



Nanostructure of A-Si: H and Related Alloys by Small-Angle Scattering of Neutrons and X-Rays

By National Renewable Energy Laboratory (NREL)

Bibliogov, United States, 2012. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.This report describes work being performed to provide details of the microstructure in high-quality hydrogenated amorphous silicon and related; alloys on the nanometer scale. The materials under study are being prepared by state-of-the-art deposition methods, as well as by new and; emerging deposition techniques. The purpose is to establish the role of nanostructural features in controlling opto-electronic and photovoltaic; properties. The approach centers around the use of the uncommon technique of small-angle scattering of both X-rays (SAXS) and neutrons; (SANS). SAXS has already been established as highly sensitive to microvoids and columnar-like microstructure. A major goal of this research; is to establish the sensitivity of SANS to the hydrogen nanostructure. Conventional X-ray diffraction techniques are being used to examine medium-range order and microcrystallinity, particularly near the boundary between amorphous and microcrystalline material.



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