

2nd i-FLEXIS Fall School
i-FLEXIS X-ray sensors: from materials to real-life applications
18th September 2016, Warsaw

i-FLEXIS in a nutshell

The goal of i-FLEXIS is the development of an innovative, reliable and low-cost integrated X-ray sensor system based on heterogeneous inorganic, organic and hybrid components. The i-FLEXIS system targets two distinct applications:

- 1) Health diagnostic radiation sensor for X-ray dose determination on exposed area;
- 2) Identification tags to monitor the airport X-ray screening history of luggage.

i-FLEXIS sensors offer real time, direct X-ray detection, room temperature operation and a “designed for industrial production” approach, delivering operationally robust and environmentally friendly devices surpassing current state-of-the-art sensors. i-FLEXIS comprises three major novel concepts, allowing for totally new sensing systems integrated onto low cost plastic substrates:

- Organic single crystals as the active X-ray direct sensing material;
- Thin-film transistors with high mobility and operating at ultra-low voltages
- Flexible transparent electronics.

These new concepts are developed and implemented using micro/nanotechnology and integrated into the final state-of-the-art sensor system. The readout electronics for the whole system are implemented by a CMOS platform based on printed organic and oxide TFTs.

Fall School details

The fall school will be held during E-MRS Fall 2016 on the 18th of September 2016. It aims at providing an insight on the roadmap of FP7 i-FLEXIS project, from materials development to devices, targeting real-life X-ray detection applications.

In the i-FLEXIS School, speakers from the consortium will provide an introduction on the fundamental aspects and a broad overview on the major issues related to material synthesis, crystal growth, device fabrication and integration, as well as photonic sensor demonstration for real-life applications. Scientific research developments, materials integration challenges and technology transfer towards industrial production of X-ray sensor system will be covered.

The school welcomes attendees who are new to the topic as well as researchers who may not be fully aware of some of the new materials, techniques and devices available. This **school is open to all E-MRS participants upon registration**, by completing an online form which is available at the conference website. Details on the 2nd i-FLEXIS School can also be found at [i-FLEXIS](http://www.iflexis.eu) website.

Final Program

14:45	Welcome address and i-FLEXIS presentation Beatrice Fraboni – University of Bologna
15:00	Organic semiconductor single crystals development for X-ray detection Alessandro Fraleoni-Morgera – University of Trieste
15:30	Functional nanoparticles for X-Ray cross-section enhancement of organic materials Norman Luechinger – Nanograde
16:00	Low-temperature oxide thin-film transistors by solution processing Rita Branquinho – UNINOVA
16:30	Coffee Break
17:00	Organic thin-film transistors for flexible electronics Annalisa Bonfiglio – University of Cagliari
17:30	Circuits design and simulation Vincent Fischer– CEA
18:00	From Passive RFID to RF sensing Christophe Loussert -TAGSYS
18:30	X-ray detection in real-life applications Malgorzata Sowinska- Eurorad