

# Barcelona Techno Week 2023

Institute of Cosmos Sciences of the University of Barcelona  
3rd - 7th of July, 2023

## Course on semiconductor radiation detectors

Aimed at researchers, postdocs, PhD students, and industry professionals working in related fields

<https://indico.iccub.edu/e/TW2023>

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### Program overview

- Introductory physics concepts
  - Particle detectors for High Energy Physics
  - Interaction of particles with matter
  - Signal Formation in semiconductor detectors
- Introductory electronics concepts
  - CMOS technology
  - Pulse processing electronics
  - Readout Electronics
  - Advanced Interconnections
- X-ray and charged particle detectors
  - Overview of hybrid pixel detectors
  - Hybrid pixel detector for spectroscopy X-ray imaging
- Monolithic Active Pixel detectors
  - Solid State photodetectors
  - CMOS Image & Vision Sensors for 2-D and 3-D
  - Embedded Sensor Intelligence
  - SPAD imagers and a/d-SiPMs
  - Photosensors in fast timing scintillation detectors
  - Silicon photonics for biomedical applications
  - Quantum applications
  - Advances in single photon detectors
- Industrial presentations and Poster sessions

### Lecturers

- Rafael Ballabriga (CERN)
- Massimo Caccia (U. Degli Studi Dell'Insubria)
- Michael Campbell (CERN)
- Ricardo Carmona Galán (IMSE-CNM/CSIC-US)
- Edoardo Charbon (EPFL)
- Perceval Coudrain (CEA)
- David Gascón (ICCUB)
- Alberto Gola (FBK)
- Daniel Hynds (U. Oxford)
- Frank Koppens (ICFO)
- Angelo Rivetti (INFN)
- Ángel Rodríguez Vázquez (US)
- Antonio Rubio (UPC)
- Dennis Schaart (TU Delft)
- Francesc Serra-Graells (IMB-CNM/CSIC)
- Renato Turchetta (IMASENIC)

### Organizing Committee

- Scientific Organizing Committee
  - David Gascón (ICCUB-IEEC), Chair
  - Rafael Ballabriga (CERN), Co-Chair
  - Sergio Gomez (Serra Hunter- UPC)
  - Joan Mauricio (ICCUB)
  - Eduardo Picatoste (ICCUB)
  - Andreu Sanuy (ICCUB)
  - Daniel Guberman (ICCUB)
- Local Organizing Committee
  - Esther Pallarés (ICCUB)
  - Anna Argudo (ICCUB)

Organized by:



Institut de Ciències del Cosmos  
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