

MEASUREMENT OF YOUNG'S MODULUS OF THIN SMS FILMS BY NANOINDENTATION AND SURFACE ACOUSTIC WAVE

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Nanoindentation was used to measure the elastic modulus of thin semiconducting form of Samarium Sulphide (SmS) thin films with nominal thickness of 100 nm, 200 nm and 400 nm on silicon substrate at different loads. The indentation results are fitted with modified King's model [1] to exclude the effect of substrate, of which the Young's moduli of films are consistent with measurement from Laser Surface Acoustic Wave system (LaWave) and calculated results from literature [2].

[1] [1] R. Saha, W. D. Nix, *Acta Mater.* 50 (2002) 23.

[2] E. G. Soboleva et al, *Appl. Mech. Mater.* 770 (2015) 137; V. V. Kaminskiy et al, *Sol. Sys. Res.*, 48 (2014) 561.