A new route in the electrosynthesis of CdSe semiconducting thin films

R Chandramohan,[1] D Kalyanaraman,[2] J.P. Chu[3] and T Mahalingam[3]

[1] Sree Sevugan Annamalai College
Physics Department,
SSA Bollege
Devakottai, 630 303
India

[2] Sri Sudarshan College of Engineering
Chemistry Department, Sri Sudarshan College of Eng.
Pudukottai, 622005
India

[3] National Taiwan Ocean Universiy
Institute of Materials Engineering, National Taiwan
Ocean Universiy,
Keelung 20224
Taiwan

II-VI compounds and their alloys find interesting applications in several optoelectronic devices. Some of the applications are electrophotography, photoconducting cells, photovoltaic cells, vidicon camera tubes, phosphors, nuclear detectors, thin film transistors, lasers, light emitting diodes, photoelectrochemical and photovoltaic solar cells etc.. Of the II-VI family of semiconductors CdSe (band gap 1.67 eV) is one of the interesting compounds which is widely used in the fabrication of thin film transistor, photoelectrochemical and photovoltaic solar cells etc.. In this study the synthesis of this valuable compound semiconductor in thin film form using a low cost electrosynthesis technique is described. This new route paves way for a reduction of cost of synthesis of CdSe thin films over the conventional one. This is acheived by creating a competition for the metalic sites during the formation of the compound. The synthesised films are characterised for their physical properties and the results are reported.