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Transmission Electron Microscopy Study of CuIn_3Se_5

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The off-stoichiometric In-rich phase CuIn_3Se_5 was studied by means of electron diffraction and high resolution electron microscopy. The structural investigations provide unambiguously a tetragonal structure of this compound which can be derived from the chalcopyrite structure of CuInSe_2 . A theoretical model with an ordered occupation of vacancies is discussed for this structure. A detailed comparison between the theoretical model and the experimental achieved one's is revealed.