Supplementary Information (SI) for Physical Chemistry Chemical Physics.

Characterization of F4TCNQ as a dopant in Spiro-OMeTAD thin films by Electron Paramagnetic Resonance Spectroscopy

*Shipra Prakash[1, *], Carl Hägglund[2], Shaoqi Zhan[1], Bhavya Rakheja[2], Gerrit Boschloo[1], Fikret Mamedov[1, *]*

[1] Department of Chemistry – Ångström Laboratory, Box 523, Uppsala University, Uppsala 75120, Sweden

[2] Department of Materials Science and Engineering, Box 35, Uppsala University, Uppsala 75103, Sweden

[*]**Corresponding Authors**, Shipra Prakash, shipra.prakash@kemi.uu.se, shipraprakash@gmail.com; Fikret Mamedov, fikret.mamedov@kemi.uu.se

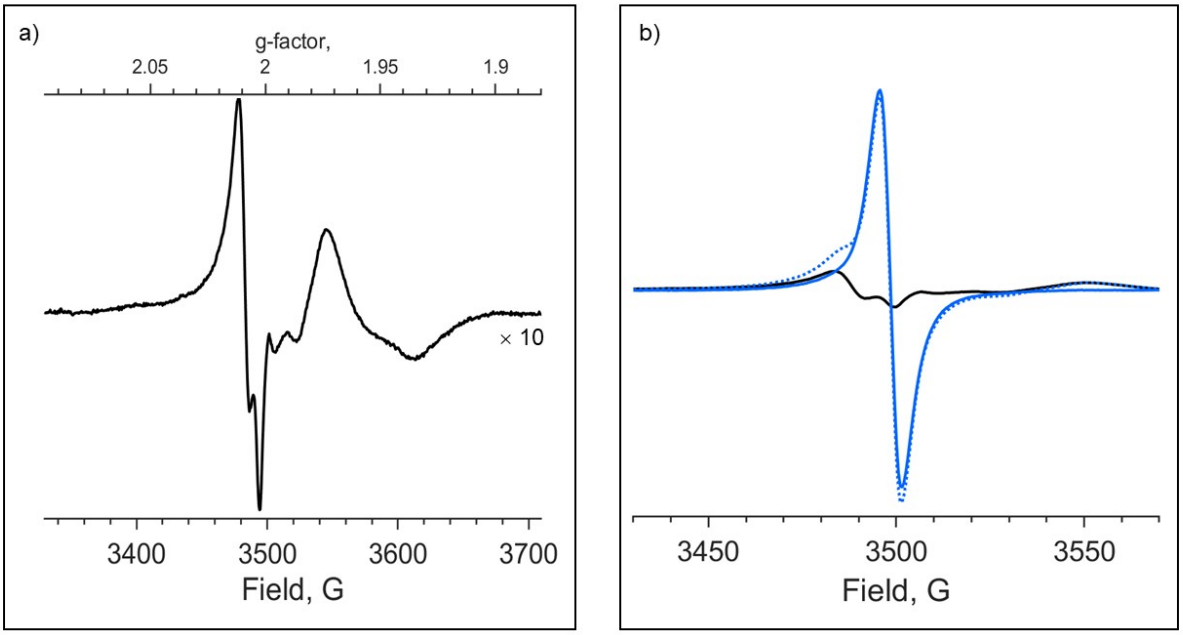

Figure S1. X-band EPR spectrum of the contaminant signal from glass substrate (a) and result of subtraction for one spiro-OMeTAD film (b) original spectrum (blue dotted lines), glass substrate spectrum (black) and result spectrum (blue). Note that the spectrum of the glass substrate in a) is magnified by a factor of 10 as compared to the one shown in b).

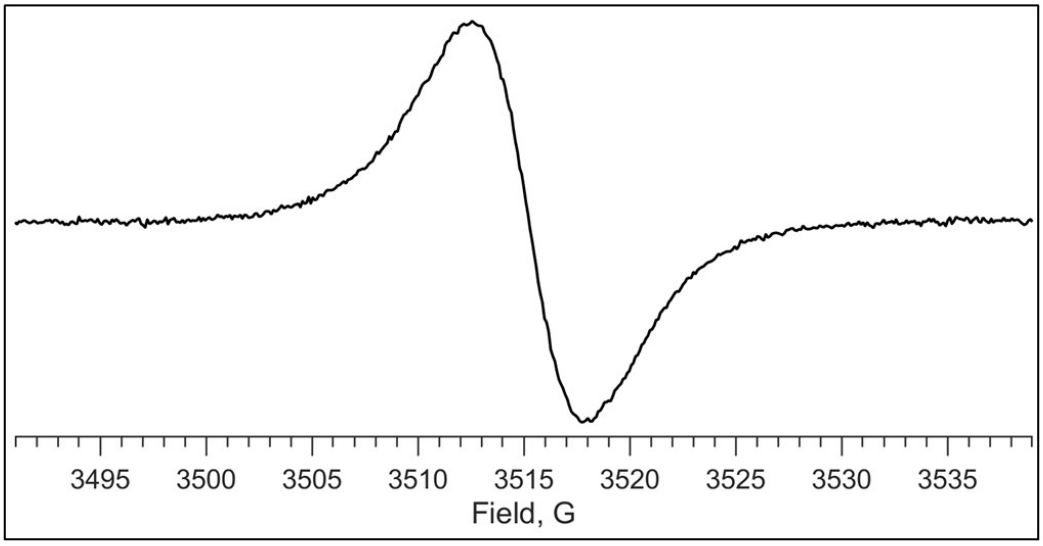

Figure S2. EPR spectrum of F4TCNQ in acetonitrile at a concentration of 1mg/mL (3.62 mM) showing the presence of $F4TCNQ^{\bullet-}$ anion radical.

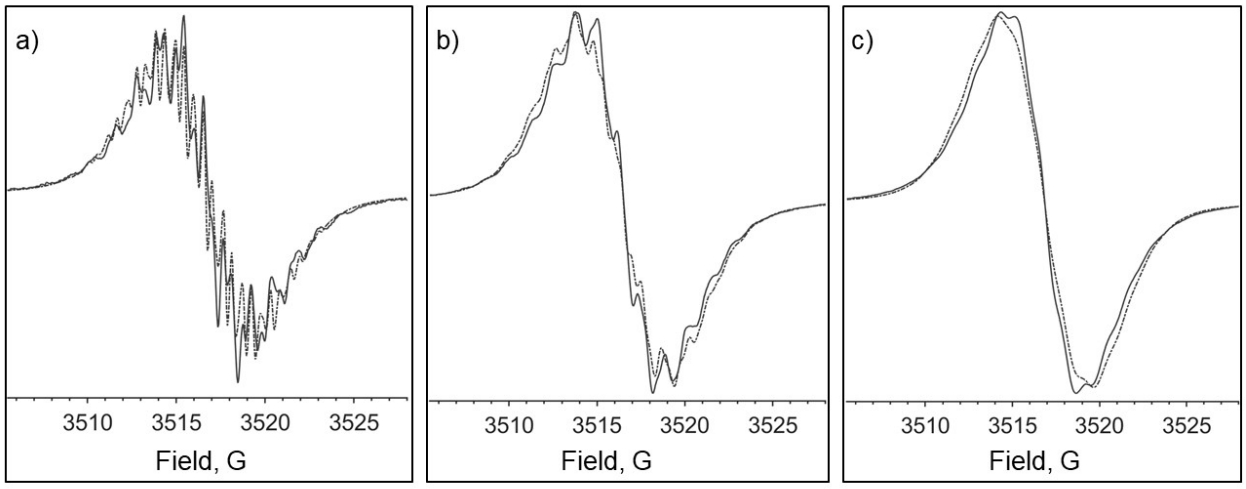

Figure S3. EPR spectroscopy on spiro-OMeTAD solution in chlorobenzene and F4TCNQ as a dopant in acetonitrile along with the corresponding EASY SPIN simulations considering a mixture of spiro-$OMeTAD^{\bullet+}$ and $F4TCNQ^{\bullet-}$ radicals for a) 1.5 mol % F4TCNQ b) 3 mol % F4TCNQ and c) 6 mol %. The simulated spectra are presented in dotted lines.