Supplementary Material

Ag/MgO Nanoparticles via Gas Aggregation Nanocluster Source for Perovskite Solar Cells Engineering

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XPS of MgO on TiO_2

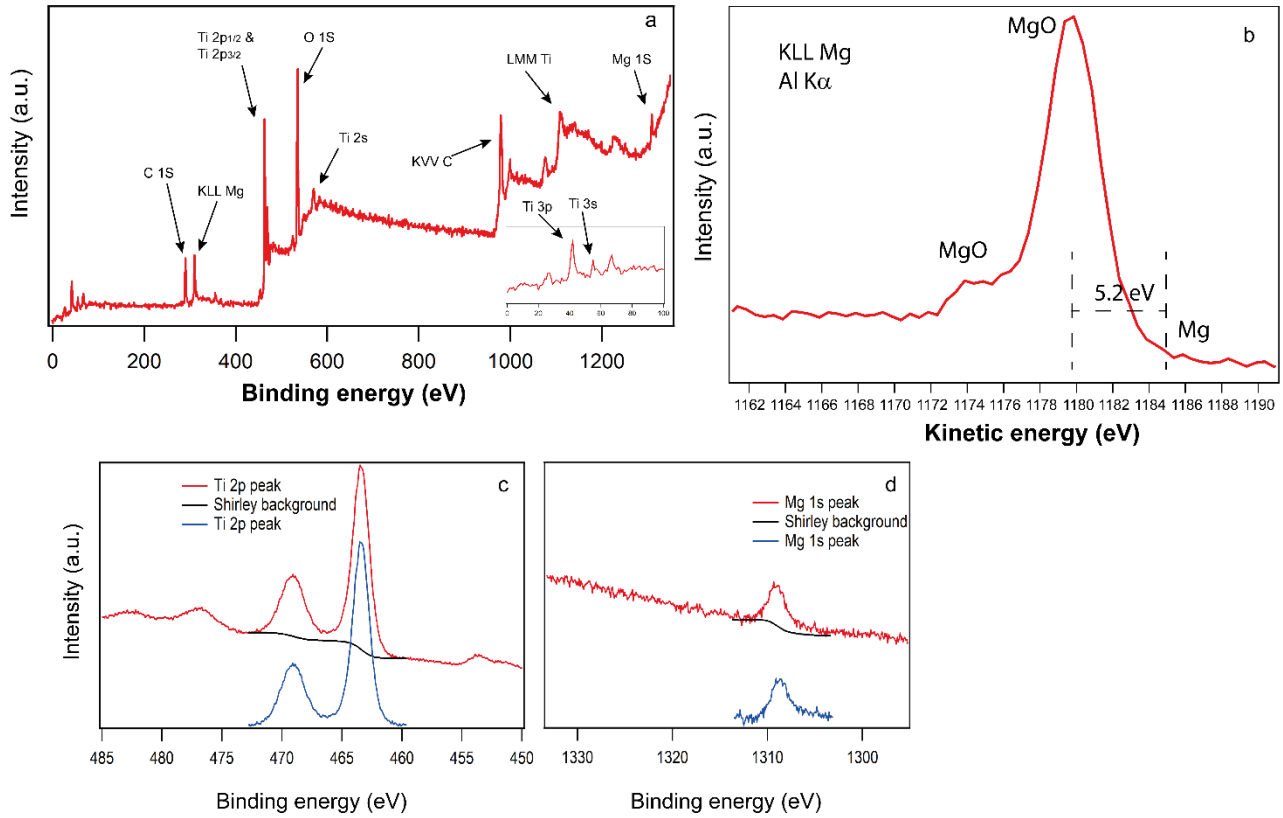


Figure S1: XPS (a) wide spectrum of the TiO_2 sample with MgO deposited on the surface, **(**b) Mg KLL, (c) Ti 2p core levels and (d) Mg 1s core levels with background subtractions.

AFM

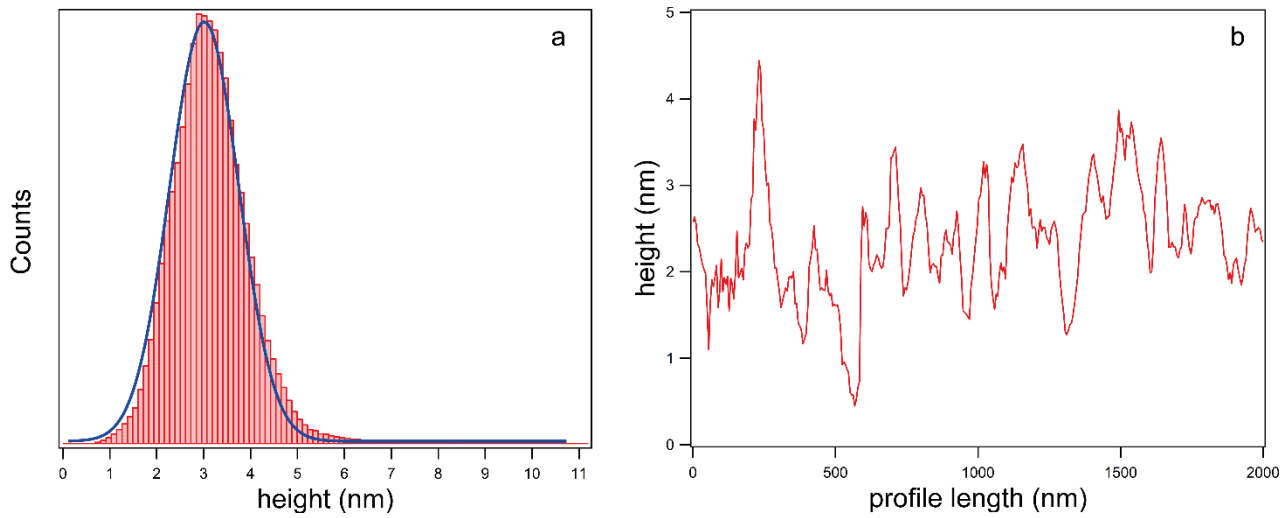
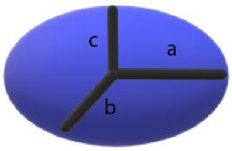


Figure S2: AFM (a) Height distribution of the substrate roughness (flat TiO_2) and (b) height of a profile line of 2 µm length.

Calculation of polarizability

The in-plane polarizability of a system made of isolated Ag oblate spheroids (a = b > c) embedded in a magnesia (MgO) matrix is calculated using Maxwell Garnett theory:

$$\alpha_{//}(\omega) \propto \frac{\varepsilon_{Ag}(\omega) - \varepsilon_{MgO}}{\varepsilon_{MgO} + L_{//}(\varepsilon_{Ag}(\omega) - \varepsilon_{MgO})}$$



where $\varepsilon_{Ag}(\omega)$ is the dielectric function of Silver, ε_{MgO} is the dielectric function of Magnesium Oxide, $L_{//}$ is the depolarisation factor of the in-plane direction. Different values of ε_{MgO} have been used according to what found in literature for thin layers of MgO.