

Largest single chip TDC/TAC array

[MEGAFRAME] June-Sept. 2009: MEGAFRAME reports on the design and characterisation of 32x32 TDC/TAC plus single photon avalanche diode (SPAD) pixel arrays implemented in a 130nm imaging process, to create a single chip TCSPC sensor (see the IISW, CICC and ESSDERC Publications). To the best of our knowledge, this work constitutes the largest single-chip array of fully integrated TDCs/TACs so far reported. Each TDC/TAC-SPAD ensemble measures only 50x50 μm^2 . It is thus one of the smallest ever demonstrated with deep sub-nanosecond time resolution.