

OPTICAL, STRUCTURAL AND ELECTRICAL PROPERTIES OF Zr DOPED CoSe FOR PHOTOVOLTAIC APPLICATION

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INTRODUCTION

- ▶ Due to the wide range of applications of the nanocrystalline chalcogenide thin films, It has gained attention among researchers .
- ▶ For the present work, ZrCoSe thin films has been synthesized by spray pyrolysis techniques for PV application.

OBJECTIVES

- ▶ To synthesize zirconium dope cobalt selenide (Zn/CoSe) using spray pyrolysis techniques.
- ▶ To characterisce Zn/CoSe thin films to determine thre structural , optical, elemental and electrical properties of the films.

RESULTS AND DISCUSSION

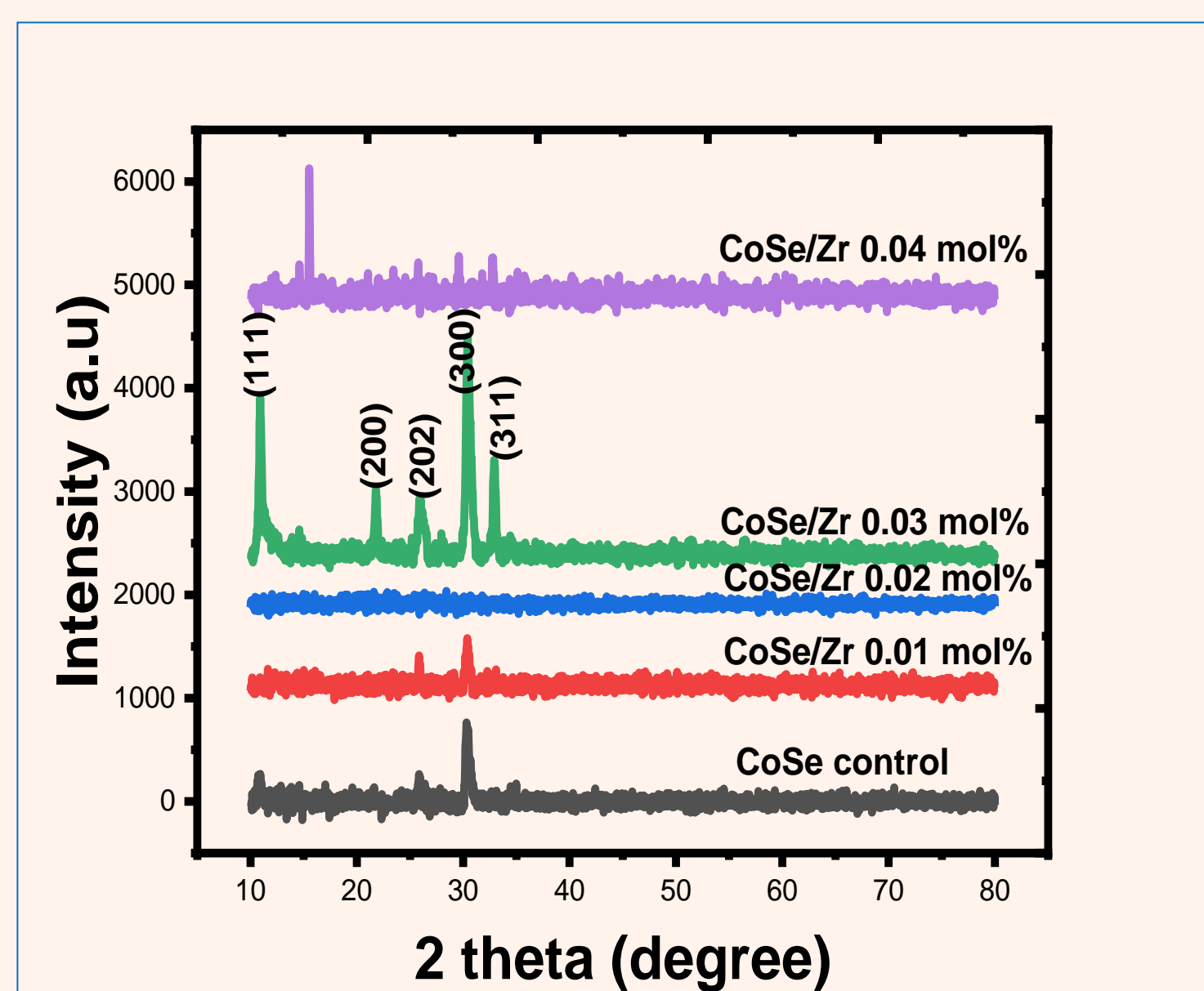
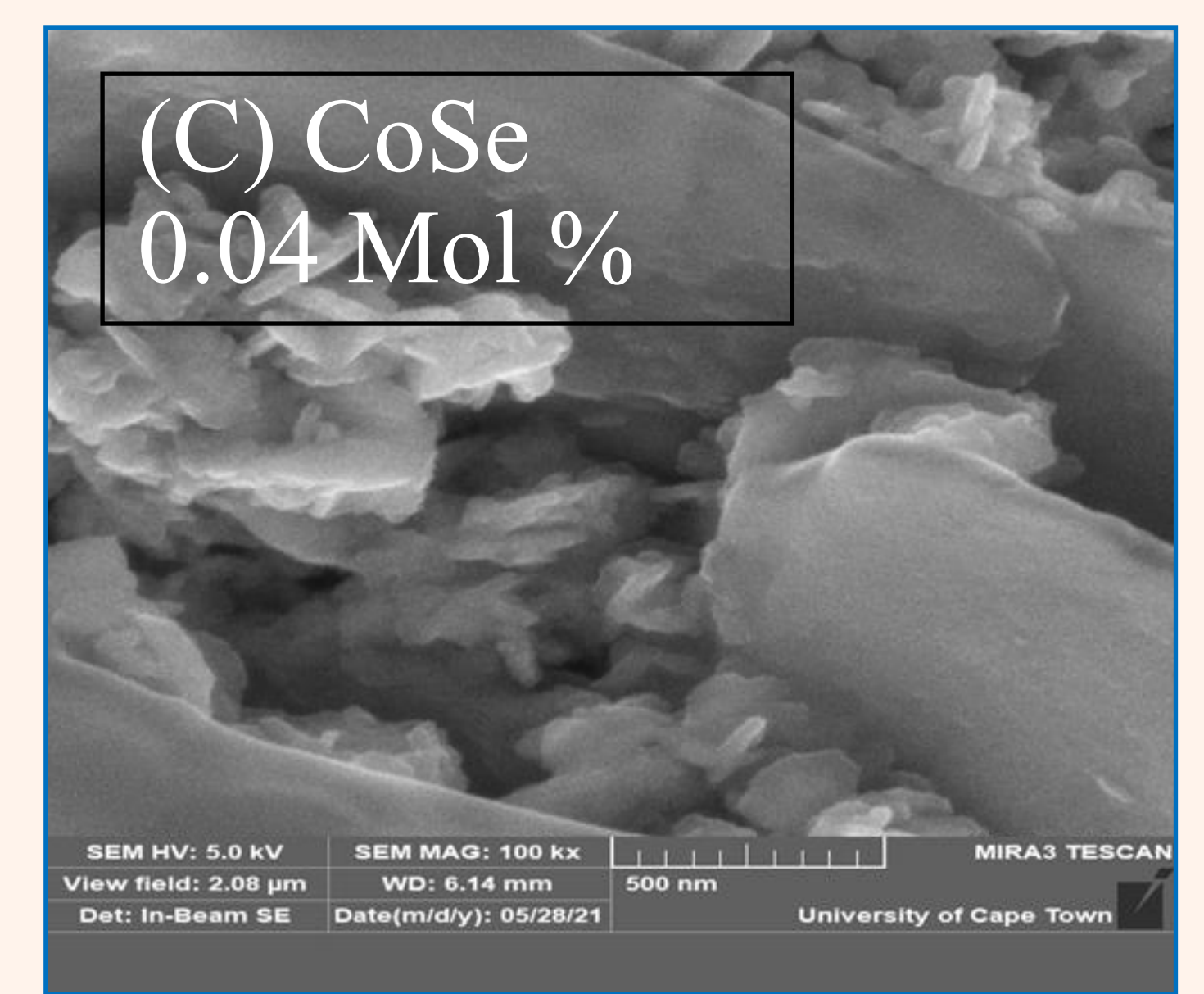
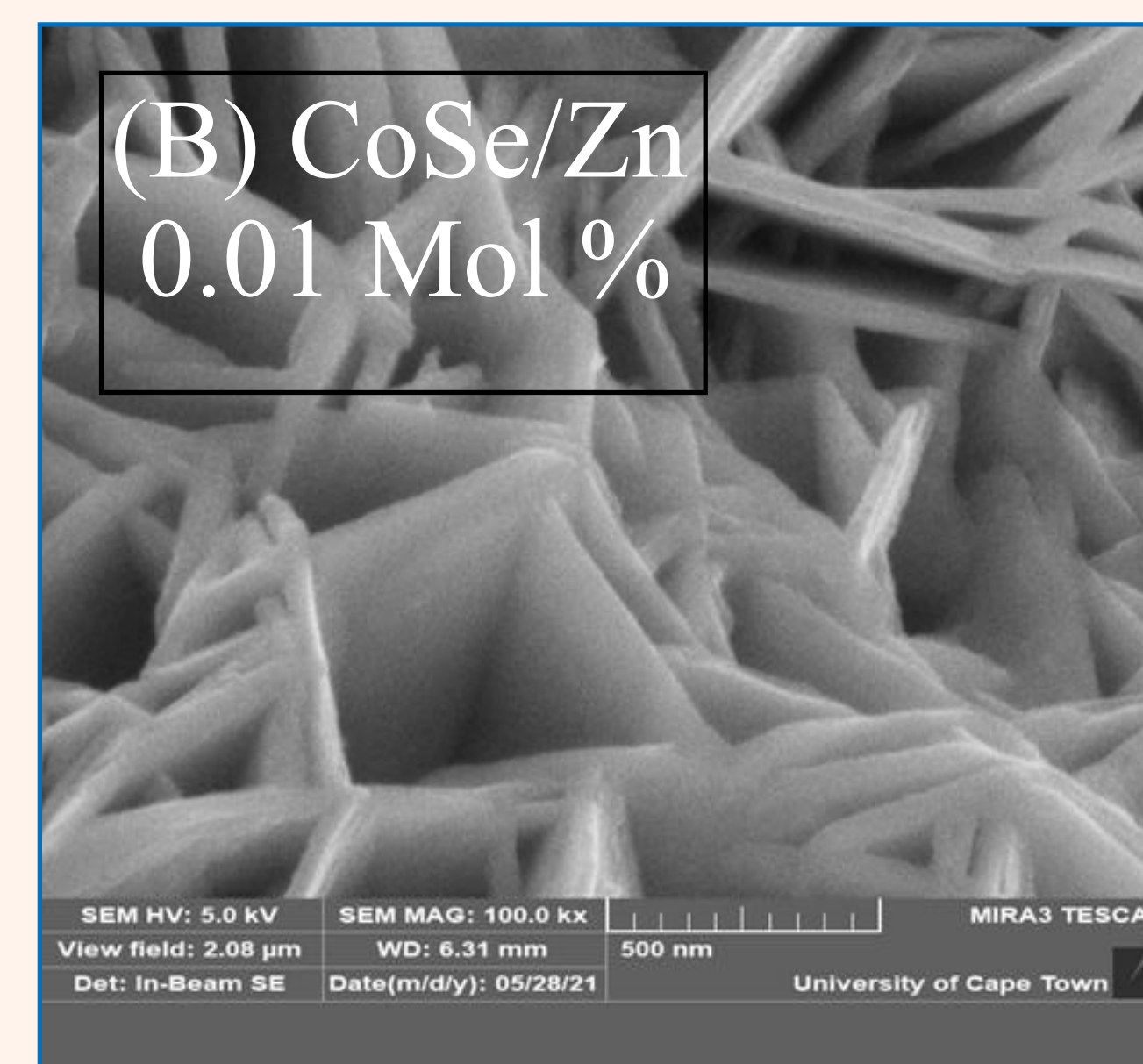
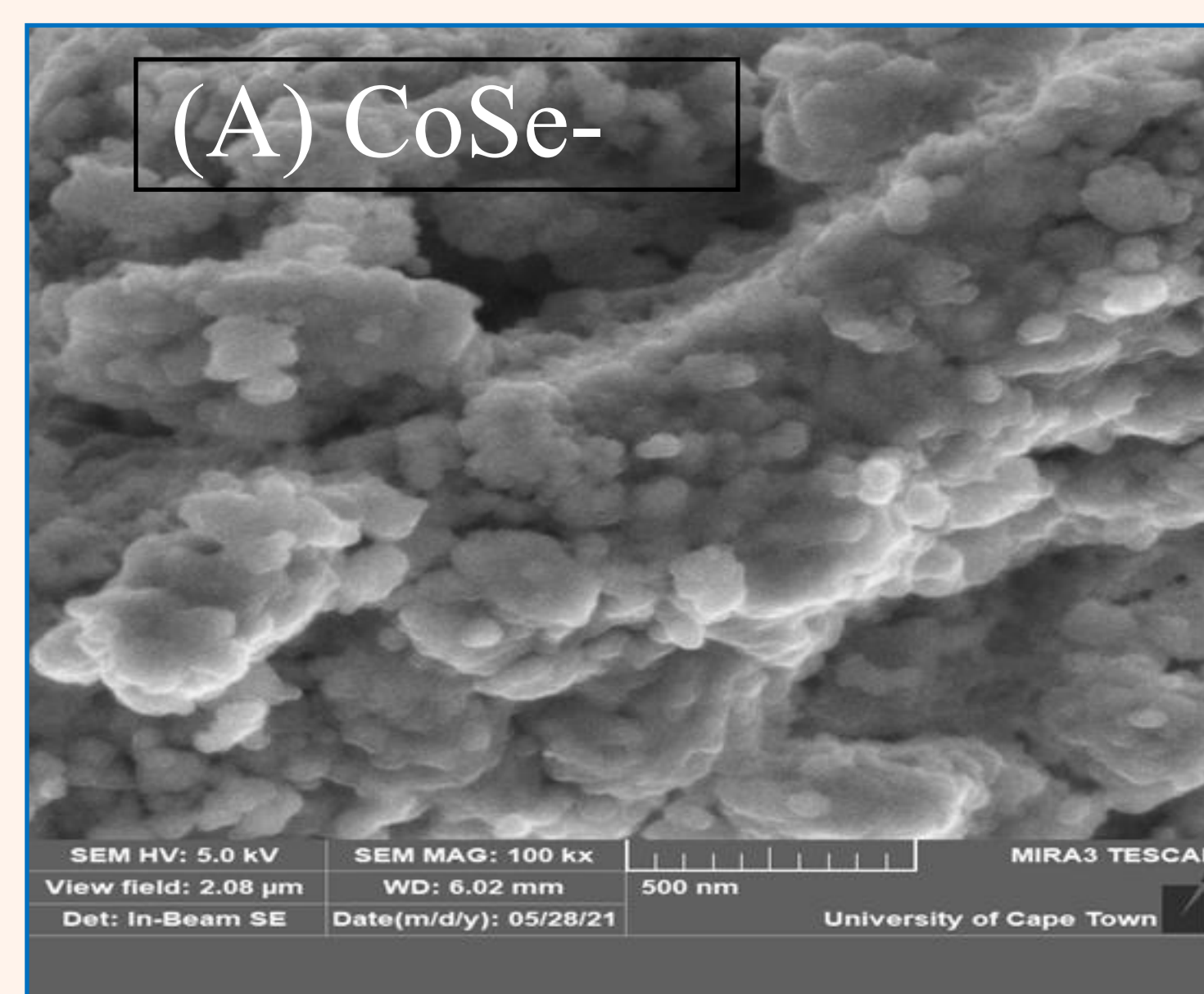
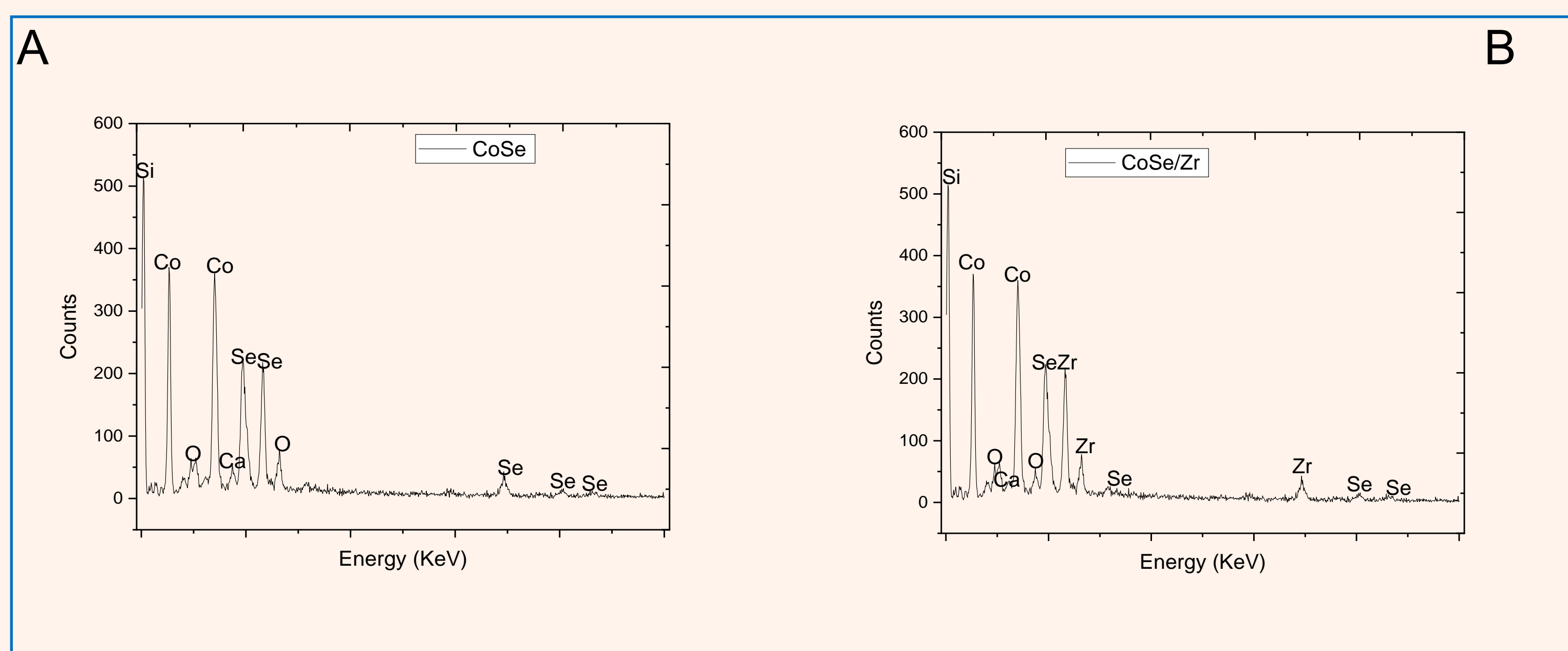


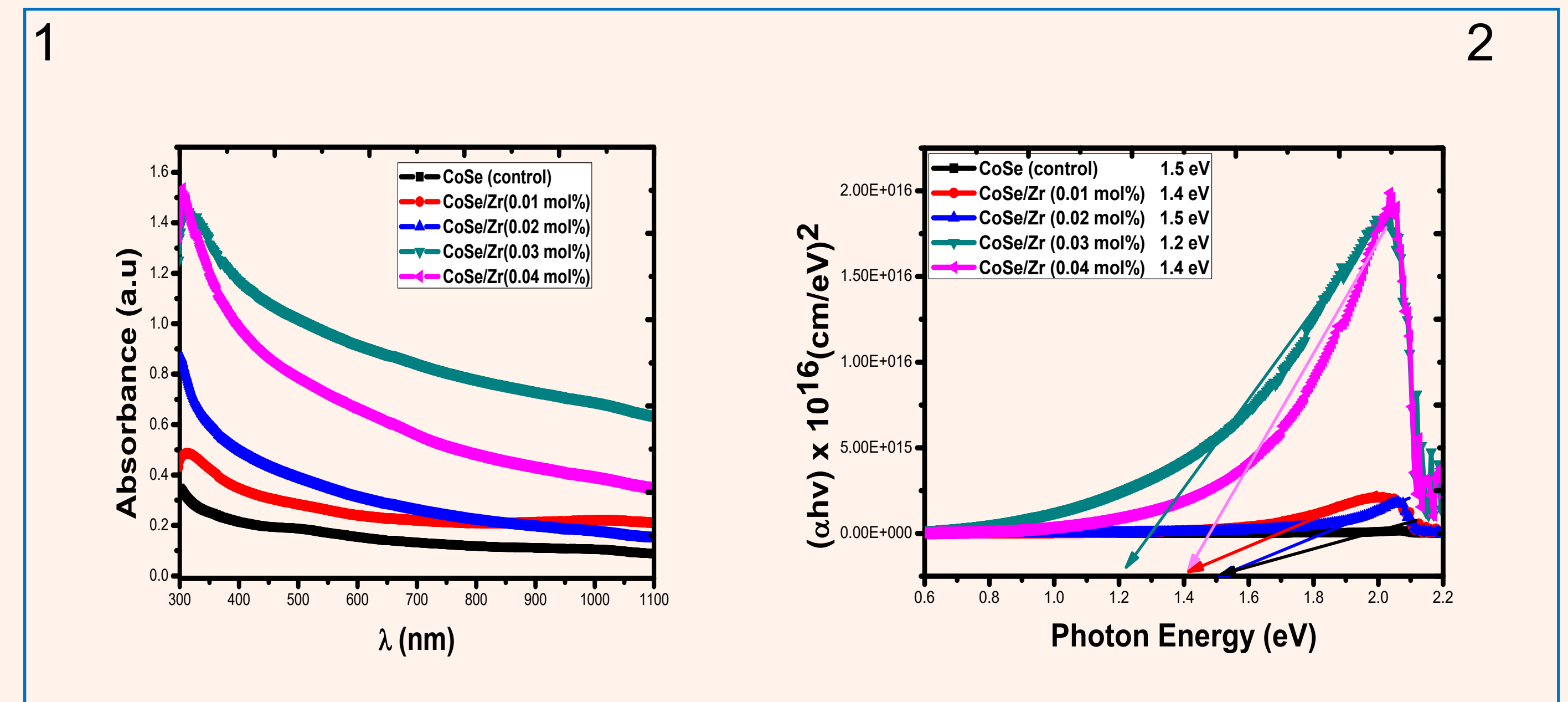
Fig.1. XRD pattern of CoSe and Zr/CoSe materials



Figs 2. A, B and C are micrographs of CoSe control, CoSe/Zr 0.01 mol% and CoSe/Zr 0.04 mol% respectively.



Figs 3. A and B are the EDX spectra for CoSe and CoSe/Zn respectively.



Figs 4.1 and 2 Plot of absorbance as a function of wavelength and Plot of absorbance coefficient square as a function of photon ener-

CONCLUSION

Spray pyrolysis technique was successfully used for the deposition of CoSe/Zr thin films. Doping CoSe with Zirconium made the absorbance more prominent at the UV region. As the dopant percentage concentration increased the absorbance improved significantly. Temperature increase significantly enhanced better performance of Zr/CoSe material.



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