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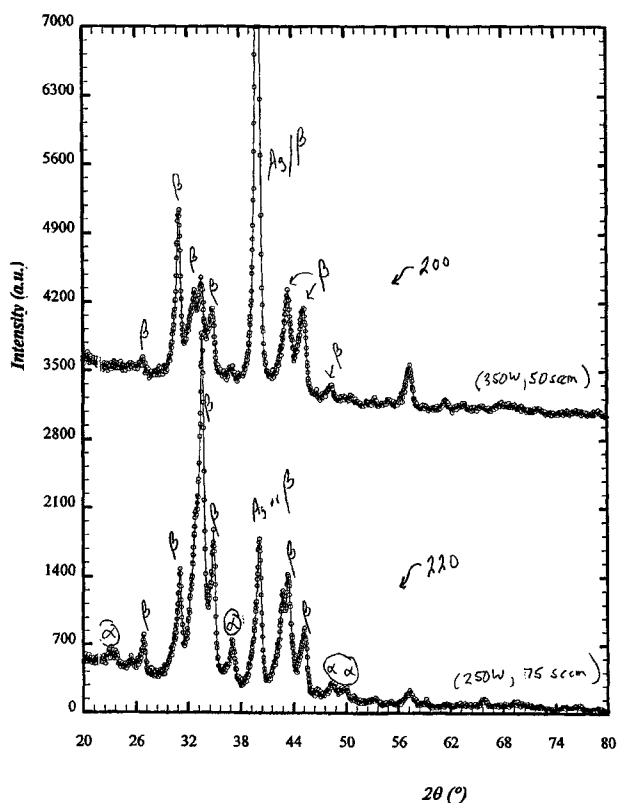
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(54) Title: SILVER SELENIDE FILM STOICHIOMETRY AND MORPHOLOGY CONTROL IN SPUTTER DEPOSITION

Ag₂Se on Ge₄Se₆



(57) Abstract: A method of sputter depositing silver-selenide and controlling the stoichiometry, nodular defect formations, and crystalline structure of a sputter deposited silver-selenide film. The method includes depositing silver-selenide using a sputter deposition process at a pressure of about 0.3 mTorr to about 10 mTorr. In accordance with one aspect of the invention, an RF sputter deposition process may be used preferably at pressures of about 2 mTorr to about 3 mTorr. In accordance with another aspect of the invention, a pulse DC sputter deposition process may be used preferably at pressures of about 4 mTorr to about 5 mTorr. In accordance with another aspect of the invention, silver-selenide films containing both alpha and beta silver-selenide, may be sputter deposited under pressures of about 10 mTorr and sputter powers of less than about 250W.



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