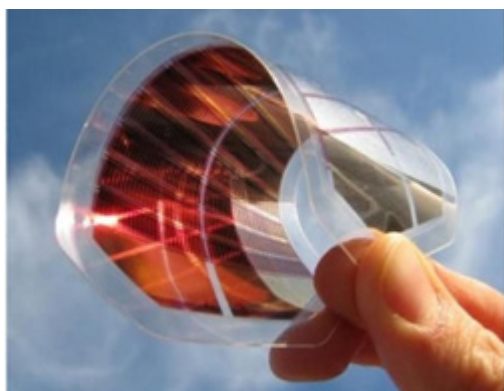


Thin Film Transistors based on printed oxide materials

Thin Film Transistors (TFTs) have gained a lot of interest from the materials and electronics research communities for their wide range of applications including flat panel displays, chemical sensors, and health monitoring. Printed electronics is a promising research area for the TFTs to reduce the fabrication cost of the devices, as well as to enhance the application areas of the TFTs to flexible and wearable electronics. Current challenge in this area is to have fully printed devices on low temperature flexible substrates (i.e. PEN, PET)

In this project different layers of the TFTs (semiconductor, dielectric materials) will be obtained by using the inks prepared with nitrate salts, and a series of light annealing methods (such as tuneable UV, Photonic annealing, microwave heating) will be employed to tune the electrical and optical characteristics of the materials for their use in the printed TFTs. Prepared layers will be inspected with different characterization methods including Hall-effect measurements, Scanning Electron Microscopy (SEM), X-ray diffraction (XRD), Fourier time infrared spectroscopy (FTIR), UV-VIS spectroscopy.

We are looking for students in the field of Chemistry/Materials Science/Physics/Electrical Engineering willing to work in a motivated, multi-disciplinary team performing cutting edge science in the field of printable electronics. The ideal candidate is dedicated to lab based as well as analytical instrumental based work with a strong focus to applied research.



Duration: 1.5-6 months (Bachelor thesis, Semester project or Master thesis)

Starting date: anytime, preferably after February 2018

Required skills: basic device physics knowledge and experience in the lab environment

Contact: Yaroslav.Romanyuk@empa.ch, sami.bolat@empa.ch

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