

# International Workshop on Radiation Imaging Detectors iWoRID 2011



**Sunday 03 July 2011 - Thursday 07 July 2011**

**ETH Zurich, Switzerland**

## **Conference Scientific Programme**

## **Applications**

Several sessions will be devoted to application since it covers the wide range from astronomy, nuclear to medical applications.

- Material Analysis
- X-ray diffraction and fluorescence
- Protein crystallography
- Tomography, high resolution and fast imaging
- Biological and medical imaging
- Electron microscopy
- Security systems and other industrial applications
- Applications at X-ray free electron lasers
- Neutron imaging
- Astronomical and space applications
- High energy physics
- Nuclear physics
- Fusion research

## **Front-end Electronics and Readout**

A complete session is devoted to ASICS since they are the key developments for a successful radiation detector. MAPS, CMOS and SiOI will be included here.

- Monolithic and hybrid systems
- Single photon counting and charge integrating front ends
- 3D asics
- Monolithic active pixel sensors
- CCDs
- Data readout architectures
- Hardware and software
- Data compression, transfer and storage

## **Detector Systems**

This session covers the wide variety of detector systems from extensive LHC detectors to small single diode systems, from visible light to heavy charged particles.

## **Sensor Materials, Device Processing & Technologies**

Sensor material, and sensor technologies are covered by this session.

- Silicon (single crystal and amorphous)
- Gallium Arsenide, Cadmium Telluride and other semiconductors
- 3D and edgeless sensors
- Processing
- Characterization
- Reliability
- Radiation damage
- Scintillators

## **Imaging theory**

- Integrating vs counting mode
- Energy weighting
- Correction algorithms

## **High Energy Physics & Astronomy**

Detectors and applications probing the standard model.

- Tracking detectors
- Vertex detectors
- Particle detectors
- Low and high energetic Photon detection

## **Free Electron Lasers**

Detector development dealing with high photon fluxes and its applications.

- Charge integrating
- DEPFET