

Special Issue Reprint

Electron Diffraction and Structural Imaging II

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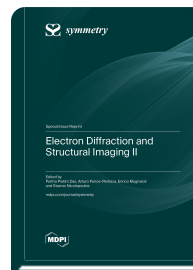
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This Reprint continues to showcase the advances of electron diffraction (ED) and structural imaging as powerful methods for structural science. Enabled by Cs correctors, direct detection cameras, beam precession, 4DSTEM, and 3DED, these approaches now resolve structures of nanocrystals, beam-sensitive compounds, and complex systems that are inaccessible to conventional X-ray methods. The second volume brings together nine contributions spanning organic charge-transfer co-crystals, graphene bilayers, chiral MOFs, amorphous silica films, perovskite thin films, additively manufactured alloys, lithium-ion cathodes, and zeolites. Featured studies include the precession-assisted 3DED of donor-acceptor systems, orientation mechanisms in graphene layers, absolute structural determination and enantiomorph distinction in chiral frameworks, and precession and energy-filtering effects on electron reduced density function analysis of amorphous materials. Methodological advances highlight scanning precession electron tomography for structural analysis of thin-film regions down to 10 nm and best practices for 3DED workflows, while applications address grain boundary engineering in AlSi10Mg alloys, cathode-electrolyte interphase formation in NMC811, and the first complete structure determination of zeolite ECR-1.

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