

The Integrated Graphic User Interface for Endstation Control and Data Processing at TPS 25A1

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Abstract

TPS 25A1 Coherent X-ray Scattering beamline has capabilities of performing conventional small angle X-ray scattering (SAXS) in grazing-incident and transmission geometries, X-ray photon correlation spectroscopy (XPCS), and coherent imaging experiments. In the beginning of this year, we have introduced the integrated graphic user interface (GUI) for the endstation control and the data processing. This GUI is based on EPICS PVs, CS-Studio, and Python scripts. The built-in functions include the detector configuration setup, sample position change, sample environment apparatus control, position and time scanning tool, and data reduction processes in the integrated GUI. For data processing, the GUI will show $I(q)$ vs q plot for SAXS reduction and correlation plots for XPCS g^2 calculations, respectively. We also provide the data processing tools of off-site version to user.

Keywords – EPICS, GUI, Data Processing, SAXS, XPCS.

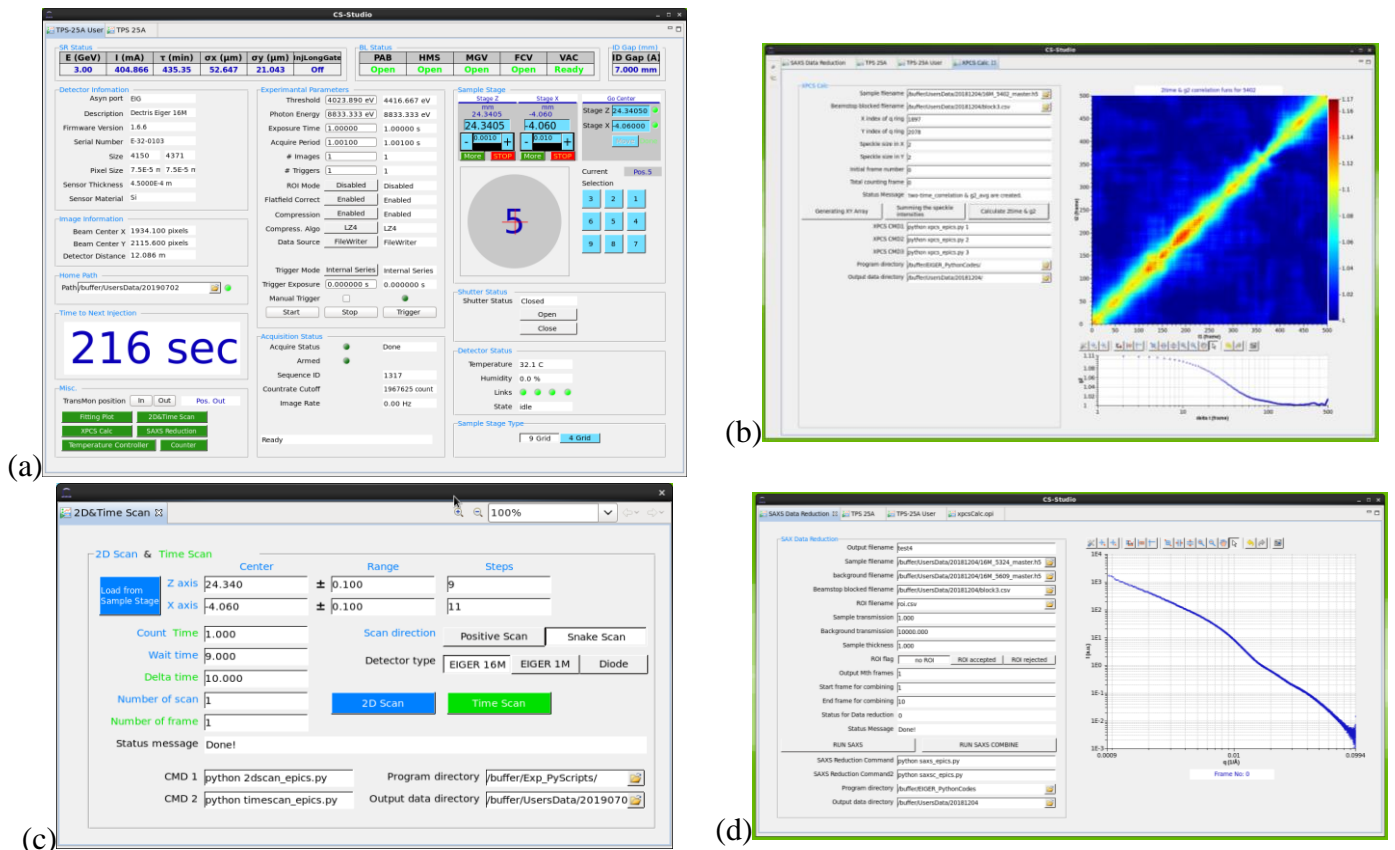


Fig. 1. (a) the integrated GUI for endstation control; (b) the GUI of XPCS correlation calculations; (c) the GUI of the position and time scans for different detectors; (d) the GUI of SAXS reduction.