

Efficient and Accurate Measurement of Very Sharp Crystallographic Textures: A New Measurement Strategy

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We present an improved method to measure sharp crystallographic textures with higher accuracy and in less time compared to common measurement schemes. From a first coarse pole figure measurement refined measurement grids are calculated and with a traveling salesman algorithm an optimized order of these grid points is found to reduce the measurement time even further. The applicability of the method is demonstrated with the example of a very sharp cube texture which is measured with doubled angular resolution and in half the time necessary for a conventional measurement scheme. The corresponding algorithm is encoded and implemented as part of the software controlling the texture goniometer. This development will be of particular importance for the processing of advanced materials like high temperature superconductors, grain oriented electrical steels, electrolyte capacitors, thin film applications etc.

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