**Natural Waste to Electricity: Engineering Pomegranate Peels and Ag-Doped ZnO for Photovoltaic Applications**

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**Highlights**

A method for the conversion of natural waste from pomegranate peels to electricity conversion is described.

Natural dye from pomegranate peels were extracted, process parameters were optimized by RSM and was characterized by UV-Visible and FT-IR spectra.

ZnO and Ag-doped ZnO were synthesized by the hydrothermal route and utilized as the semiconductor for DSSC fabrication.

The Dye sensitized cell fabricated with Ag-doped ZnO showed 30% more conversion efficiency than the cells with pure ZnO.