Electronic Supplementary Material (ESI) for Nanoscale.

Supporting Information

Spray-coating process for highly conductive silver nanowire networks as transparent top-electrode for small molecule organic photovoltaics.

Franz Selzer,* Nelli Weiß, David Kneppe, Ludwig Bormann, Christoph Sachse, Nikolai Gaponik, Alexander Eychmüller, Karl Leo, and Lars Müller-Meskamp

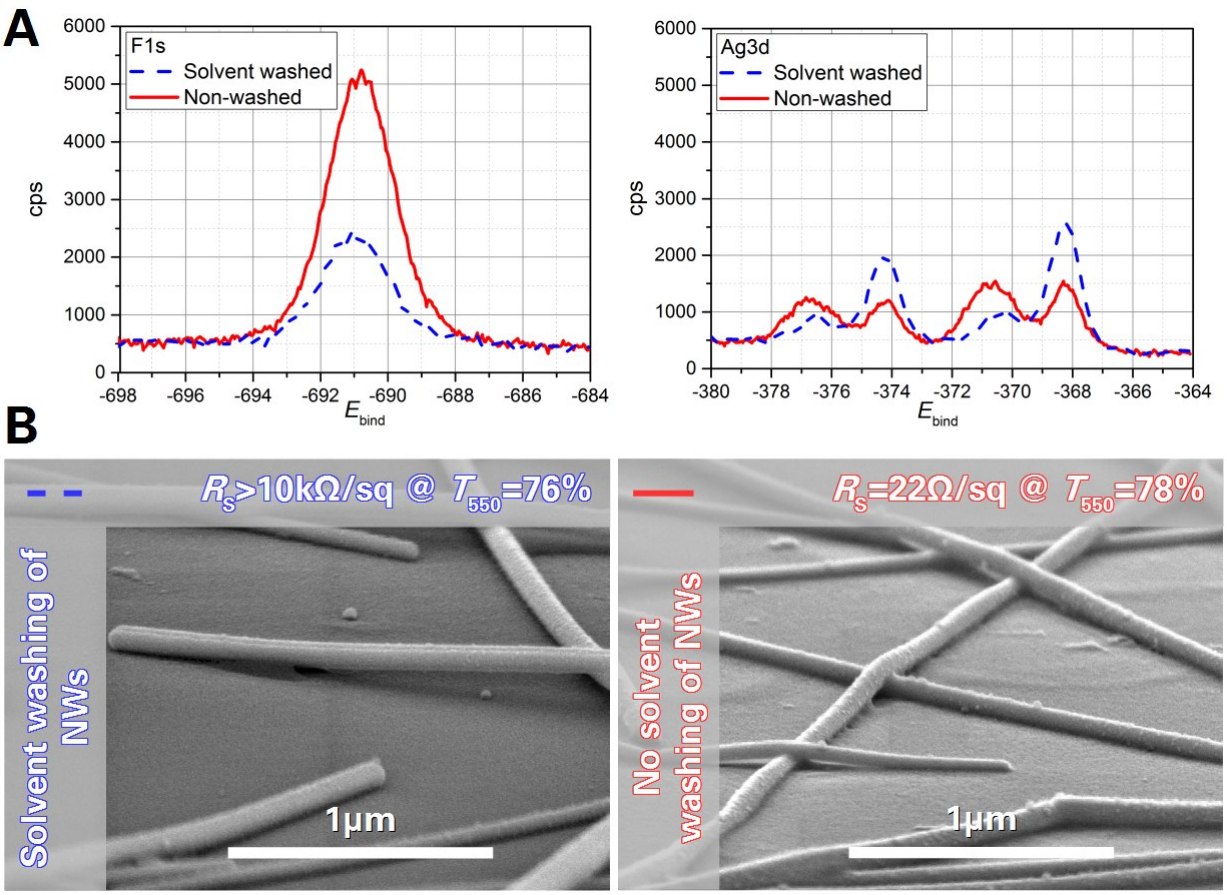

Figure S1. Investigation of the crucial role of the amount of EGC-2702. (A) XPS measurements of the F1s and Ag3d peak of AgNWs networks on glass stabilized with EGC-2702 and dispersed in HFE-7100. For both peaks electrodes with differently prepared AgNW dispersion are investigated. One dispersion is solvent washed with HFE-7100 (blue solid line) and the other one is non-washed (red dashed line) directly after modification and centrifugation but prior to the redispersion. A higher fluorine to silver ratio was detected in the non-washed case leading to a dramatically lower sheet resistance R_S of resulting electrodes. (B) SEM measurements of the same samples with corresponding R_S and transparency (including substrate). The non-washed wires exhibit a higher amount of free polymer between them and the substrate whereas the solvent washing removes nearly the whole polymer excess.

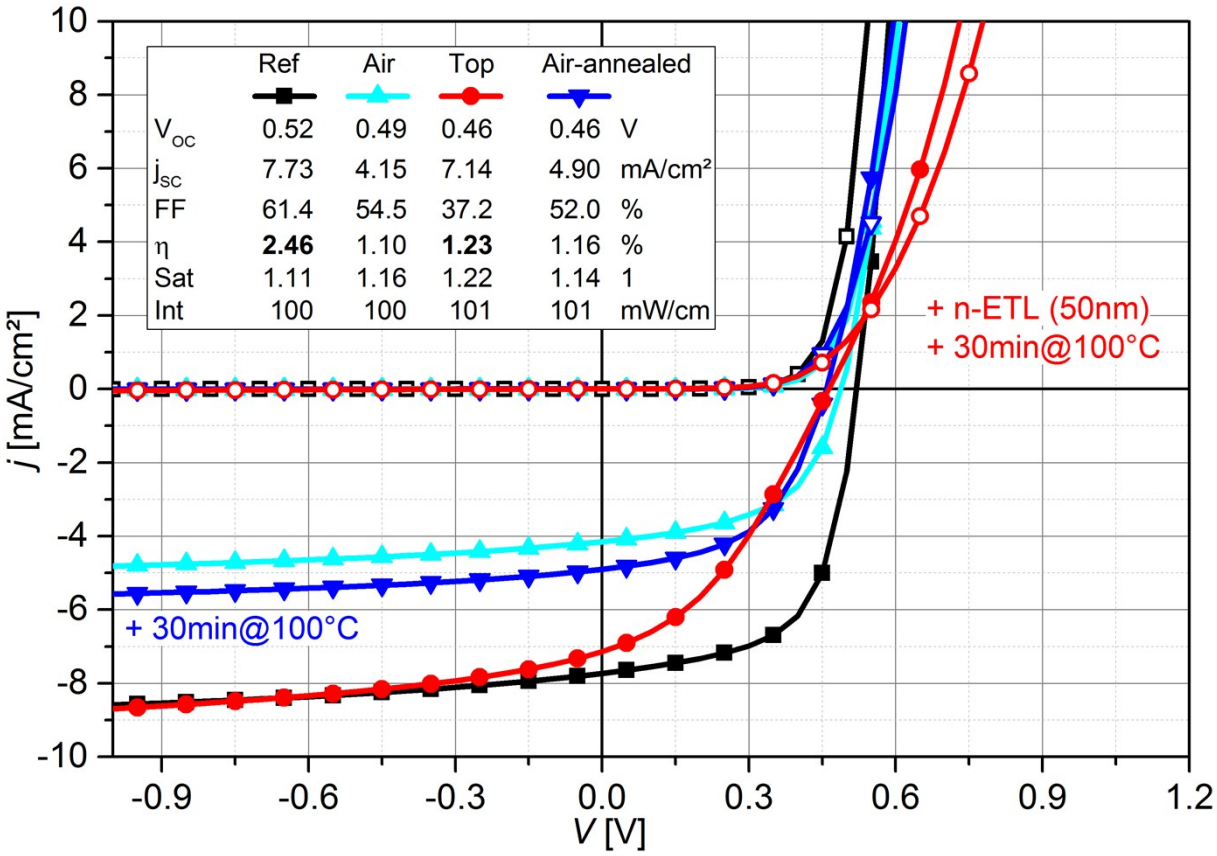

Figure S2. Investigation of a post-annealing step on the solar cell performance of the air cell (cf. Figure 3). The annealing slightly improves the short circuit current density (j_{SC}) of the air cell, while the fill factor (FF) and the saturation (Sat) is not influenced significantly. The open circuit voltage V_{OC} is reduced by 30 mV indicating a damaged absorber layer. Consequently, the power conversion efficiency increases only slightly. Its absolute value is comparable to the value of the top cell.