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Convergent beam electron diffraction (CBED)

Transmission electron microscopy (TEM) is one of the most versatile instruments in material science. It offers many methods combined in one single device. It is possible to do imaging of materials, chemicals analysis (qualitatively and quantitatively) and electron diffraction, all of it down to the nanometer scale. The only limitation by this method is sample preparation and its stability in vacuum and under the electron beam.

Convergent beam electron diffraction (CBED) is a special method of electron diffraction in a TEM that offers the possibilities of true nanodiffraction. The information generated by CBED can be used for symmetry determination, measuring lattice strain, structure factor determination and even estimate the electron density within a unit cell.