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The preparation of $\text{Ag}_2\text{ZnSnS}_4$ homojunction solar cells

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Abstract: In this work, an $\text{Ag}_2\text{ZnSnS}_4$ (AZTS) homojunction film was obtained by the one-time introduction of sulfur on a laminated structure precursor film. Furthermore, this homojunction film was incorporated in the solar cell with a structure of Mo/AZTS/i-ZnO/ITO and an efficiency of 0.87% was achieved. This is the first report on the fabricated quaternary semiconductor homojunction solar cells. This work provides a new idea and method for the fabrication of thin film solar cells.

Key words: $\text{Ag}_2\text{ZnSnS}_4$ (AZTS); homojunction; thin films; solar energy materials

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