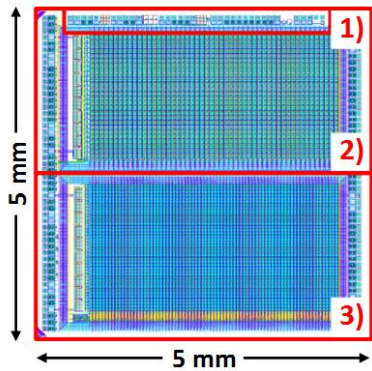
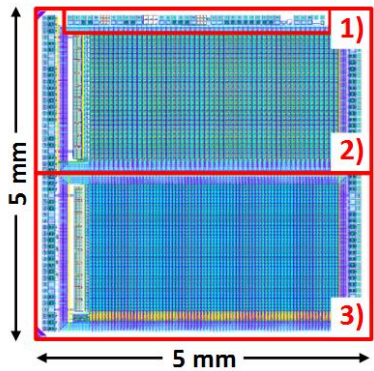




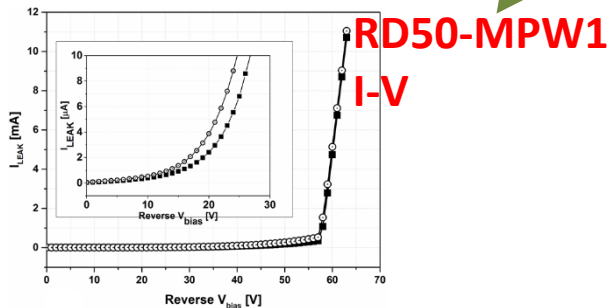
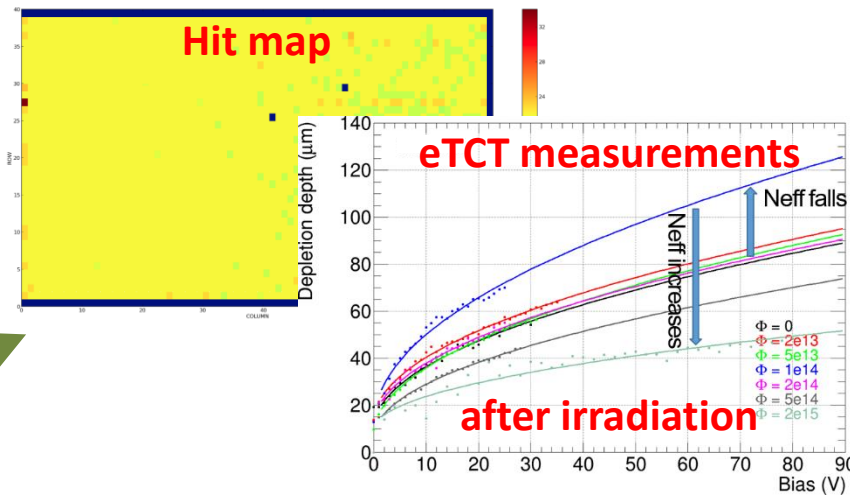
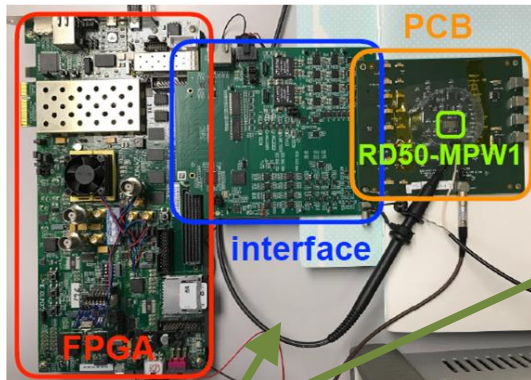
RD50-MPW1



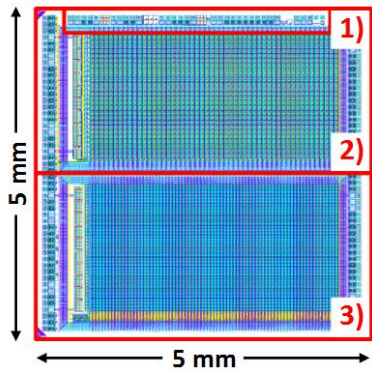
RD50-MPW1



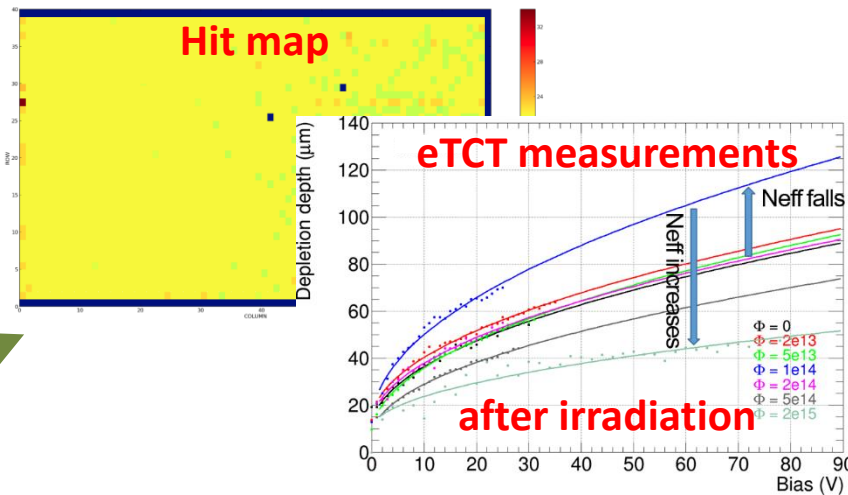
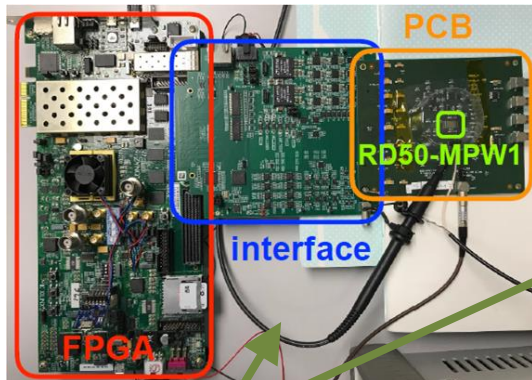
RD50 DAQ (CaR)



RD50-MPW1



RD50 DAQ (CaR)

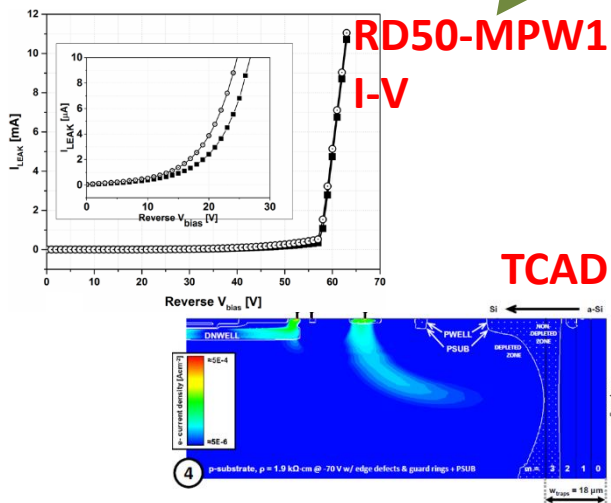


2017

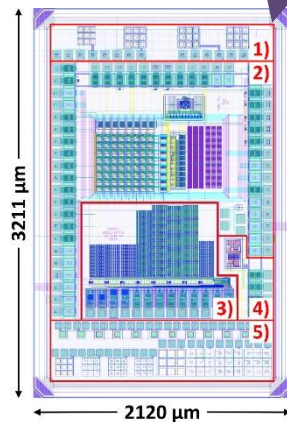
2018

2019

2020

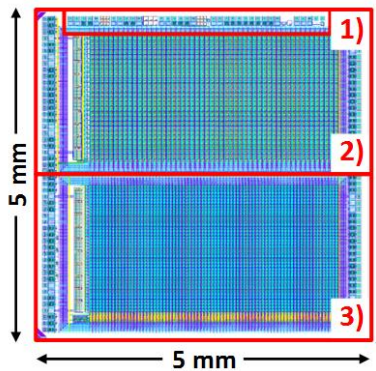


RD50-MPW2

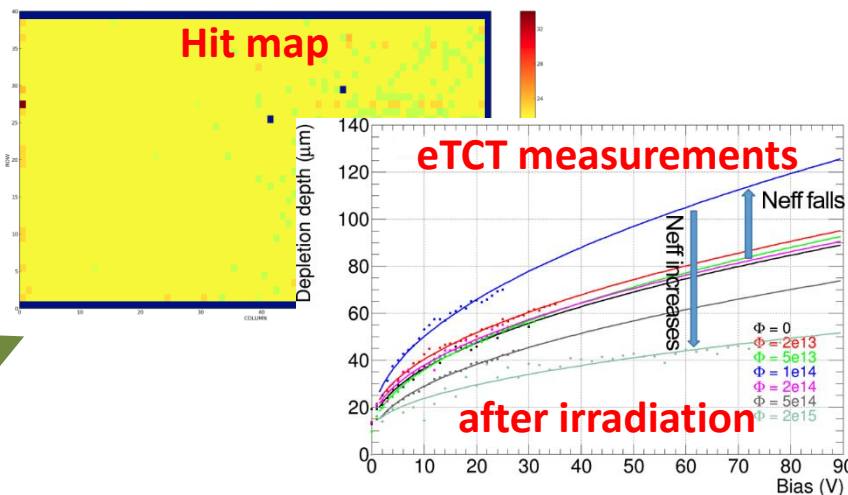
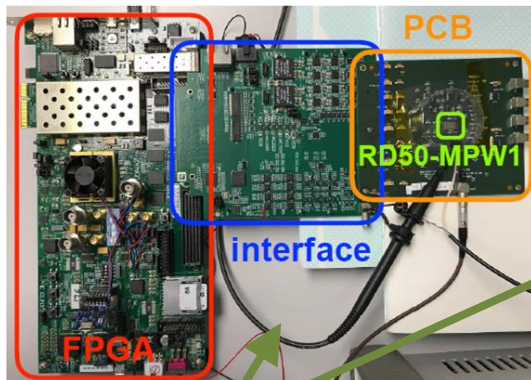




RD50-MPW1



RD50 DAQ (CaR)

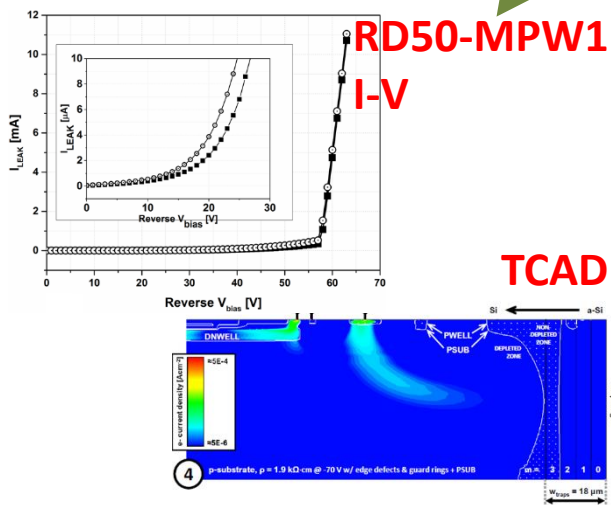


2017

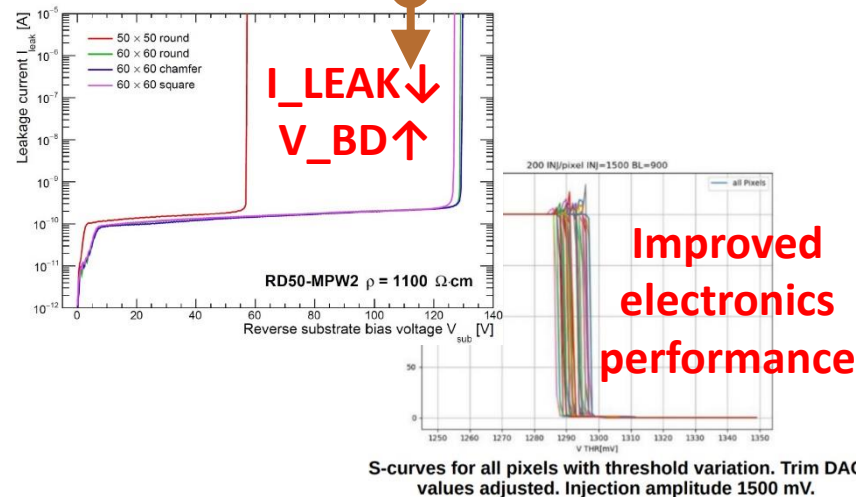
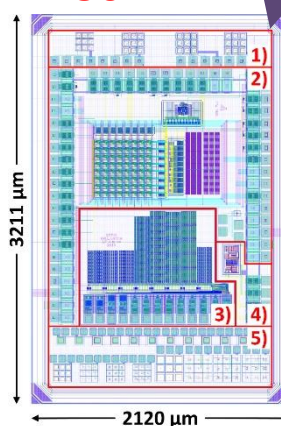
2018

2019

2020

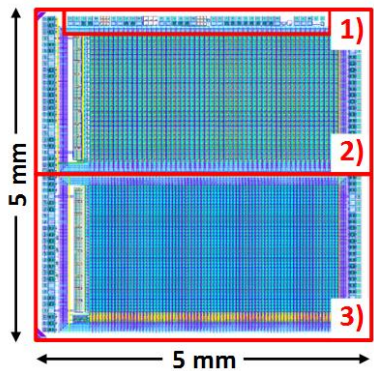


RD50-MPW2

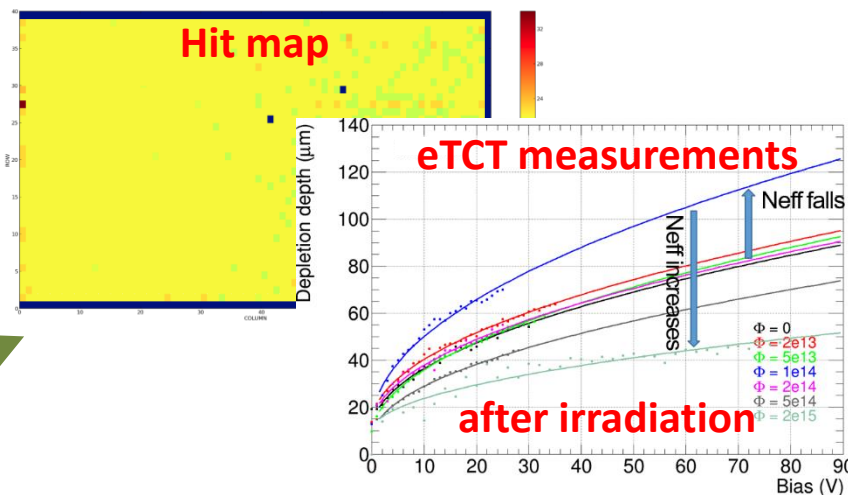
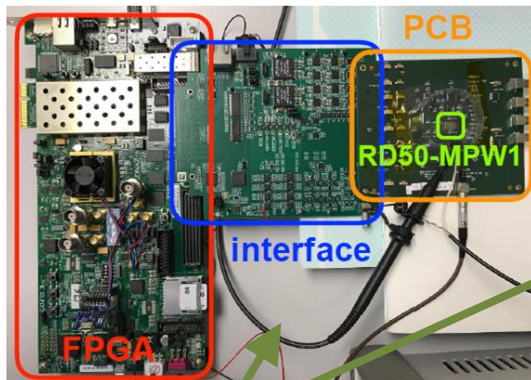




RD50-MPW1



RD50 DAQ (CaR)

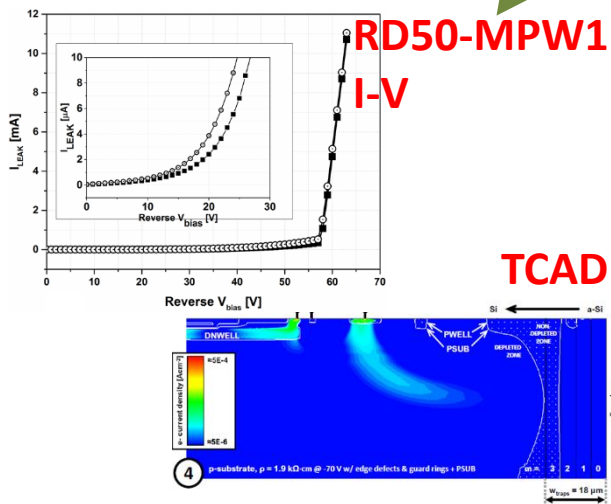


2017

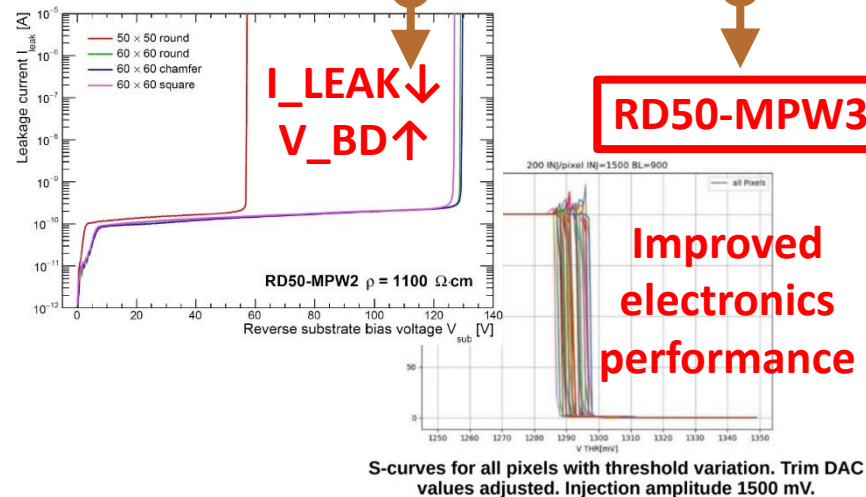
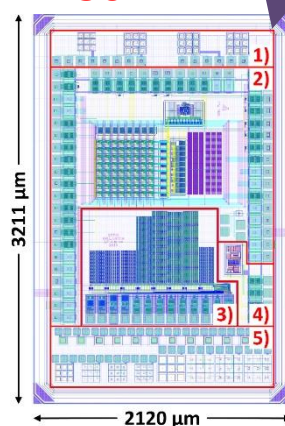
2018

2019

2020



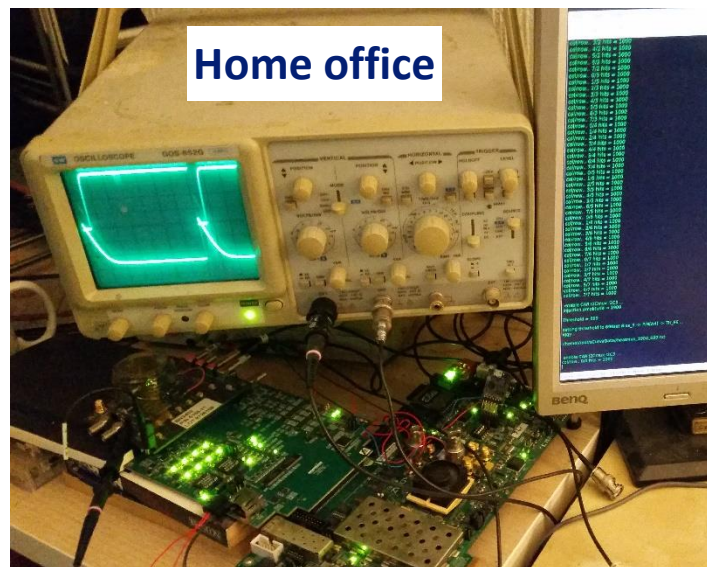
RD50-MPW2



- After a difficult start, we are now in the right direction

- **RD50-MPW2 performs very nicely**

- Despite the lockdown situation, we have lots of interesting results already
- Collaborators are very much enthusiastic and motivated
- Many of the RD50-MPW2 results shown today have been taken at collaborators' home offices
- We plan having many more results soon (full e-TCT evaluation, after irradiation...)



- **We have started design work towards our next chip submission (RD50-MPW3)**

- 2 matrices of fully monolithic pixels
 - Improved FE-I3 matrix
 - Sampling matrix (results from MPWTiming expected soon)
- Small pixels with analogue and digital readout electronics
- Methods to optimise I_LEAK and V_BD developed for RD50-MPW2
- Improved peripheral readout electronics to optimise chip data output



- **RD50 prolongation request – May 2018**
 - **M1:** Characterization of the diodes and readout electronics of unirradiated and irradiated RD50-MPW1 samples (Q4/2018) → **Achieved**
 - **M1.2 (new):** Design and submission of RD50-MPW2 (Q1/2019) → **Achieved**
 - **M1.3 (new):** Characterization of unirradiated and irradiated RD50-MPW2 samples (Q1+Q2/2020) → **Ongoing**
 - **M1.4 (new):** Design and submission of RD50-MPW3 (Q2/2020, Q1/2021) → **Ongoing**
 - **M2:** Design and submission for fabrication of RD50-ENGRUN1 (Q4/2018)
 - **M3:** Characterization of unirradiated and irradiated RD50-ENGRUN1 samples (Q3/2019, Q3/2020)
 - **M4:** Characterization of irradiated backside biased RD50-ENGRUN1 samples for operation beyond $10^{16} n_{eq}/cm$ (Q4/2020)
 - **M5:** Studies of stitching process options (Q4/2021)
 - **M6:** Characterization of unirradiated and irradiated stitched samples (Q4/2022)