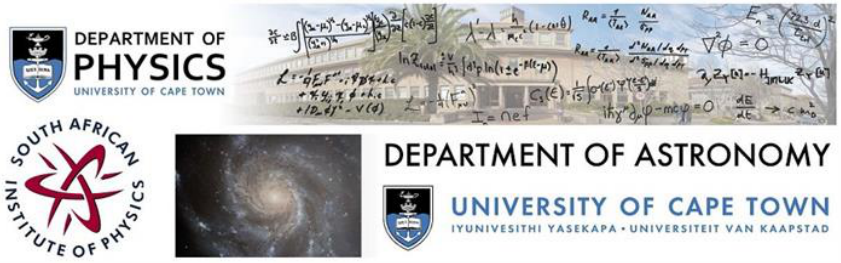

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Optimisation of spin-coating parameters for fabrication of thin film polyaniline-based nuclear radiation sensors

Tuesday, 5 July 2016 16:10 (1h 50m)

Abstract content
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The use of polymeric films in electronic device applications is becoming more commonplace due to the relatively low production and material cost of polymers when compared to conventional semiconductors. Material properties of thin polymeric films depend a lot on the structure of the films, which in turn is determined by the fabrication procedure. Current research efforts into polymer based photo-voltaic and radiation sensors are geared towards tailoring material properties of the polymers to improve their quantum efficiency to at least match that of silicon based detectors. This contribution presents results of a systematic study carried out to establish the relationship between material properties and spin parameters of conjugate polyaniline films spin-coated onto polyethylene substrates. In an effort to quantify observed relationships, empirical formulas are proposed to describe film thickness, roughness and crystallinity as functions of spin acceleration, speed and duration.

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