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High-absorbance chalcogenide semiconductors¹

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If the absorption coefficient of a material exceeds 10^5 cm^{-1} , 95% of the incident light is absorbed in 300 nm. Higher absorption enables thinner solar cells, which saves material and also reduces constraints on carrier mobility. Chalcogenide semiconductors such as CuSbS and CuTeS tetrahedrite and the metastable $\text{Sn}_{1-x}\text{Ca}_x\text{S}$ alloy offer a route to such absorbers. The optical, structural and transport properties of these systems will be discussed.

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