

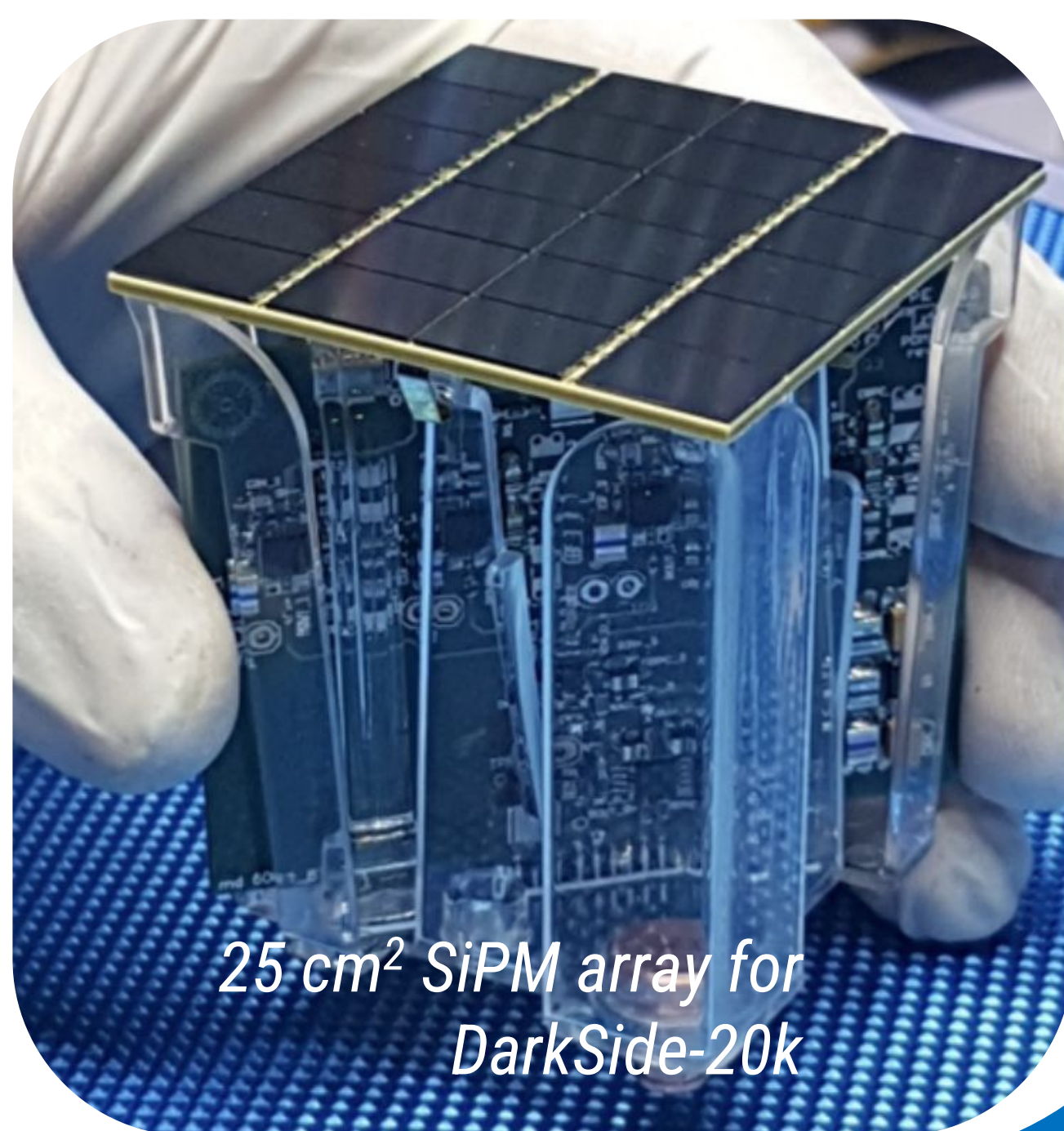
## Silicon Photomultipliers - SiPM

Single photon sensors produced in different technologies with range from VUV to NIR. They feature: high gain, high efficiency, low operational voltage, low power consumption, insensitivity to magnetic fields, compactness and robustness.

### Applications in:

Big physics experiments (DarkSide, DUNE, LHCb, ALICE) • Space • Medical imaging (ToF-PET, CT) • LiDAR • Security

In partnership with: INFN, ASI, ESA, CERN, Broadcom Inc.



25 cm<sup>2</sup> SiPM array for DarkSide-20k

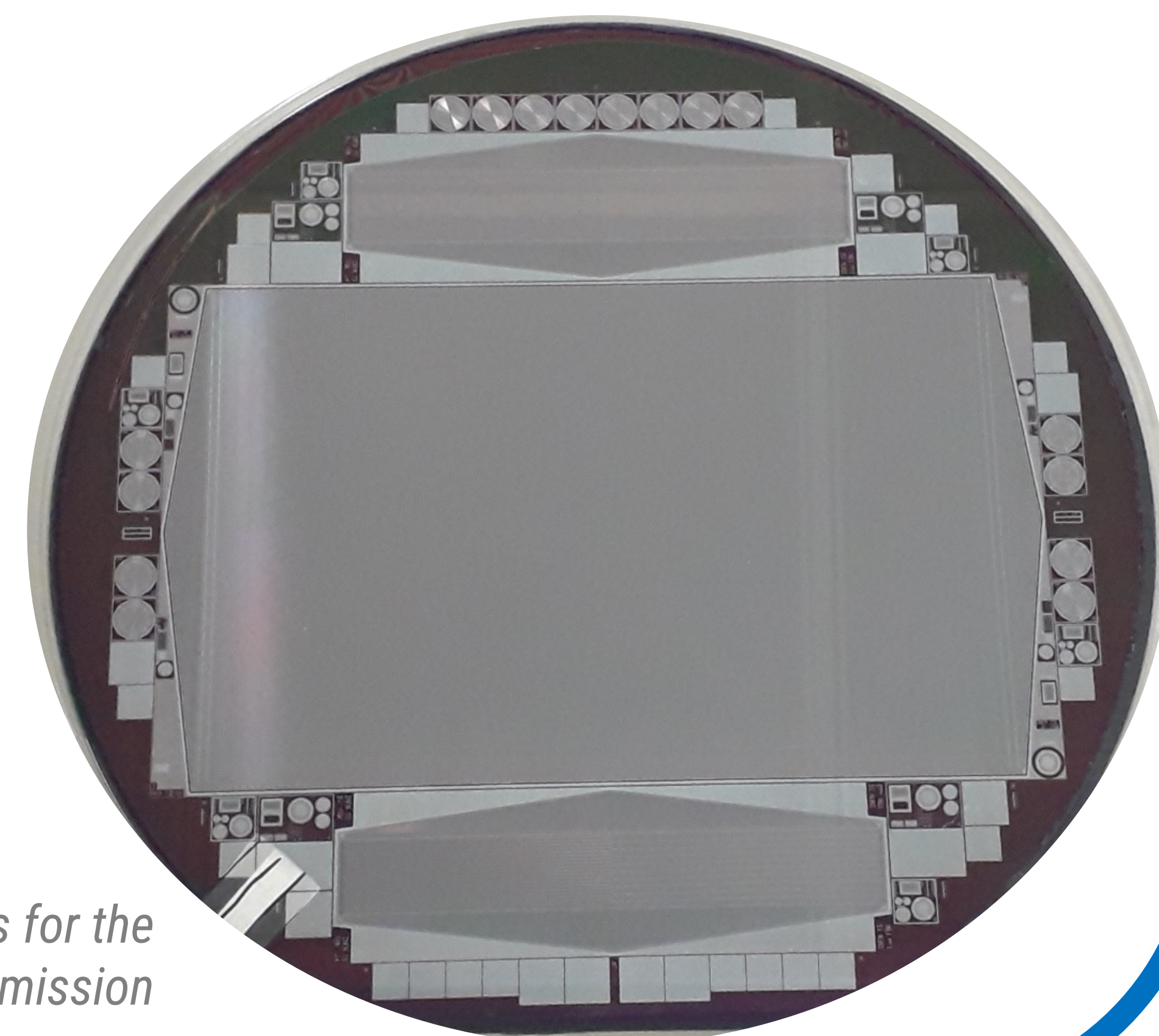
## Silicon Drift Detectors - SDD

Low leakage radiation sensors with large area (up to 10x10 cm<sup>2</sup>), thin entrance window and high energy resolution

### Applications in:

•  $\gamma$ - and x-rays spectroscopy • CsI scintillation light detection • Large area SDDs for x-ray astronomy •

In partnership with: INAF, ASI, INFN, Elettra Synchrotron



Large area SDDs for the eXTP mission

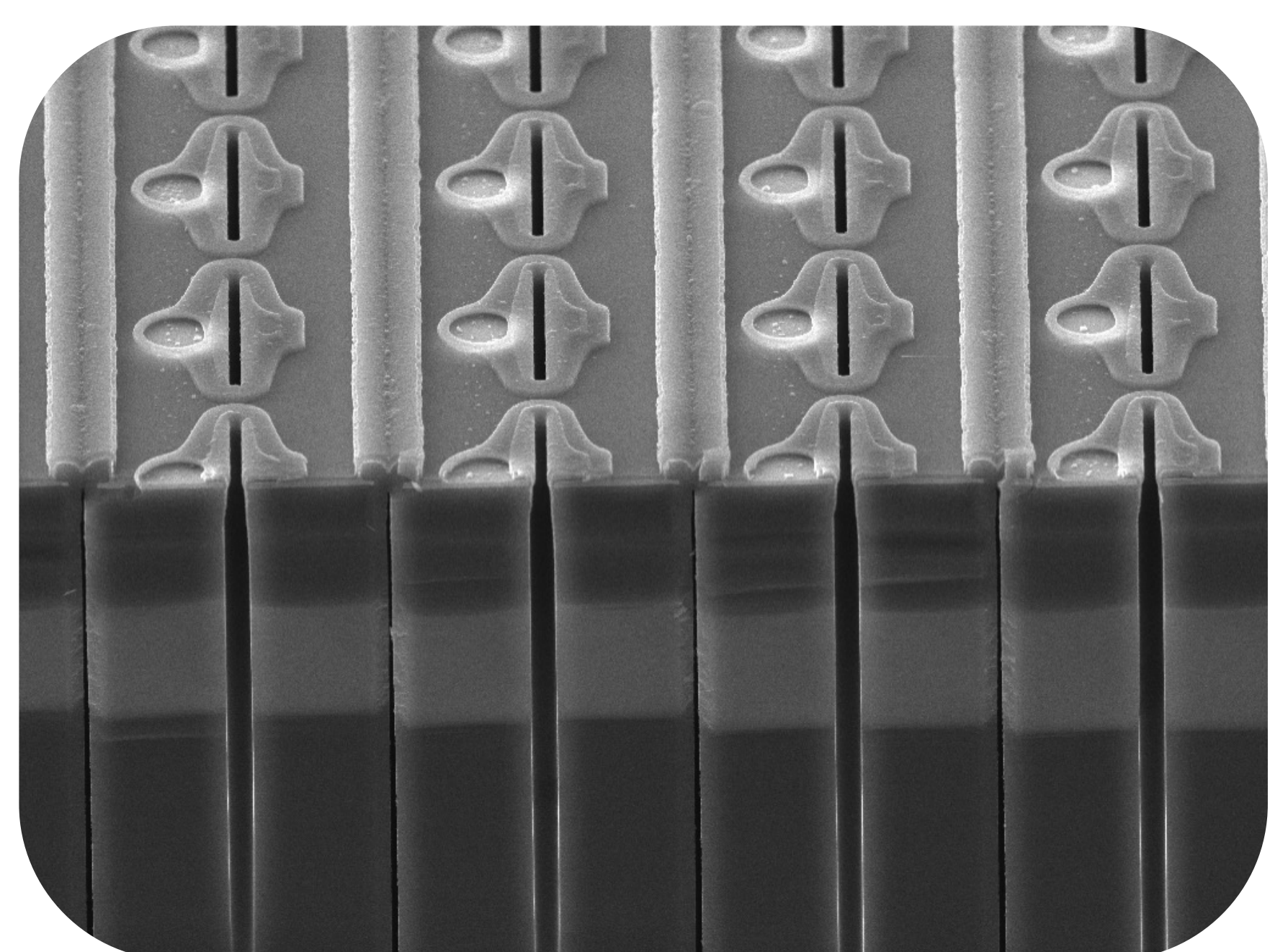
## Silicon 3D Detectors

Radiation sensors with vertical junction and ultra fast time resolution also at extreme fluences. Active edge technology.

### Applications in:

Particle tracking and timing in HEP experiments (ATLAS ITK, CMS, CT PPS), TIMESPOT, AIDA innova, semi 3D for FRIDA

In partnership with: CERN, INFN



3D detector for «TimeSpot» project

# DETECTOR TECHNOLOGIES



FONDAZIONE  
BRUNO KESSLER

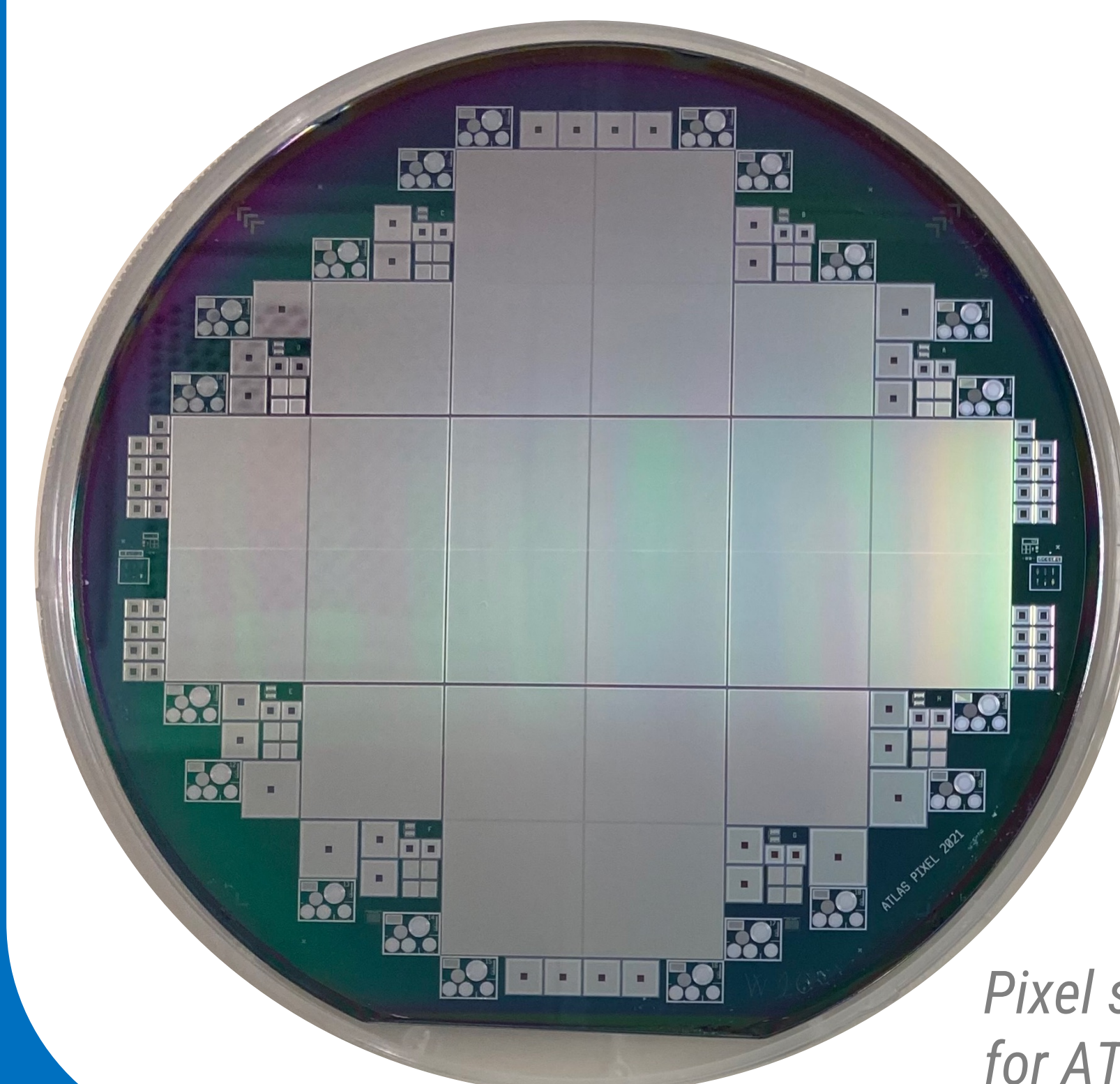
## Strip & Pixel Detectors

Pixelated sensors for particle and x-rays, with low leakage current, single or double sided process and thin entrance window for x-ray imaging

### Applications in:

• Particle tracking and timing in HEP experiments (ATLAS, CMS) • Space experiments (LIMADOU) • X-ray imaging

In partnership with: CERN, INFN, PSI



Pixel sensors for ATLAS

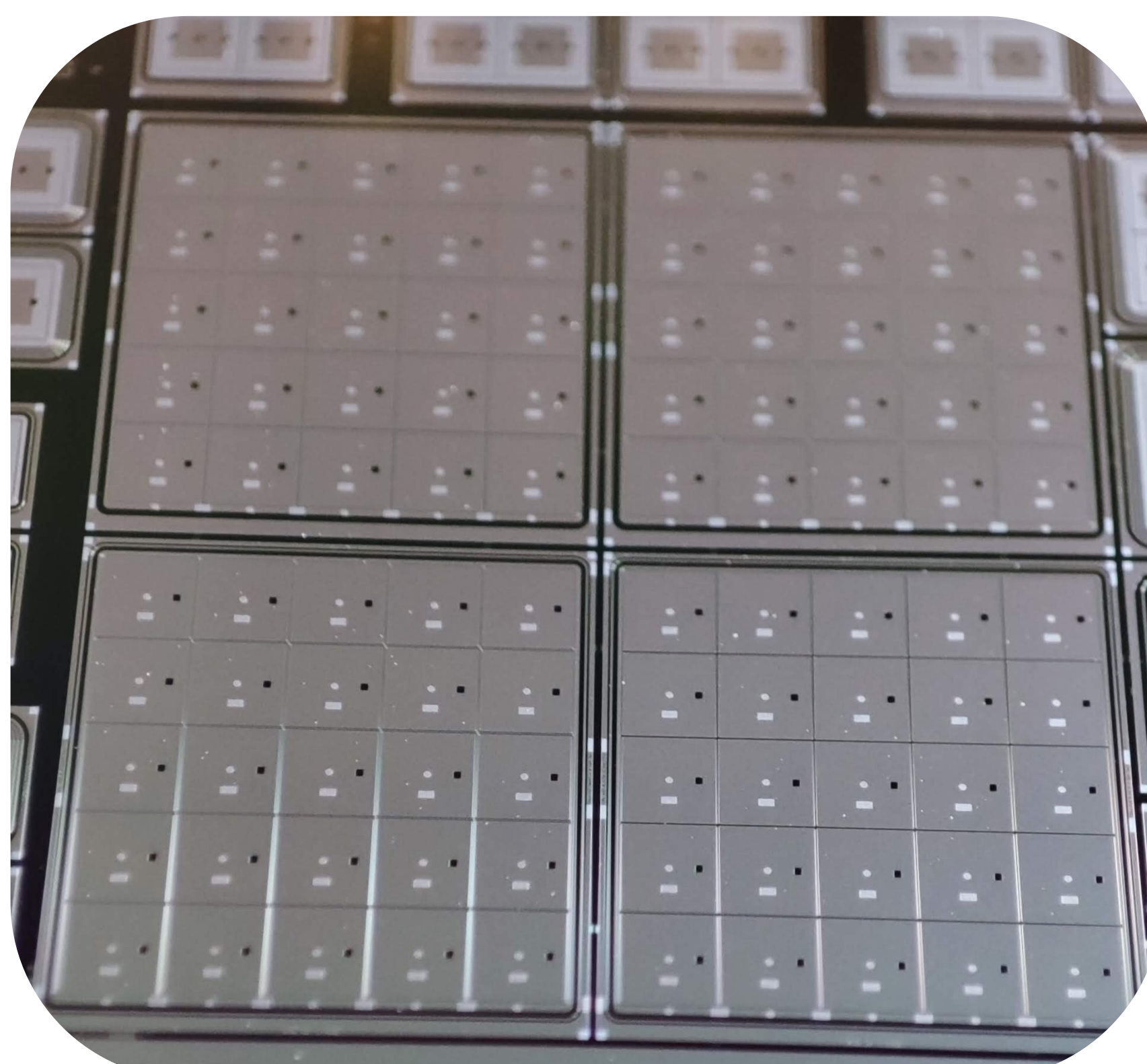
## Low Gain Avalanche Diodes - LGAD

Radiation sensors with internal gain for ultra-fast time resolution also at extreme fluences. Technologies: Trench-Isolated LGAD, AC-coupled LGAD, Inverted-LGAD.

### Applications:

• 4-D tracking for HEP (ATLAS and CMS) 4Dshare and Space ADA5D • Medical (hadron therapy) MoVe-IT • Soft x-ray imaging • Nuclear Physics Experiments (HADES) •

In partnership with: INFN, CERN, PSI, GSI, KIT



LGAD prototype for ATLAS/CMS

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