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[SEM-176] SONOCHEMICAL-ASSISTED, ELECTROLESS DEPOSITION OF Cu_{2-x}Te FILMS.

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Different studies describe that the solar cell based on the semiconductor junction CdTe/CdS presents a problem of diffusion of copper from the back contact. Cu_{2-x}Te has been proposed as a promising alternative to overcome this problem while creating an ohmic contact. Nevertheless, it is necessary to have an accurate control on the deposited phase over the entire cell processing. In this work, Cu_{2-x}Te films were formed onto Cu sheet by electroless deposition assisted or not by ultrasonic agitation and later air-annealed. Deposition time, composition and concentration of the chemical bath were varied in order to study the evolution of the structure after post annealing at various annealing temperatures from 150 °C to 400 °C. Films were characterized by X-ray diffraction and atomic force microscopy. Deposits in chloride solution exhibit spontaneous reaction and substrate corrosion making non-uniform deposit, while deposits formed galvanically in a nitrate acid bath, using a zinc containing counter-electrode, exhibit microscopically smooth surfaces. On the other hand, ultrasonic assisted electroplating shows homogenous topography and the formation of Cu_{2-x}Te in its weissite phase without thermal treatment.

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