

## Progress towards seamless large area X-ray and gamma-ray detectors

Hybrid pixel detectors offer the possibility of combining highly efficient sensor material with noise hit free single photon detection and imaging. This has led to the deployment of these detectors in many fields ranging from X-ray cameras for synchrotrons, to coded aperture and Compton cameras for gamma rays, to spectroscopic X-ray imaging in medical diagnostic systems. Covering large areas seamlessly, however, remains challenging as readout is usually performed along one side of the ASIC leading to either dead areas of detection or complicated rooftop geometries. The Timepix4 and Medipix4 ASICs seek to address this challenge by 'hiding' the readout circuitry under a regular array of bump bonding pads on the top metal layer of the ASIC. IO is provided using Through Silicon Vias (TSVs) connecting the readout circuitry to a redistribution layer on the back of the ASIC. This contribution will report on the status of the developments highlighting the latest measurements on the Timepix4 ASIC along with very recent results of successful TSV processing.