Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

Dye-sensitized solar cells composed of photoactive composite photoelectrodes with enhanced solar energy conversion efficiency

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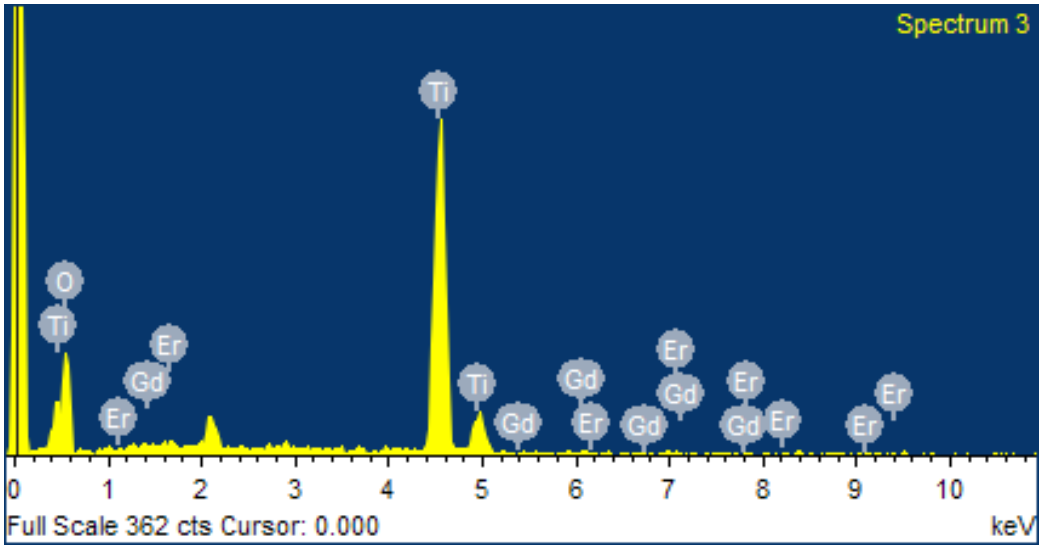

Figure S1. EDX analysis of the TiO_2/mix surface

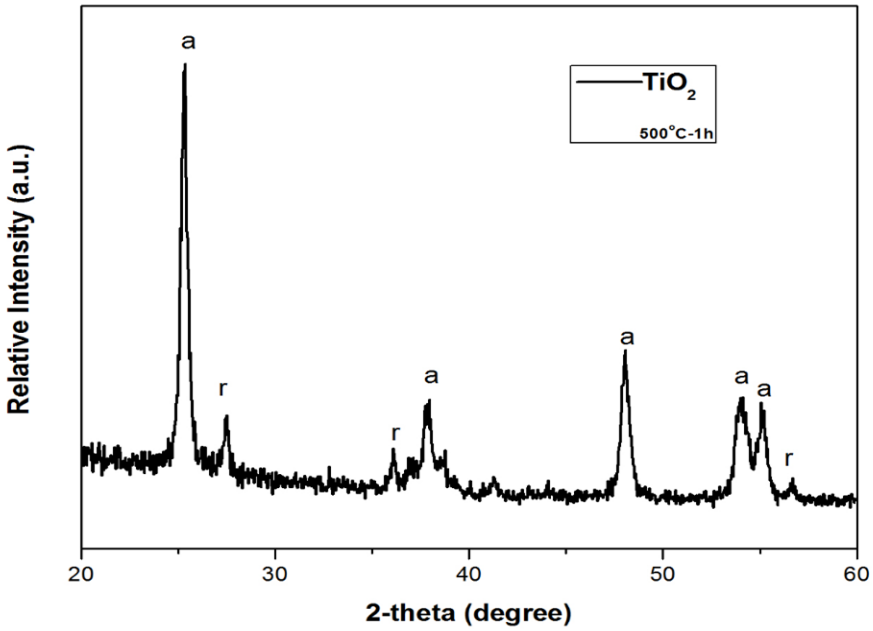

Figure S2. The XRD pattern of TiO_2 calcinated at 500^0 C.

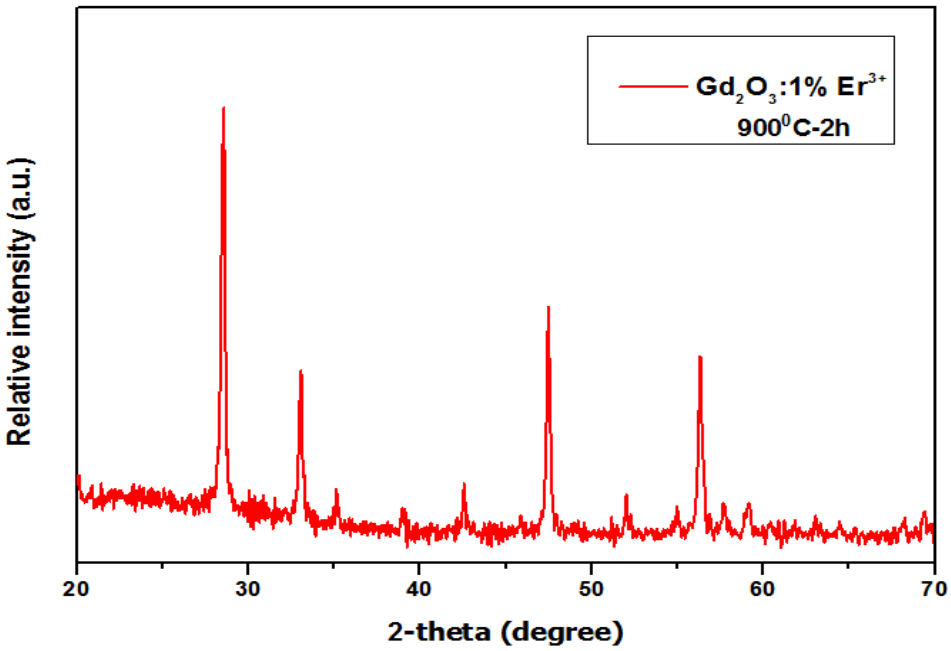

Figure S3. The XRD pattern of Gd_2O_3:1% Er^{3+} calcinated at 900^0 C

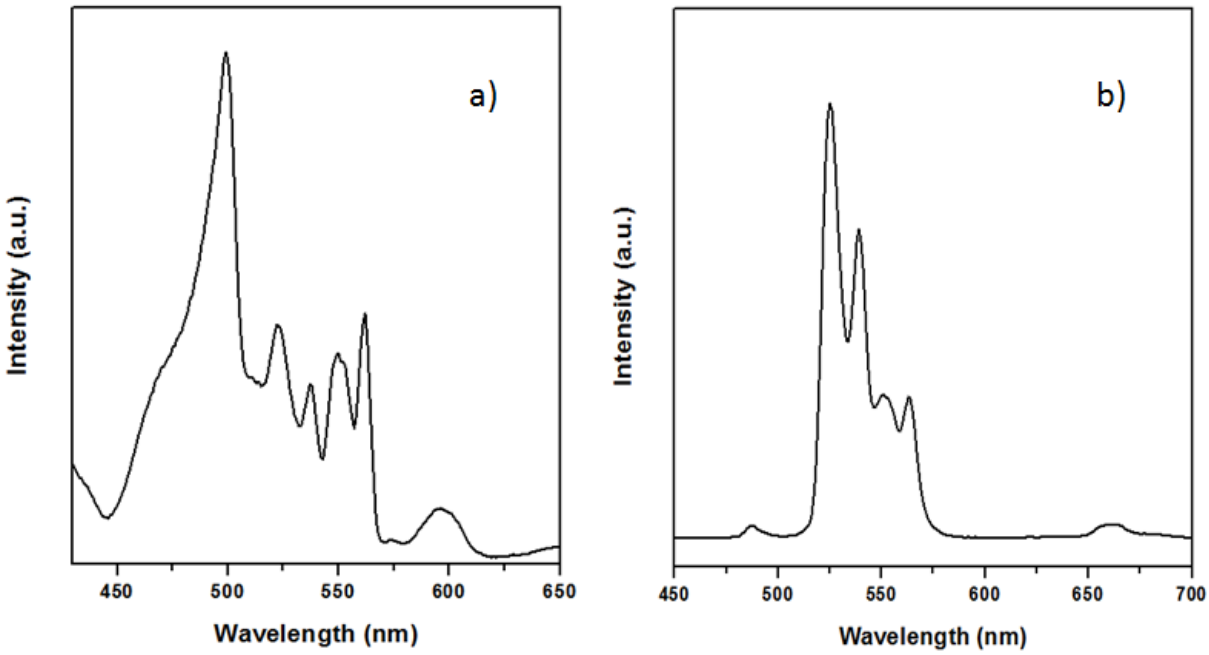

Figure S4. DC (a) and UC (b) luminescence spectra of Gd_2O_3: 1% Er^{3+} nanoparticles excited with 380 nm and 975nm NIR laser, respectively.

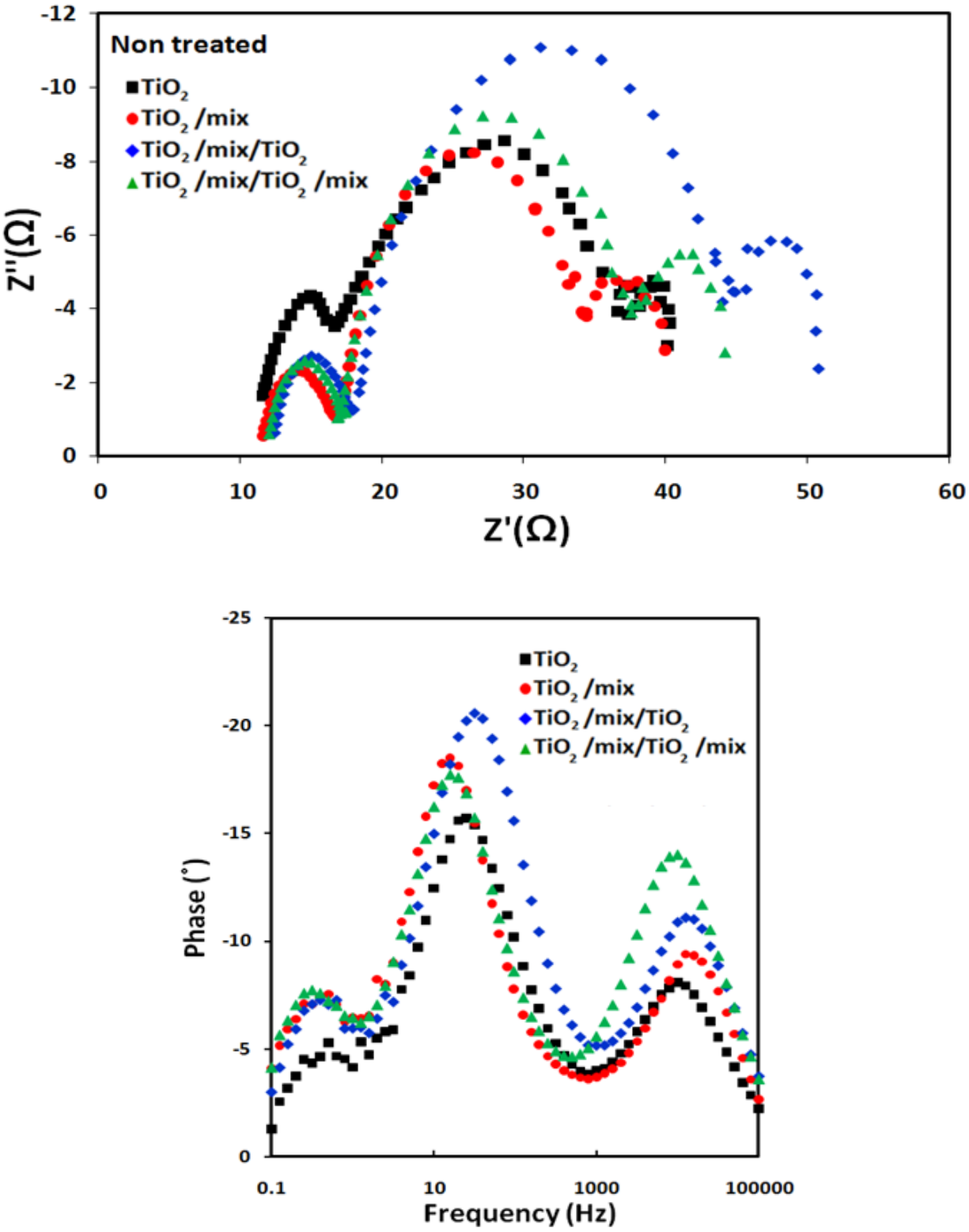

Figure S5. Nyquist plots and Bode phase plots of DSSC comprised of different electrode (Non-treated with $TiCl_4$)

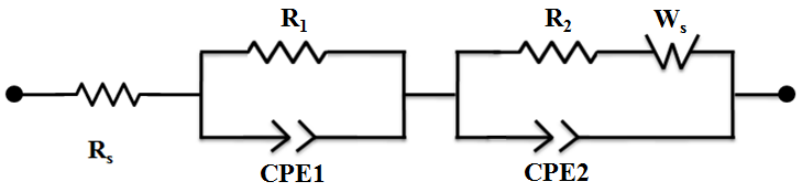

Figure S6. Corresponding equivalent circuit model of EIS spectra

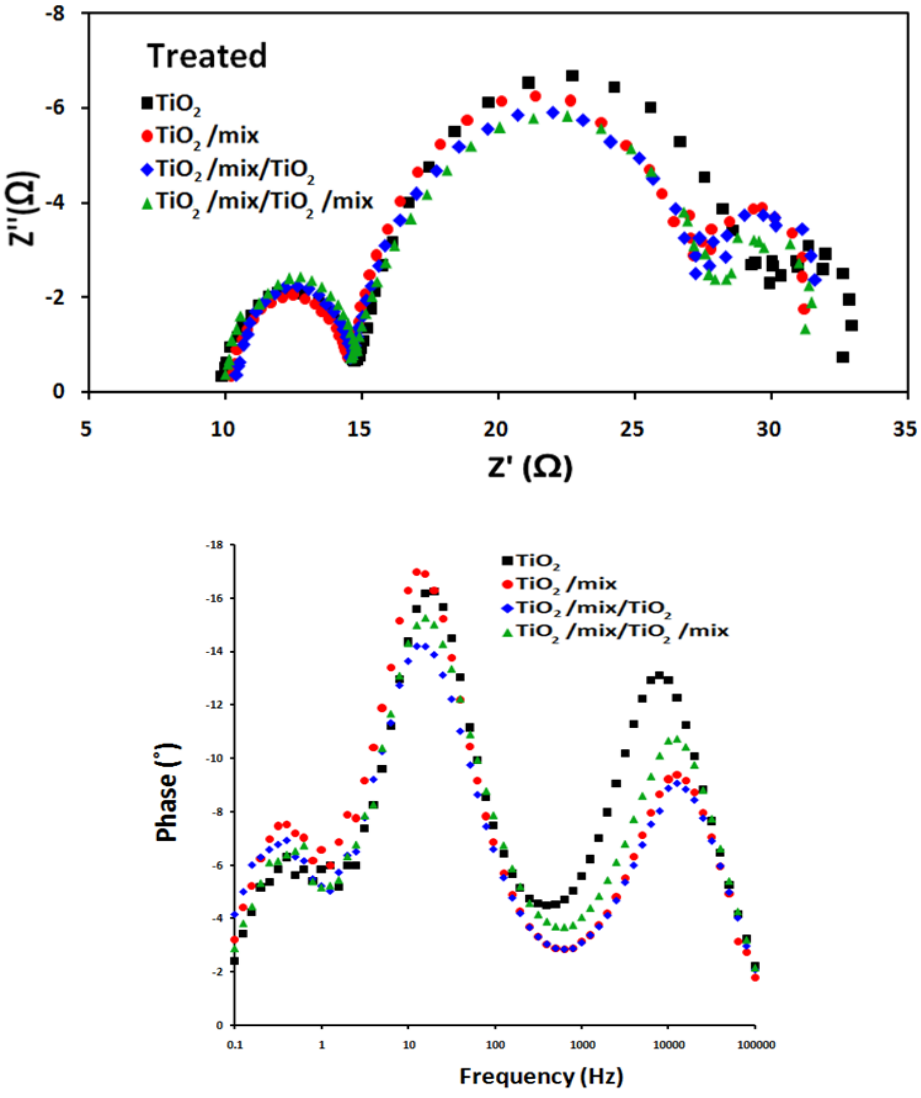

Figure S7. Nyquist plots and Bode phase plots of DSSC comprised of different electrode (Treated with $TiCl_4$)

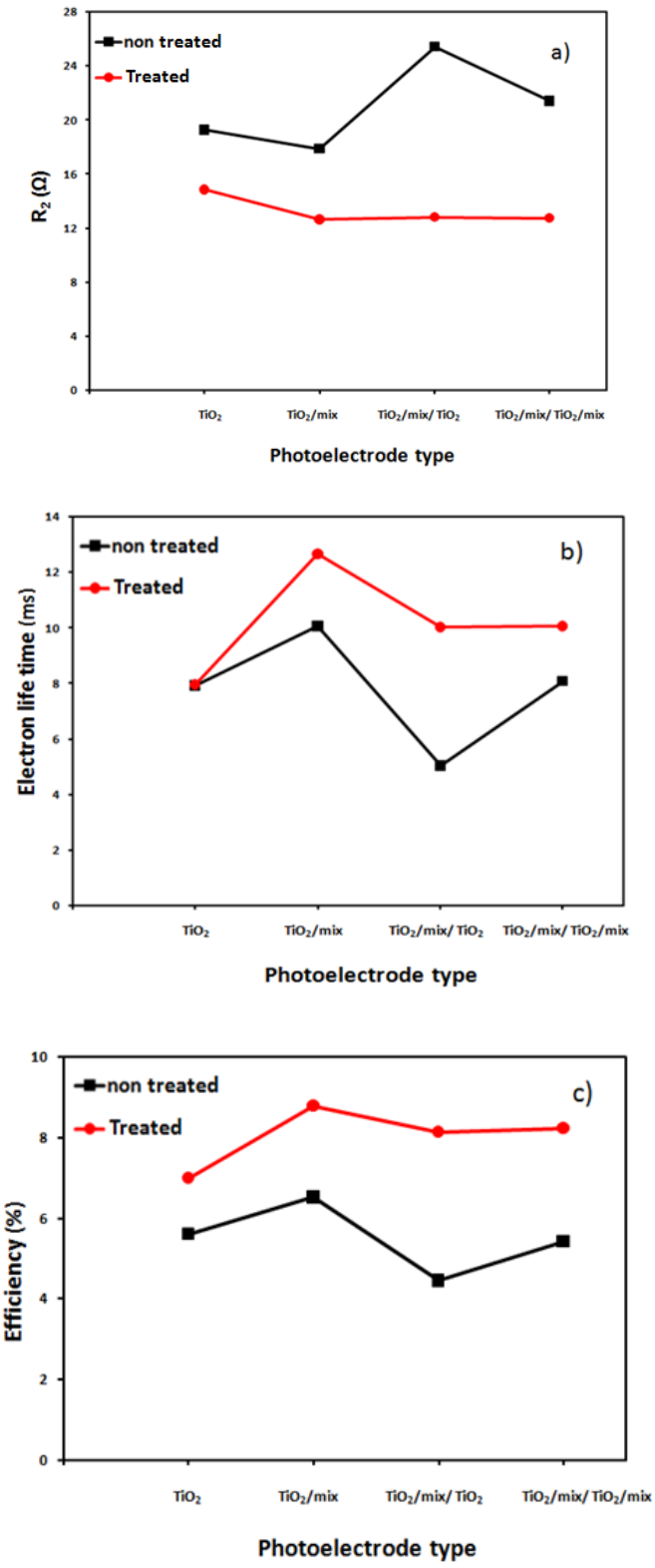

Figure S8. Dependence of R_2(a), electron life time, efficiency(c) on the different non-treated (black) and treated (red) PEs for DSSC.