

Poster Presentations

[MS26-P01] Metrological assurance for measurements in the nanometer range

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The test sample batches have been created for poly-crystalline substances. They are intended to improve the accuracy and creditability of the determination of structural microscopic parameters.

These types is intended also for the analysis of the basic size-characteristics of nano-materials. It allows one to model the line broadening inherent in diffraction patterns from nano-sized particles (with high-angle boundaries). From data obtained in different angular ranges is also modeled the extent of micro-lattice distortions that occur during plastic deformation. Two polar cases will be established. The first reflects the diffraction pattern resulting from a low degree of plastic deformation, which usually is observed in materials with covalent bonds. The second case includes patterns resulting from severe plastic deformation, usually observed in metals and alloys.