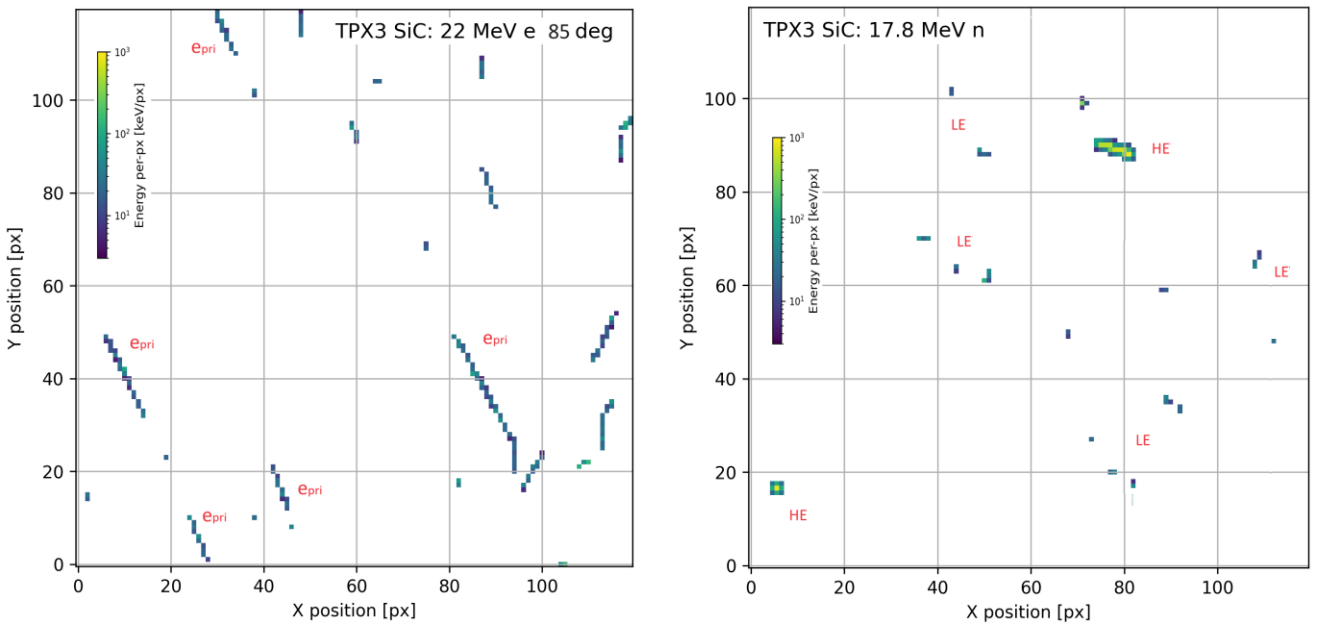


**Figure 1.** (a) Spectral-sensitive detection and wide field-of-view particle tracking of (a) 942 MeV/u  $^4\text{He}$  ions and (b) 600 MeV/u  $^{56}\text{Fe}$  ions. Measured at NSRL, Brookhaven by a MiniPIX-Timepix3 detector with 65  $\mu\text{m}$  thick SiC sensor oriented at  $75^\circ$  to the beam direction. Tracks of primary beam particles are recognizable from secondary and background particles. Only part (22%) of the detector pixel matrix is shown ( $120\text{ px} \times 120\text{ px} = 6.6\text{ mm} \times 6.6\text{ mm} = 0.44\text{ cm}^2$ ).



**Figure 2.** Similar to Fig. 1 showing the detection in the same MiniPIX-Timepix3 SiC detector of (a) 22 MeV electrons at  $85^\circ$  incident direction. Measured at the Microtron accelerator, NPI Rez. Primary beam electrons are recognized. Micro-scale level electron track patterns correspond to scattering interactions in the rather thin SiC sensor. Events resulting from interactions of beam electrons in the surrounding environment are also recognized. (b) Registration of tracks produced by 17.8 MeV neutrons at the VdG accelerator, IEAP CTU. Events are recognized according to energy loss (high energy and low energy) and are analyzed into two types: neutron induced reactions in the SiC sensor and interactions of X ray and gamma ray photons.