

Abstract Submitted  
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**Synthesis of CuInSe<sub>2</sub> thin films from electrodeposited aqueous solution on graphene sheets** ZACHARY WILLIAMS, HUMBERTO MONSIVAIS, Stephen F Austin State Univ — The main objective of this research project was the production of a photovoltaic cell by synthesizing a thin film of CuInSe<sub>2</sub> on a graphene sheet by electrochemical deposition. Copper indium selenide is a promising candidate for thin-film photovoltaic applications due to its formidable semi-conductor characteristics. Graphene has been proven to have the best electrical conductivity of any other metal. CIS films were synthesized through electrochemical deposition from an aqueous solution. The aqueous electrolytic solution of 100 mL was prepared using these molarities: 1 mM of CuCl<sub>2</sub>, 10 mN of InCl<sub>3</sub>, 5 mM of SeO<sub>2</sub>, and 25 mA of Na-citrate-dihydrate (Na<sub>3</sub>C<sub>5</sub>O<sub>7</sub>) which acted as the complexing agent. Subsequently, the films were annealed for 5 minutes at 650 °C using a tube furnace. Ultimately, EDS analysis was conducted to analyze the chemical characterization of the sample after annealing.

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