Chip Design @ FTD

18.05. 2026

Development Activities

	Particle Tracking	Imaging	Post-processing / Integration
Hybrid Sensors	• ITKPix (ATLAS/CMS RD53, TSMC 65)	• AGIPD (DESY-XFEL, IBM 130) • Cordia (DESY X-FEL, TSMC 65)	• “Thin hybrids” W2W bonding
Monolithic Sensors	• Monopix<..> (ALTAS R&D, TJ 180, LF 150) • OBELIX (Belle2 upgrade, TJ 180) • Octopus (FCC-ee, TJ 65) • ALMIRA (ALICE upgrade, TJ 65)		• “All silicon module” Interposer, TSV, RDL
DEPFET Sensors	• PXD @ Belle 2 (dig. backend DHPT, TSMC 65)	• DMC (dig. backend, TSMC 65) • DCD upgrade (AFE+ADC, TSMC 65)	
“Others”	• Fast ROIC for 3D pixel sensors (IHP 130) • Fast ADC (TSMC 28)		

Future Directions

- Monolithic Detectors
  - FCC-ee (OCTOPUS)
  - ALICE ITS upgrade (ALMIRA)
  - "Insight", "Lohengrin" (@ ELSA)
- 28 nm CMOS evaluation
  - fast ADC
  - eFPGA / rad. hard MCU / AI accelerator
- Post-processing
  - "Thin hybrids": W2W bonding
  - "All silicon module": Interposer / active substrate with RDL and TSV