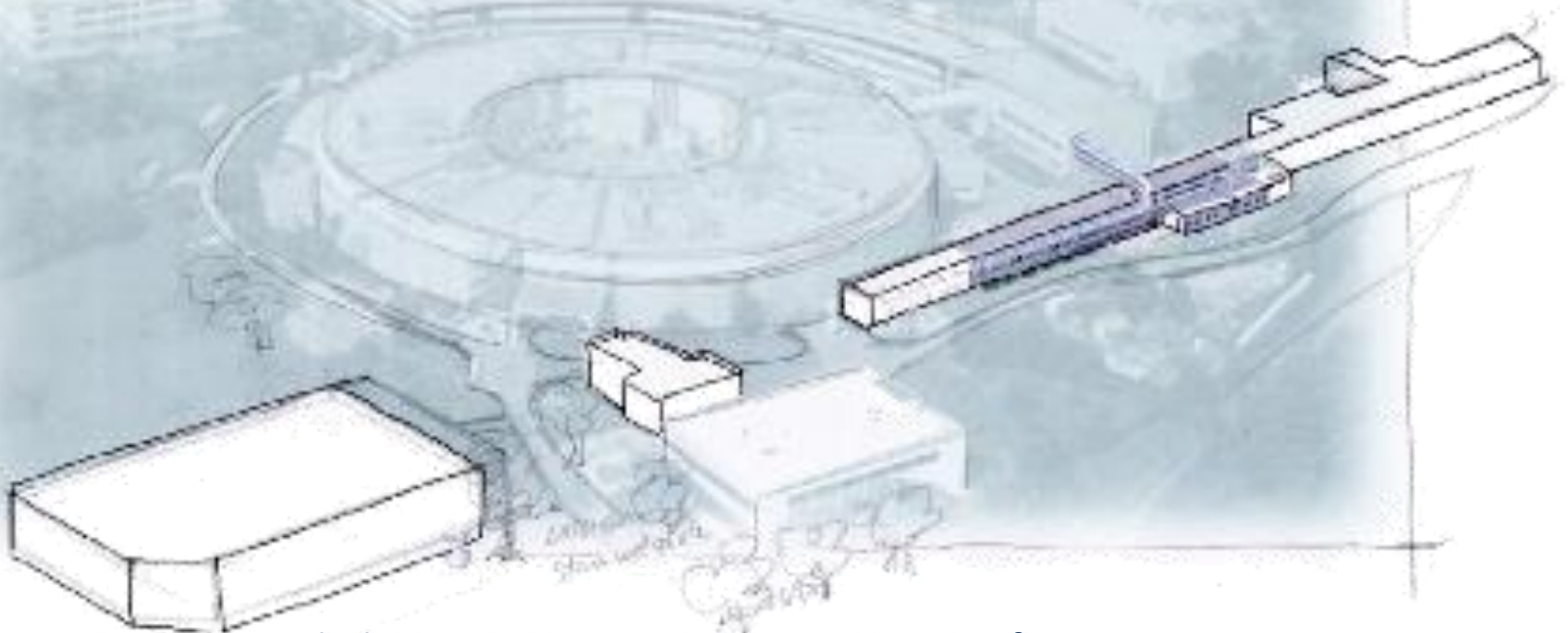




Elettra
Sincrotrone
Trieste

Facility update Elettra Sincrotrone Trieste

Elettra: 2.0 – 2.4 GeV, 200-300nA, top –up. Elettra II: 2.4 GeV, diffraction limited

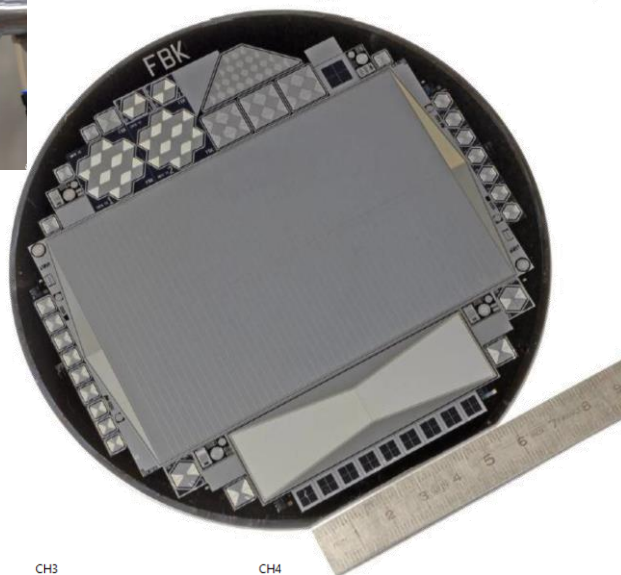
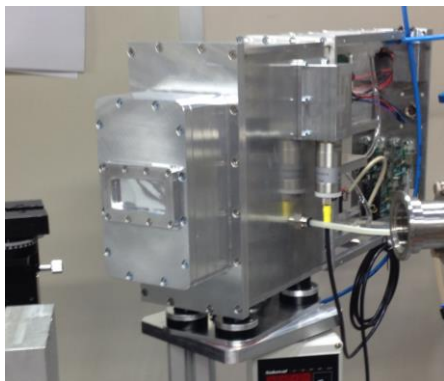


Fermi 1: seeded FEL 12-63 eV , 10 -50 Hz, 600-1200fs

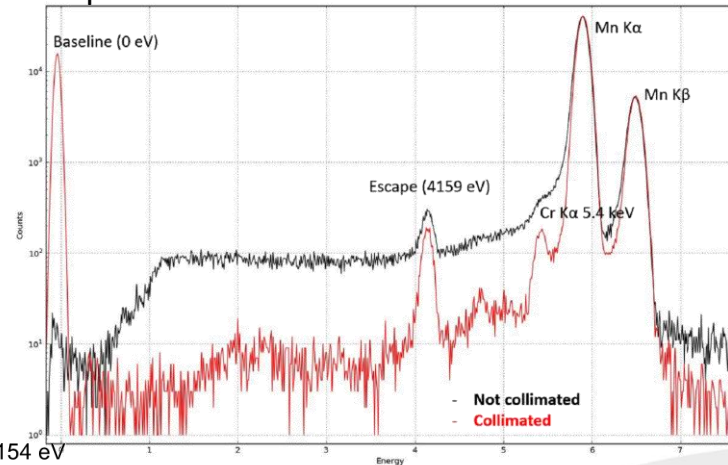
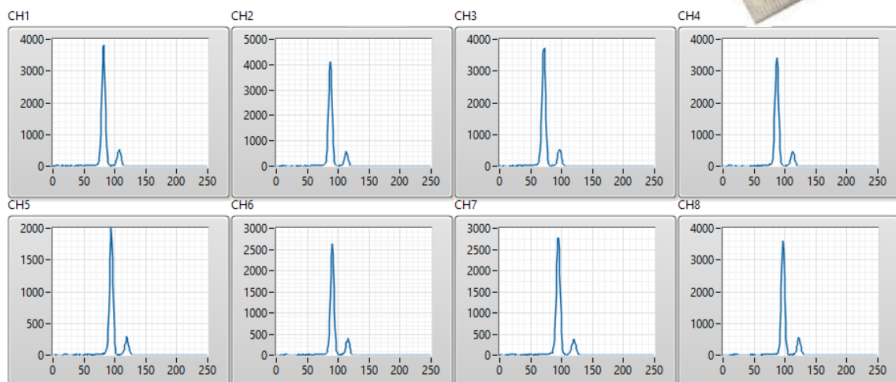
Fermi 2: seeded FEL, 62-310 eV, 10 -50 Hz, < 100 fs

RedSoxs SDDs: EXAFS beamline

- n-type 450 μm thick silicon wafer with a resistivity of 9 $\text{k}\Omega\cdot\text{cm}$
- Leakage current = 180 pA/cm^2 at 20 ° C
- Monolithic 8 cells of SDDs, which are 4 square cells, 39 mm^2 each (total 231 mm^2)
- a shallow uniformly implanted p+ entrance window common to all 8 drift cells of the matrix
- good sensitivity down to few hundreds of eV.
- backside is an arrangement of decreasingly negative biased p+ rings (drift cathodes)
- small n+ pad (readout anode) in the center and
- Preamp: SIRIO



Count rate 250 kHz



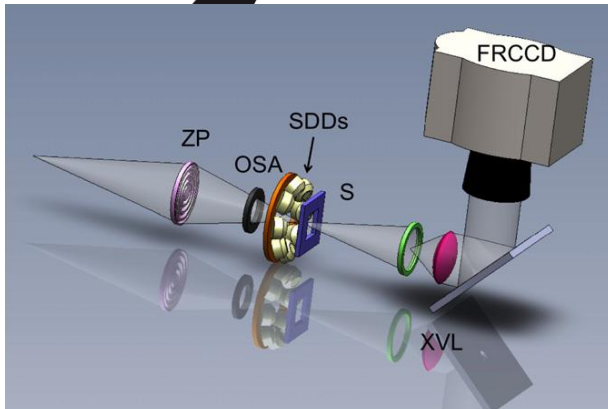
9 °C

CH1 154 eV
CH2 150 eV
CH3 155 eV
CH4 151 eV
CH5 154 eV
CH6 155 eV
CH7 170 eV
CH8 150 eV



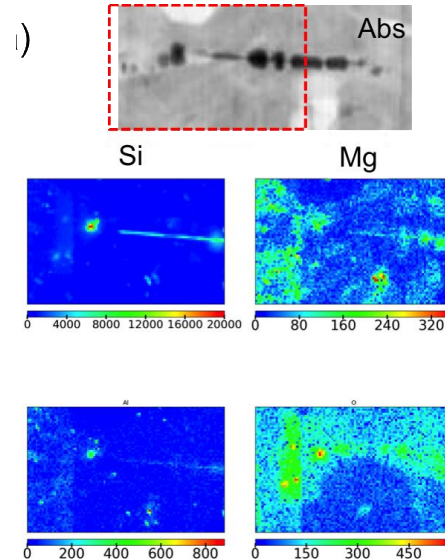
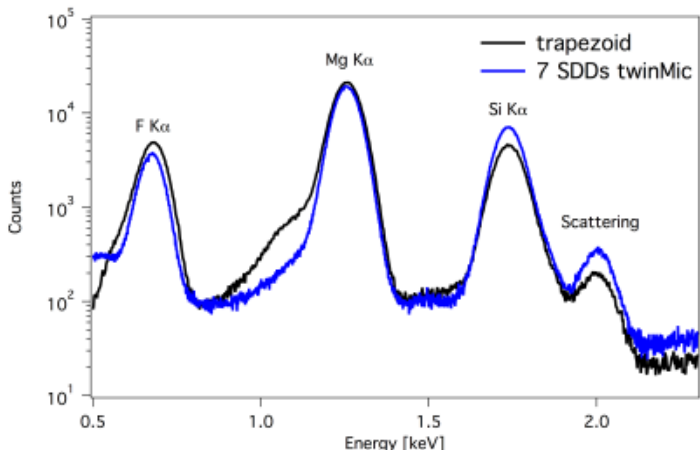
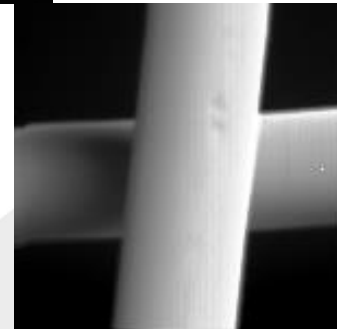
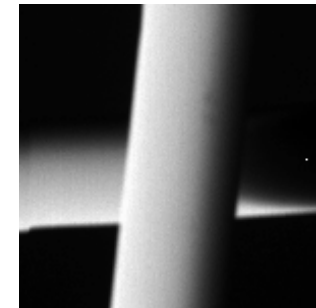
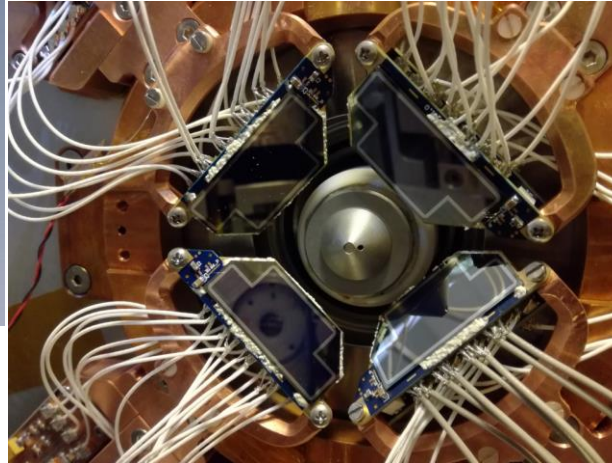
Elettra
Sincrotrone
Trieste

RedSoxs SDD: TwinMic



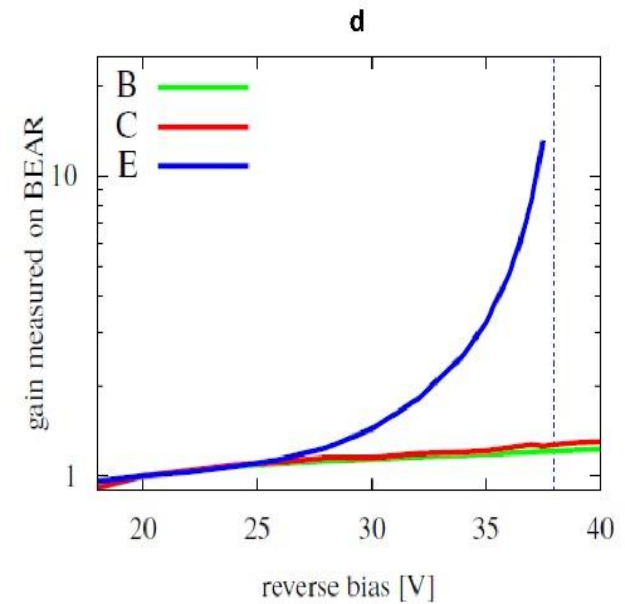
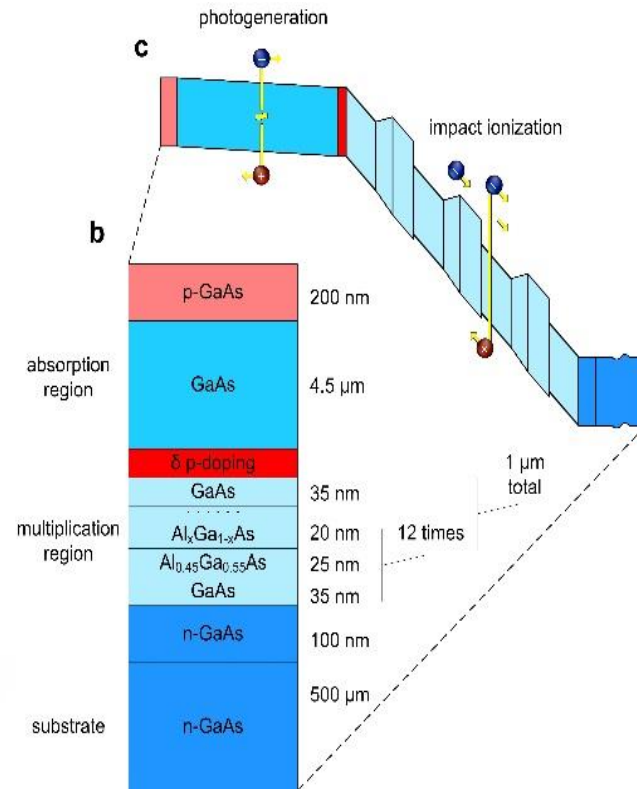
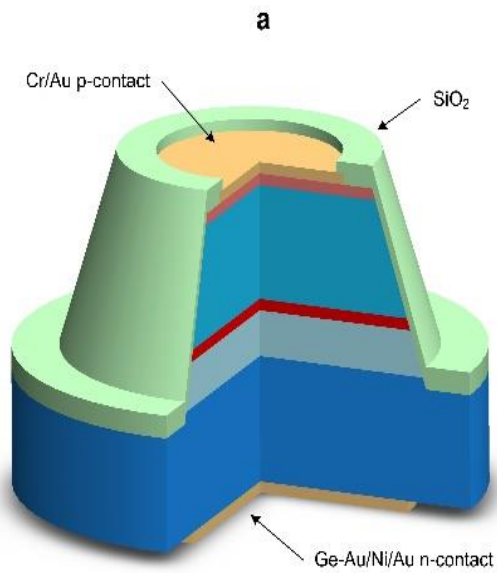
- Nano meter sized foci
- Morphology
- Element mapping SDD

Problem: low yield -> large solid angle





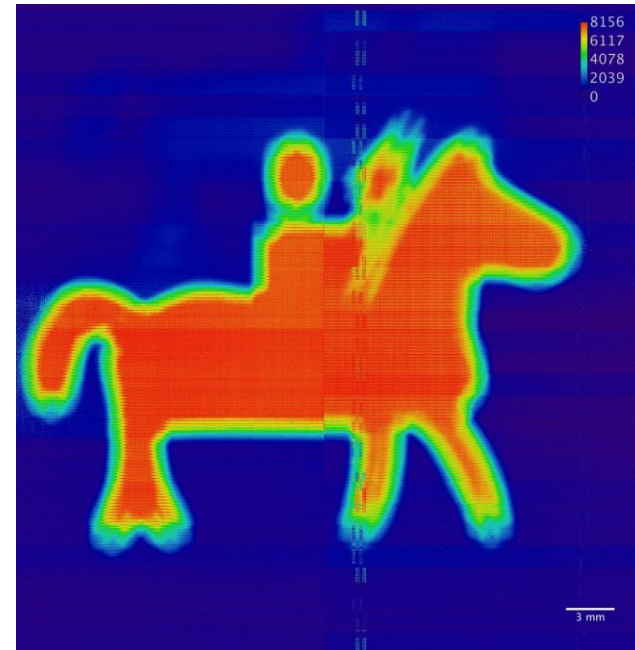
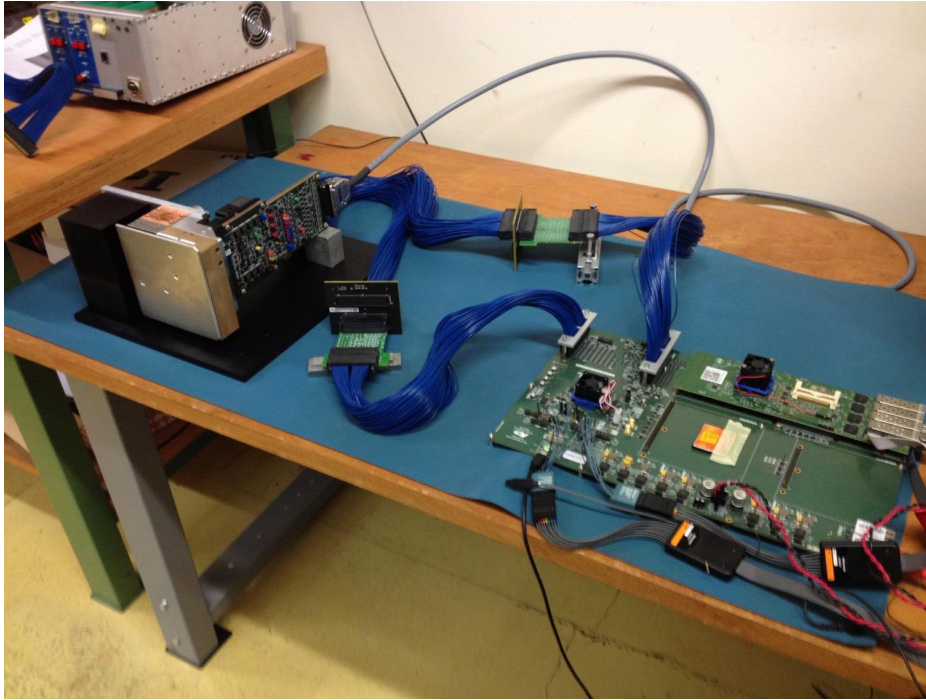
Basic research: GaAs APDs





Elettra
Sincrotrone
Trieste

PERCIVAL: FERMI Diproi



Acknowledgements

REDSOXS: J. Bufon, M. Altissimo, G. Aquilanti, P. Bellutti, G. Bertuccio, F. Billè, R. Borghes, G. Borghi, G. Cautero, S. Ciano, A. Cicuttin, D. Cirrincione, M. L. Crespo, S. Fabiani, F. Ficorella, M. Gandola, A. Gianoncelli, D. Giuressi, R. Grisonich, G. Kourousias, K. S. Mannatunga, F. Mele, L. Olivi, G. Orzan, A. Picciotto, A. Rachevski, I. Rashevskaya, M. Sammartini, S. Schillani, A. Stolfa, G. Zampa, N. Zampa, N. Zorzi and A. Vacchi

GaAs APDs: Camilla Nichetti, Tereza Steinhartova, Matias Antonelli, Giuseppe Cautero, Alessandro Pilotto, Francesco Driussi, Pierpaolo Palestri, Fulvia Arfelli and Giorgio Biasiol

PERCIVAL: Cornelia B. Wunderer, Aschkan Allahgholi, Matthias Bayer, Laura Bianco, Jonathan Correa, Annette Delfs, Peter Göttlicher, Helmut Hirsemann, Stefanie Jack, Alexander Klyuev, Sabine Lange, Alessandro Marras, Magdalena Niemann, Florian Pithan, Igor Sheviakov, Sergej Smoljanin, Maximilian Tennert, Ulrich Trunk, Jiaguo Zhang, Manfred Zimmer, Nicola Guerrini, Ben Marsh, Iain Sedgwick, Giuseppe Cautero, Dario Giuressi, Anastasiya Khromova, Giovanni Pinaroli, Luigi Stebel, Julien Marchal, Ulrik Pedersen, Nick Rees, Paul Steadman, Mark Sussmuth, Nicola Tartoni, HyoJung Hyun, KyungSook Kim, Seungyu Rahand
Heinz Graafsmaa