

Abstract Submitted
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Spin-Coating and Characterization of Chalcogenide Glass Thin Films¹ CAMERON JOHNSON, LEO SATURDAY, ROMAN GOLOVCHAK, ANDRIY KOVALSKIY, Austin Peay State University department of physics and astronomy — Spin-coating is a method to produce thin films of materials that is quite simple and provides fairly high quality. In this work the process of spin-coating for different chalcogenide glasses such as As₂S₃, As₂Se₃, and GeS is investigated and discussed. The mechanism of spin-coating for As₂S₃ is relatively well understood. Our goal is to investigate the effects the different variables of spin-coating have on the final film quality and performance. At the same time, very little investigation has been done on the spin-coating or even the dissolution of As₂Se₃ and almost none on GeS₂ and GeSe₂ glasses. It was found that spin-coating As₂Se₃ is much more challenging than As₂S₃ due to a variety of factors and the usual methods applied for arsenic sulphides are not as effective for As₂Se₃. It is also seen that the quality of the films of GeS(Se)₂ produced using our methods are very low, necessitating the use of a different approach. The thermal properties of As₂S₃ thin films produced by thermal evaporation and spin-coating were also investigated using a Differential Scanning Calorimetry method to find if annealing has any effect on the glass transition temperature and crystallization.

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