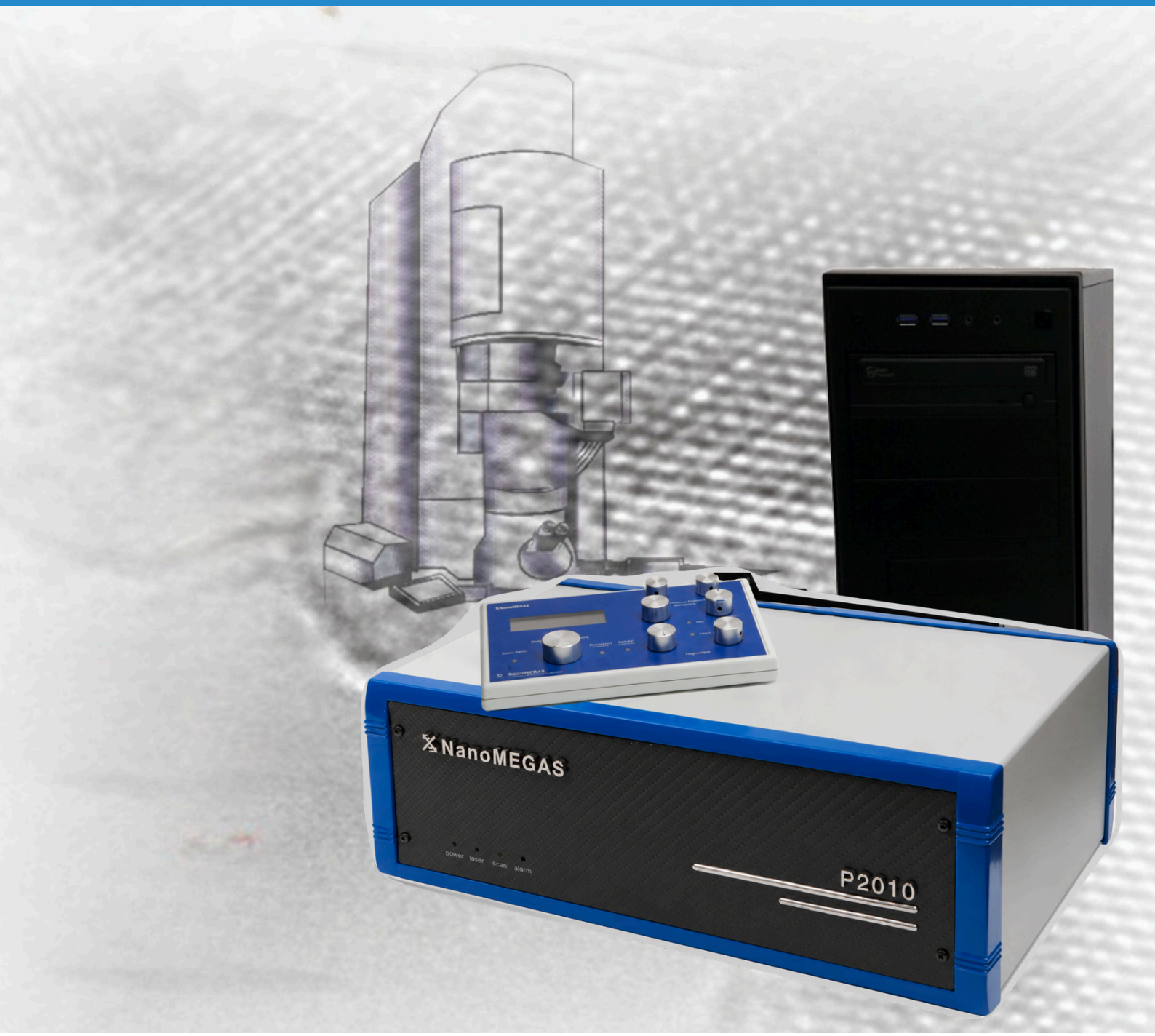
Advanced Electron Diffraction System for TEM



Features

- Compatible with most of the TEMs of 120-300KV with LaB6 or FEG filament
- Patented Precession hardware can be retrofitted to most commercial TEMs, with digitally stored alignment settings
- Data analysis software supports diffraction data from compatible CCD, CMOS and direct electron detectors
- Ab-initio structure solution of datasets collected over tilt ranges from ±15° to ±45° with 1° step
- Diffraction data collection with single tilt holder /tomography holder or cryoholder(for beam-sensitive samples)

Advanced Electron Diffraction System for TEM

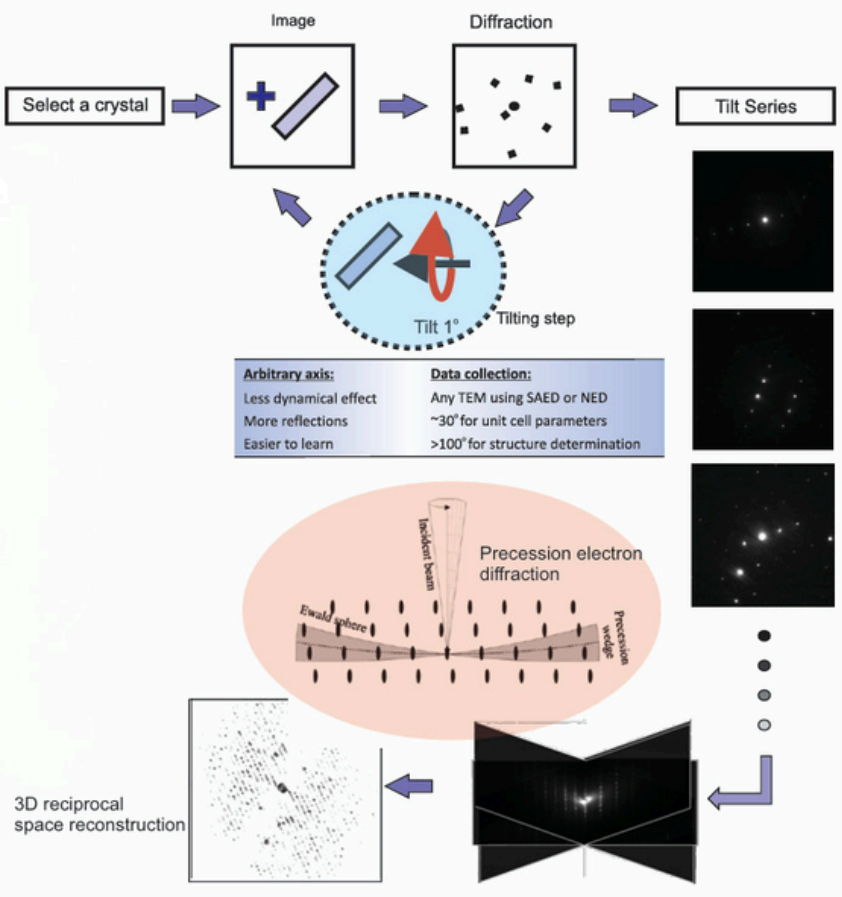
3D Diffraction Tomography (ADT3D / 3D-ED / MicroED)

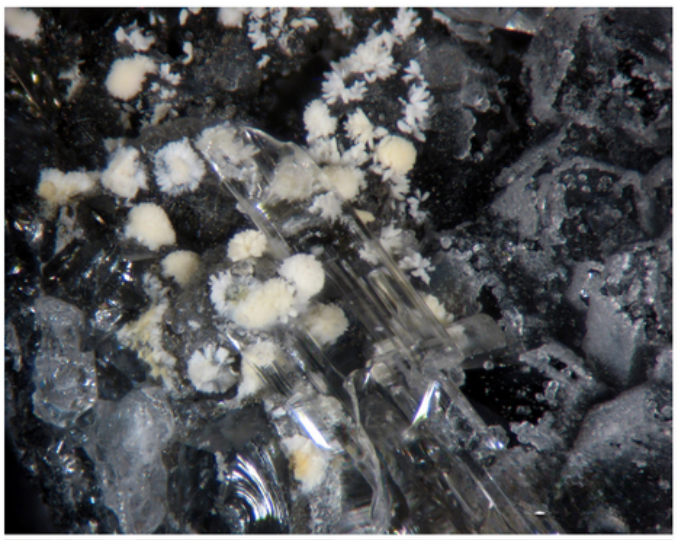
ADT3D software enables three-dimensional reciprocal-space reconstruction and crystallographic analysis of nanocrystals using 3D electron diffraction (3D-ED/MicroED) data.

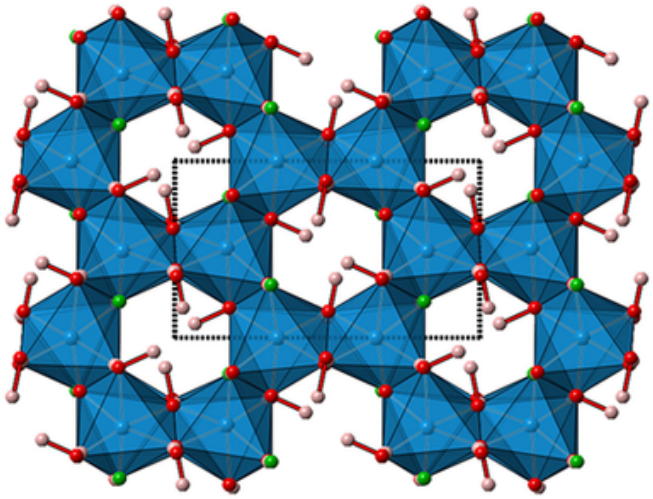
Electron diffraction patterns are collected by tilting individual nanocrystals, manually or using compatible automated acquisition systems, typically over ±40° to ±45° with approximately 1° increments, depending on the TEM configuration. DigiSTAR's unique hardware-based precession technology reduces the influence of dynamical scattering and improves diffraction intensity reliability, providing high-quality data for crystal structure analysis.

ADT3D provides interactive 3D reciprocal-space visualization, automated unit-cell determination (typically 2–5% accuracy), reflection indexing and intensity extraction. It also helps identify crystallographic features such as twinning, disorder and diffuse scattering.

Extracted reflection indices (hkl) and intensities can be exported to external crystallographic software, such as SIR and SHELX, for ab initio crystal structure solution and refinement, enabling atomic-scale structural characterization of nanocrystalline materials.







Data collected using a JEOL JEM-F200 TEM at 200 kV, with 1° beam precession using DigiSTAR hardware.

Features and specifications subject to change without notice.

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