

Figure S1 AFM image of as-synthesized GOs (on freshly cleaved mica).

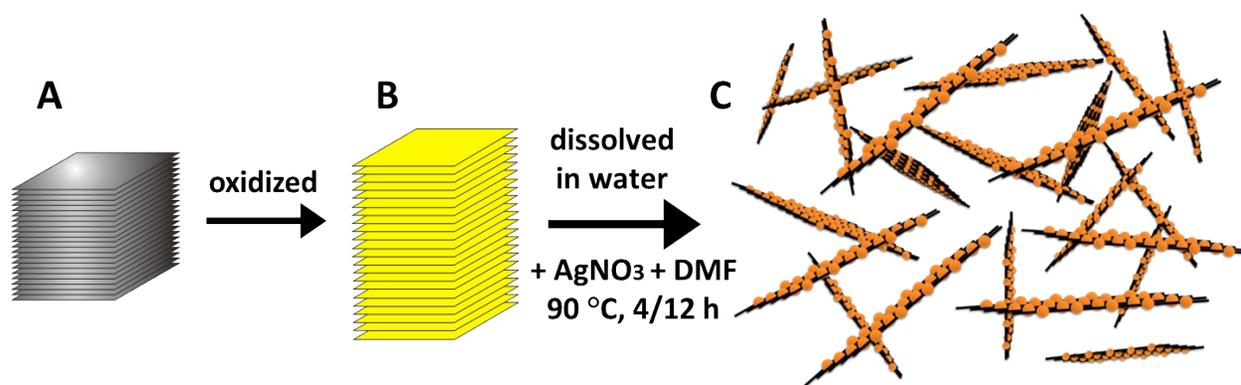


Figure S2 Schematic illustration of the route to synthesize Ag-GO hybrid sheets. The GOs were only slightly reduced due to the low concentration of DMF.

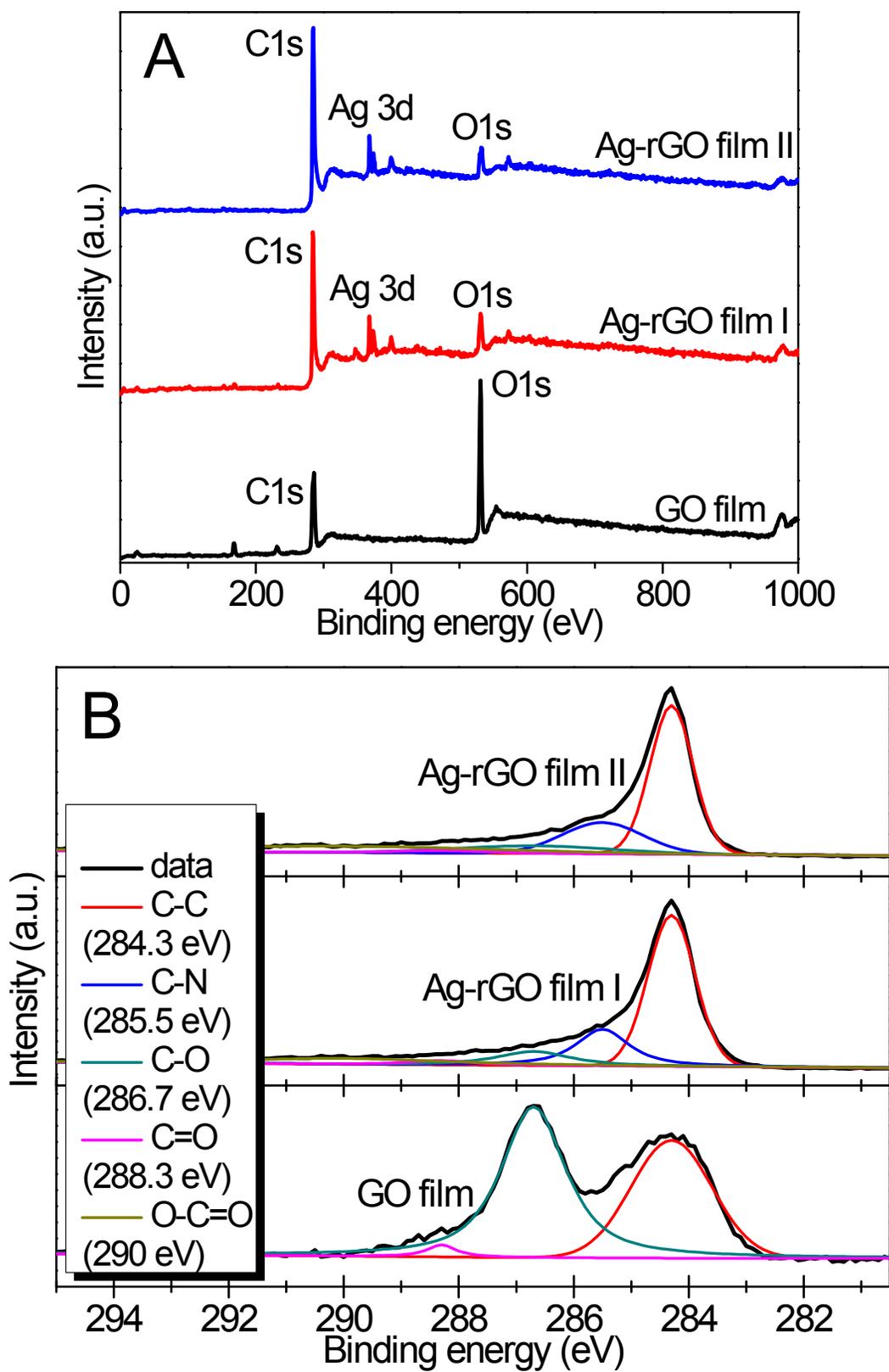


Figure S3 A) XPS survey spectra of GO, Ag-rGO I and Ag-rGO II. B) Deconvoluted XPS spectra of the C1s region of GO, Ag-rGO I and Ag-rGO II. Peaks corresponding to different carbon bonds are indicated.

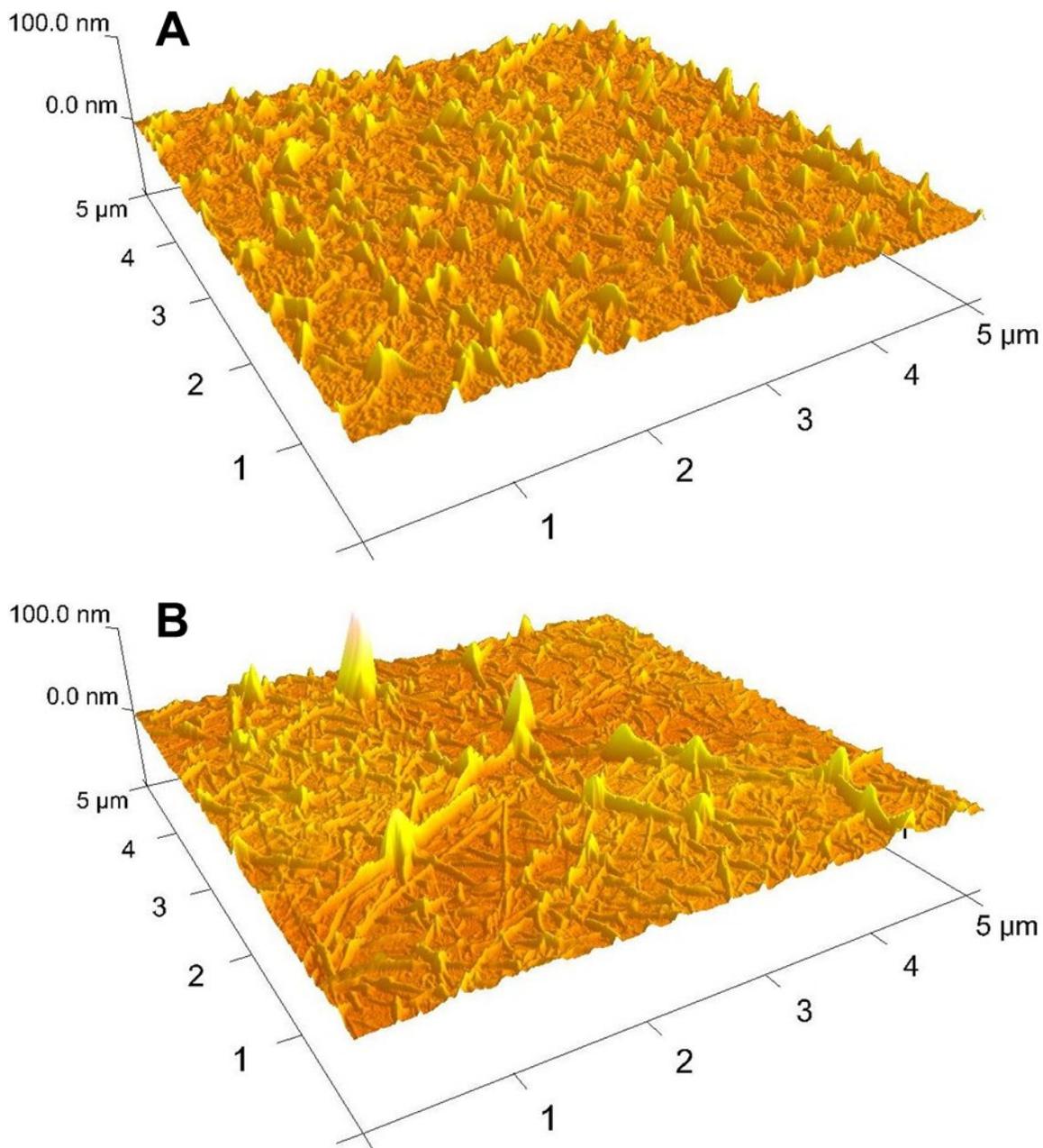


Figure S4 A) and B) 3D topography of the Ag-rGO hybrid film I and II.

Table S1 The roughness of Ag-rGO film I and II

| Ag-rGO film | Film I | Film II |
|--------------------------------------|---------|---------|
| Root mean square roughness (R_q) | 4.74 nm | 6.33 nm |
| Average roughness (R_a) | 3.27 nm | 3.74 nm |
| Maximum roughness (R_{max}) | 48.3 nm | 114 nm |