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H_2 plasma treatment effects on electrical and optical properties of the BZO (ZnO:B) thin films

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We have investigated the effect of H_2 plasma treatment on the BZO (ZnO:B, Boron doped ZnO) thin films. The BZO thin films are prepared by LP-MOCVD (Low Pressure Metal Organic Chemical Vapor Deposition) technique and the samples of BZO thin film are performed with H_2 plasma treatment by plasma treatment system with 13.56 MHz as RIE (Reactive Ion Etching) type. After exposing H_2 plasma treatment, measurement of transmittance, reflectance and haze spectra in 300～1100 nm, electrical properties as resistivity, mobility and carrier concentration and work function was analysed. Regarding the results of the H_2 plasma treatment on the BZO thin films are application to the TCO for solar cells, such as the a-Si thin films solar cell.