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## Influence of substrate temperature on tin sulphide thin films using chemical spray pyrolysis technique(Article)

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### Abstract

Thin films of tin sulphide (SnS) were prepared on glass substrates, using chemical spray pyrolysis technique, using precursor solutions of doubly hydrated stannous chloride and thiourea at, different substrate temperatures varied in the range 548-648 K in steps of 25 K. X ray diffraction analysis revealed the crystalline nature of SnS compound having orthorhombic structure along (111) plane. The size of the tin sulphide crystallites with nano dimension was determined using the Full Width Half Maximum values of the Bragg peak at the optimized substrate temperature. The surface morphology have been observed on the surface of these films, using scanning electron microscope and atomic force microscopy. Single-phase, p-type, SnS film with direct allowed band gap of 1.3 eV was determined at the substrate temperature 573 K. © 2020 NSP Natural Sciences Publishing Cor.

### Author keywords

[Band gap](#) [Bragg peak](#) [Crystallite](#) [Diffraction](#) [Thin film](#)

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