

Development of an open source tool for automated crystal orientation mapping in the STEM

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We present the development of an open source tool within the Python library pyxem for automated crystal orientation mapping in the scanning transmission electron microscope (STEM). An efficient and flexible template matching algorithm is developed, where simulated electron diffraction patterns are compared to experimental patterns obtained from scanning precession nanobeam electron diffraction. The tool is scalable allowing use of multi-core and GPU accelerated computation enabling fast analysis of the multidimensional data. Special emphasis was laid to present strategies for how such complex datasets can be shared and analyzed in a FAIR manner.

Poster title

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