Supporting Information

Engineering the Surface Morphology of Inkjet Printed Ag by Controlling Solvent Evaporation during Plasma Conversion of $AgNO_3$ Inks

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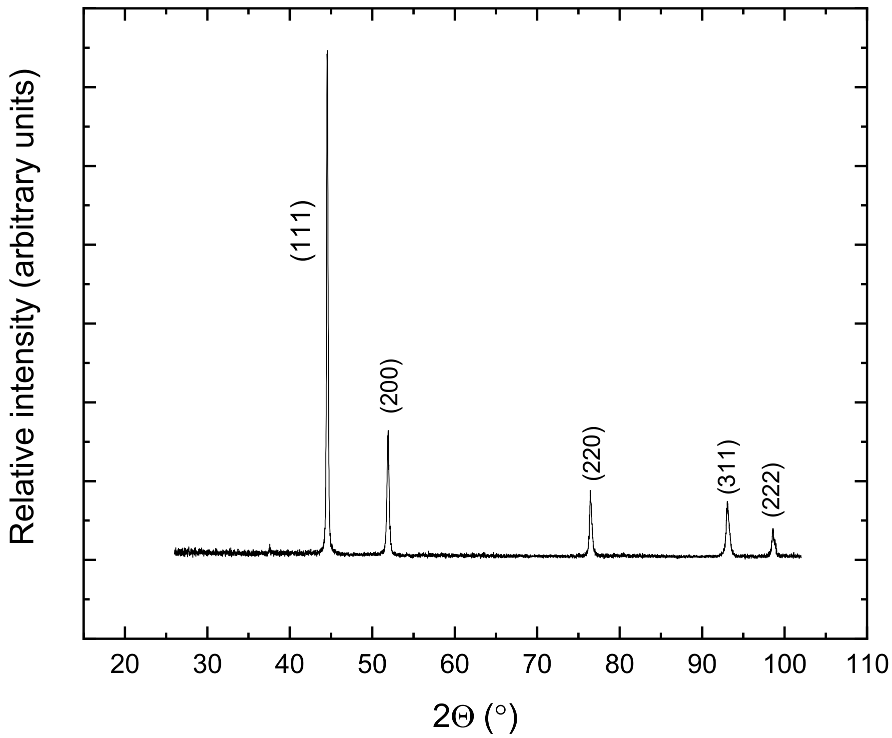

Fig. S1. X-ray diffraction (XRD) analysis on the surface of printed and plasma-converted Ag. The spectrum only shows peaks associated with elemental Ag crystal orientations [(111), (200), (220), (311), (222)], indicating that within the XRD information depth (a few hundred nanometers) the printed structure contains only Ag.

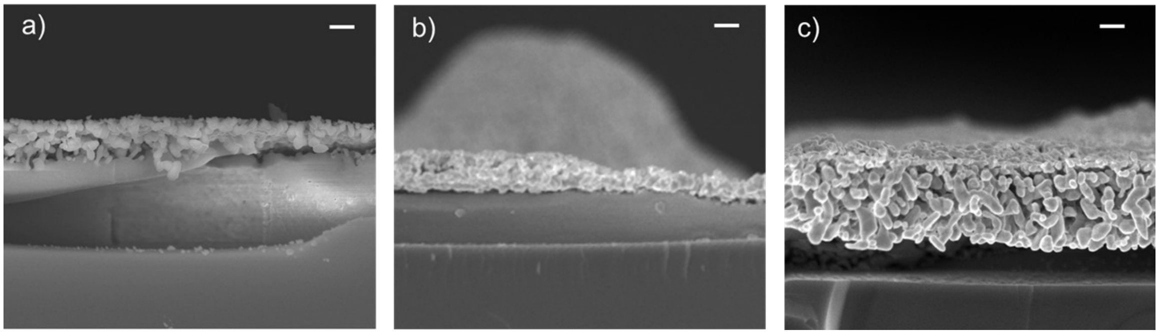

Fig. S2. Higher magnification cross-sectional SEM images of (a) Ag(EG), (b) Ag(diEG), and (c) Ag(triEG).

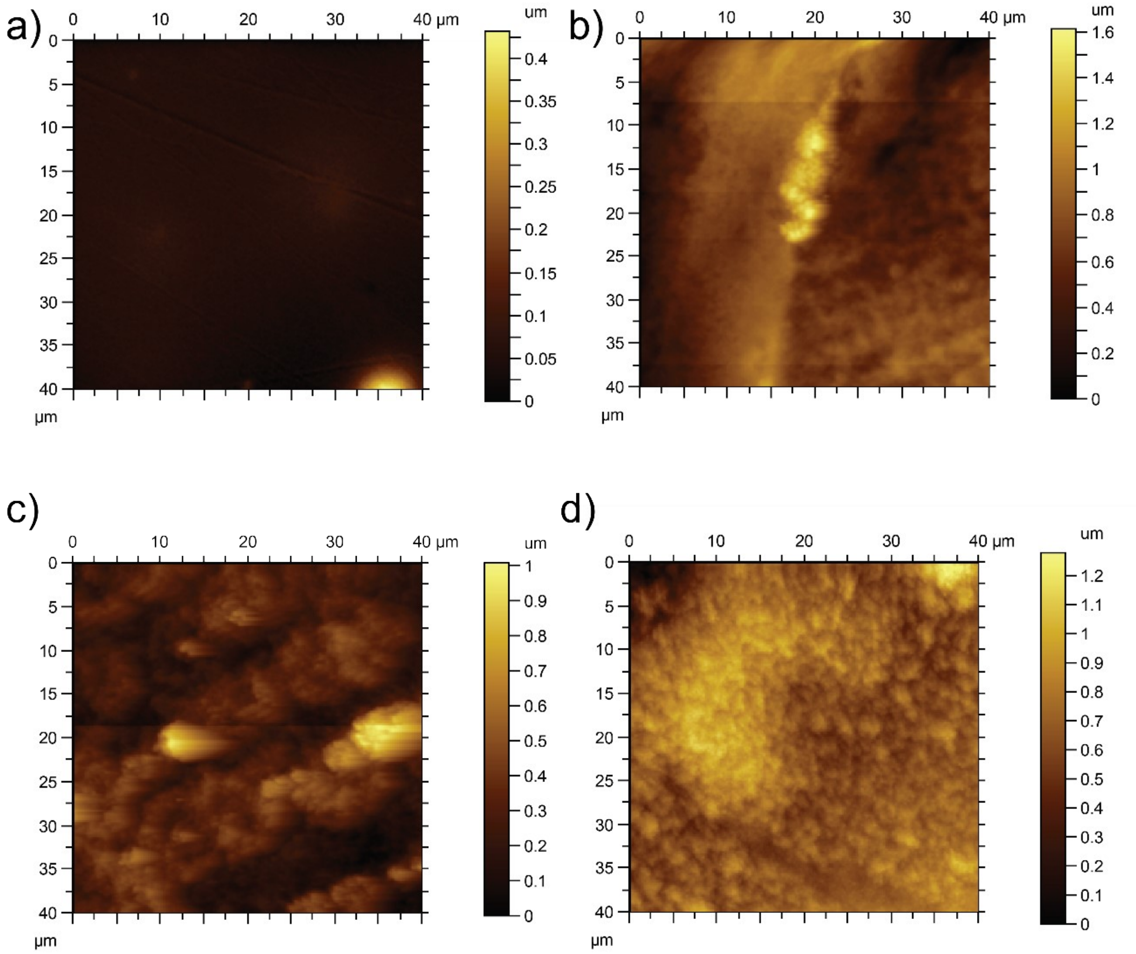

Fig. S3. Atomic force microscopy (AFM) topology plot of (a) sputtered Ag, (b) Ag(EG), (c) Ag(diEG), and (d) Ag(triEG). AFM shows similar results as optical profilometry. Ag (EG) is relatively smooth and has a big peak in the selected region. Ag(diEG) is rougher than Ag (EG) and has more peaks in a small area. The peaks in the Ag(diEG) are clustered together. Ag(triEG) is the roughest with peaks covers the entire selected region.

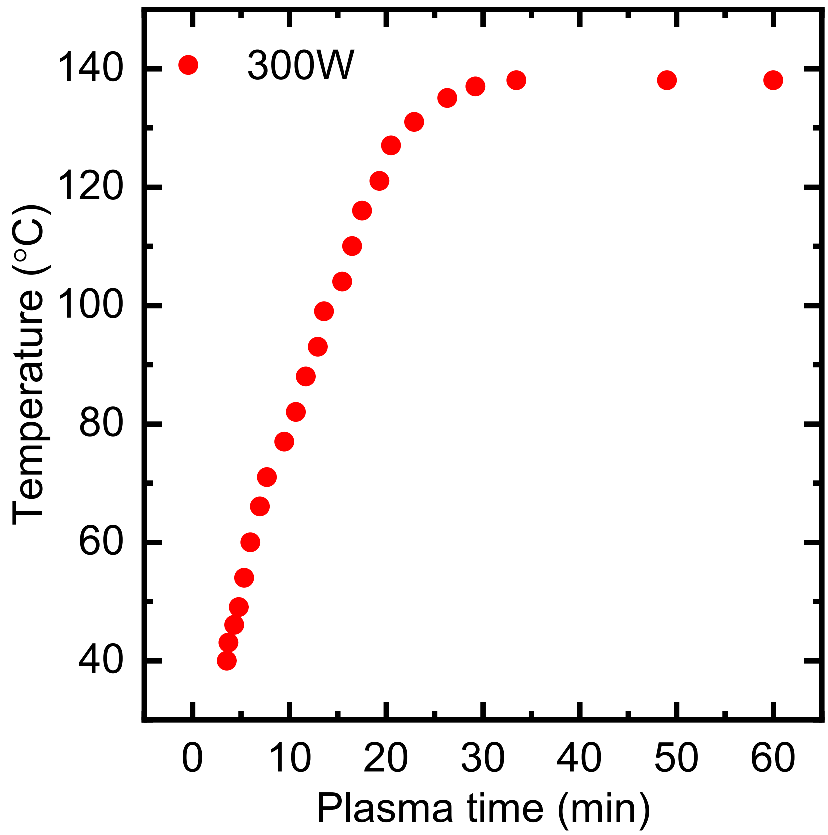

Fig. S4. Plasma chamber temperature at 300 W power as a function of time.

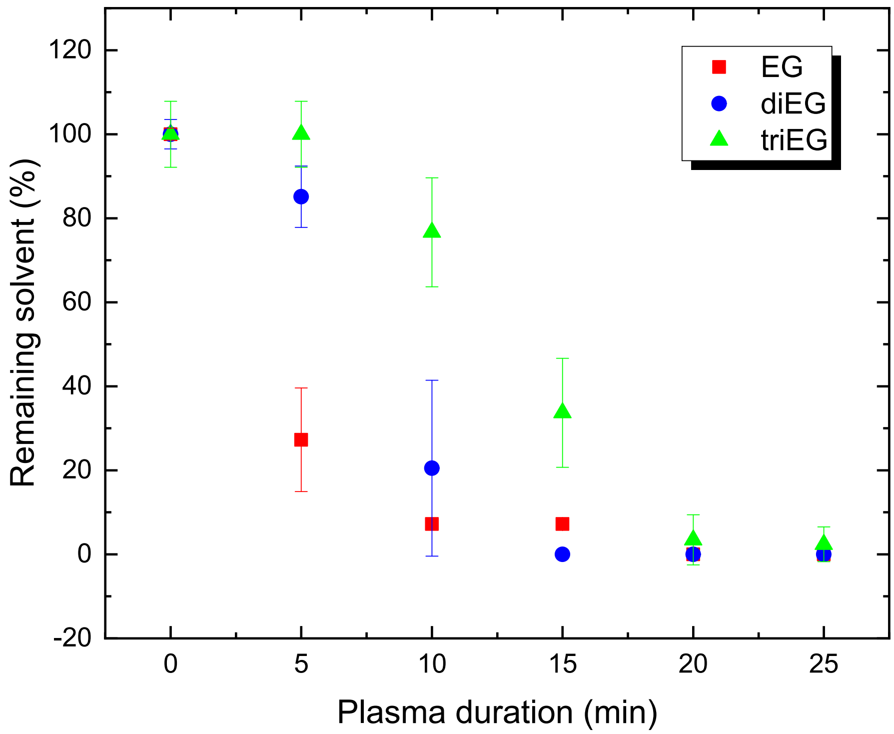

Fig. S5. Evaporation rate of EG, diEG, and triEG in the low-pressure plasma system. The Ar background pressure was 650 mTorr and the plasma power was 300 W