Density of thin vapour-deposited films of zinc selenide

E E Khawaja†, S M A Durrani†, A B Hallak†, M A Salim‡ and M Sakhawat Hussain§

† Energy Resources Division, Research Institute, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia
‡ Physics Department, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia
§ Chemistry Department, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia

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Abstract. The density of thin vapour-deposited films of zinc selenide was determined by spectrophotometry combined with Rutherford backscattering spectrometry. Bulk stoichiometry of the films was measured by Rutherford backscattering spectroscopy. It was found that the films were relatively rich in Se. Depth profile study of the films, by x-ray photoelectron spectroscopy, revealed that surfaces were rich in Se while, away from the surface and inside the film, the Se content decreased with depth until the stoichiometric ratio of the compound ZnSe was reached. The density determined was $0.98 \pm 3\%$ of the bulk value for ZnSe.