

p型含铜透明导电材料的新进展

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摘要 基于p型透明导体在平面显示、透明二极管和太阳能发电等领域的广泛应用前景, 一些含铜的透明导体材料因具有优异的性能而备受人们关注. 本文综述了p型含铜透明导体的研究现状.

重点介绍含铜的氧化物和氧硫化化合物的本征及其掺杂研究进展,

从结构化学的角度论述了此类化合物p型导电的机理及共性. 研究表明, 含[Cu₂S₂]

导电层的层状氧硫化化合物是颇具潜力的p型透明导体候选材料.

关键词 [p型](#) [透明导体](#) [层状结构](#)

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Recent Research of Cu-based Transparent Conducting Materials with p-type

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Abstract Cu-based transparent conducting materials (TCMs) have many special properties, so they can be used in many application fields such as panel display, transparent transistor, and solar photovoltaic energy systems. In this paper, the recent achievements on the TCMs of some Cu-based oxides and oxysulfides are reviewed, which are focused on the structure chemistry and conducting mechanism, considering the strong correlation between structure and performance. It is pointed out that conducting [Cu₂S₂] layers are quite common and important for p-type conducting, and the layered-structure will promise a wide band gap for the materials.

Key words [p-type](#) [transparent conducting material](#) [layered structure](#)

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