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**Synthesis and characterisation of amorphous SeTe nanorods prepared by ball milling**

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**Abstract**

The amorphous Se<sub>97</sub>Te<sub>3</sub> nanorods were prepared by mechanical milling. The amorphous Se<sub>97</sub>Te<sub>3</sub> materials were used as a starting material. The milled materials were characterisation by XRD, TEM and optical measurement by JASCO, UV/VIS/ NIR spectrophotometer in a wavelength region 300 nm-1000 nm. The experimental result shows that an amorphous stage is also achieved during the milling process. TEM analysis showed that after 50 hours of milling time, multi-walled amorphous nanorods were formed with a diameter of about 90 nm and after 60 hours of milling time amorphous nanowires of about 80 nm diameter was formed. The optical absorption measurement indicates that the absorption mechanism is due to indirect transition. It has been observed that the absorption coefficient increases lineally with the increase in photon energy and the optical band gap increases with the increase of milling time. Copyright © 2009, Inderscience Publishers.

**Author Keywords**

Amorphous materials; Amorphous nanoparticles; Ball milling; Nanorods; Optical band gap mechanical alloying; X-ray diffraction; XRD

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