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Abstract

A study for optical and structural properties of CuInS2 nanoparticles

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Abstract:

Copper indium sulfide (CuInS2) is one of the most promising ternary materials to be used in many applications because of its suitable optical band gap, cost-effective and non-toxic. CuInS2 nanoparticles have been synthesized at different copper to indium (Cu/In) molar ratios; 0.1, 0.5, 0.8, 1.2, and 1.4. Subsequently, these were deposited on glass substrates and under annealing temperature 300 °C via the electrospinning method. The optical properties have been analyzed at room temperature using UV-visible (UV-vis) spectroscopy which revealed a decrease in the optical bandgap from 1.52 to 1.32 eV with increasing Cu/In molar ratio. The structural properties have been analyzed in detail by X-ray diffraction (XRD), the patterns shown improvement in the quality and size of the ternary crystals with increasing the Cu/In molar ratio.

Biography:

Dr. Ali Abu Odeh has extensive experience in the academic field which extends to more than 21 years. He is currently an assistant professor at Khawarizmi International College. Prior to his current role, he worked in the colleges of Engineering in the United Arab Emirates University and Qatar University. He earned his Ph.D. degree in Nanoelectronic Engineering from University Malaysia Perlis in 2018. His master's degree was in Electrical and Computer Engineering from the New York Institute of Technology since 2007. He published many peer-reviewed papers with impact factor in ISI and Scopus indexed journals. He is an editorial board member, peer-reviewer, and keynote speaker for many journals and conferences. He received two awards for his research in the University Malaysia Perlis.

Publication of speakers:

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