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

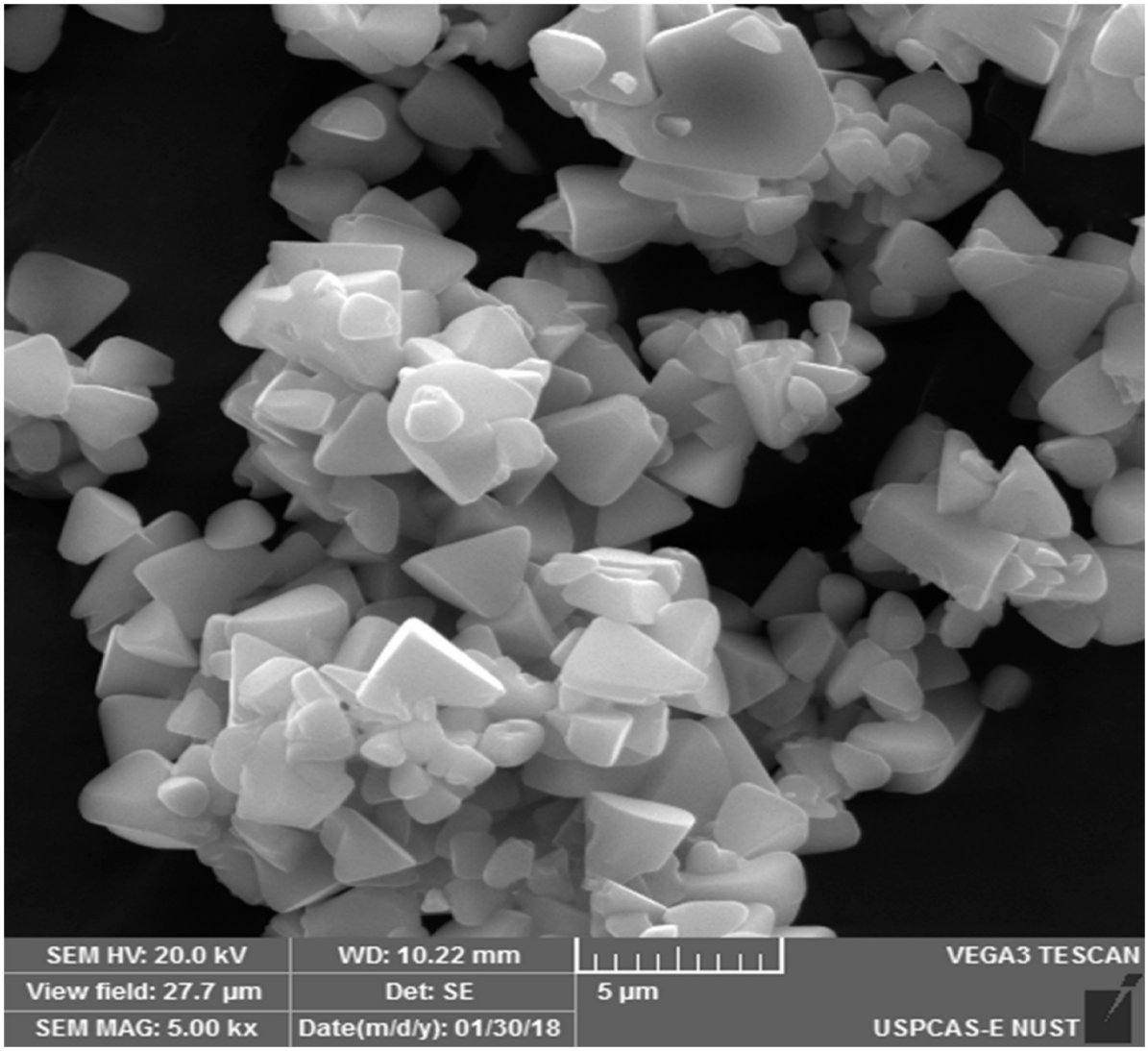

Figure.S1.SEM image of pure CuSCN powder synthesized using precipitation method, used for the preparation of spin coating solutions.

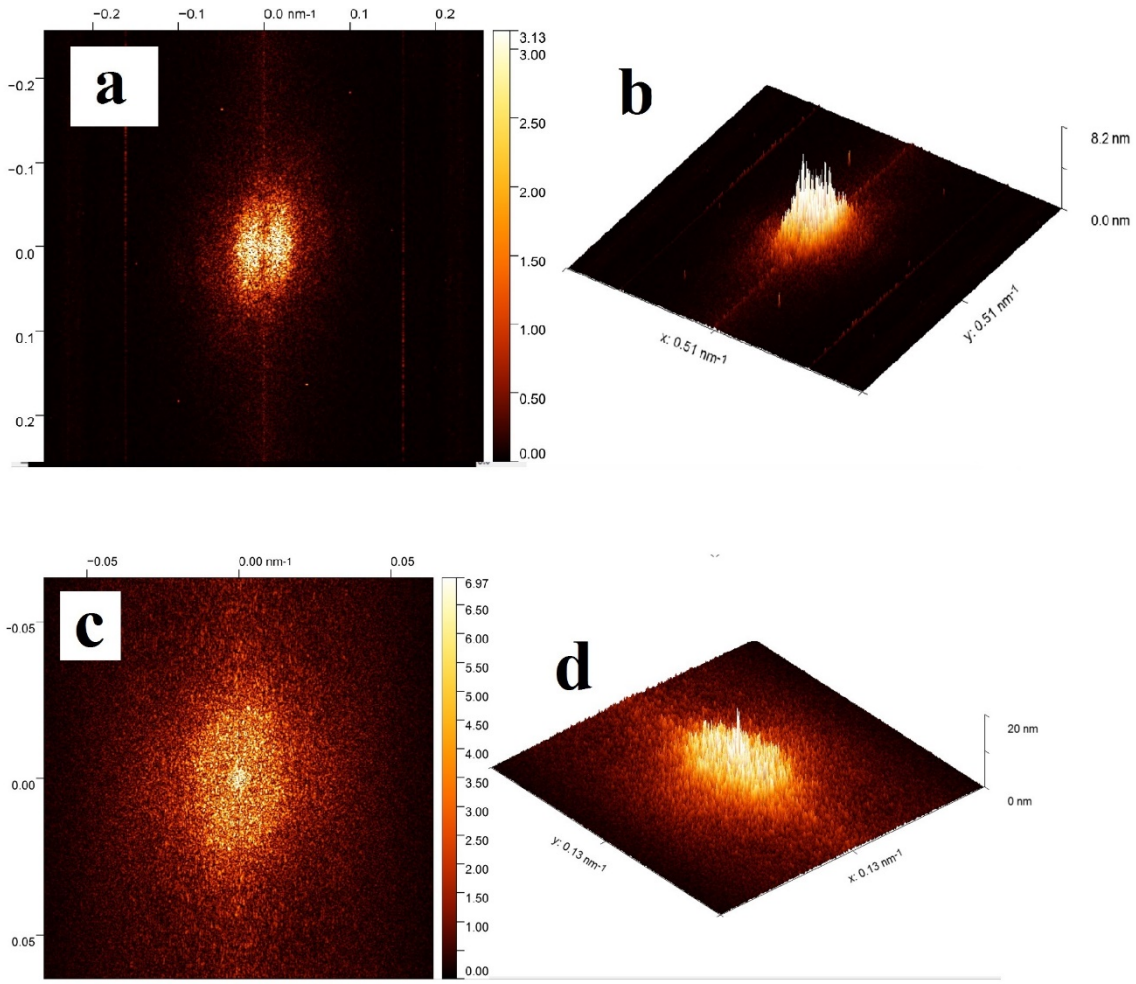

Figure. S2. (a) 2D-FFT modulus and (b) 3D-FFT modulus for pure CuSCN, (c) 2D-FFT modulus and (c) 3D-FFT modulus for 1%Y(III)-CuSCN describing the height distribution of particles over silicon substrates

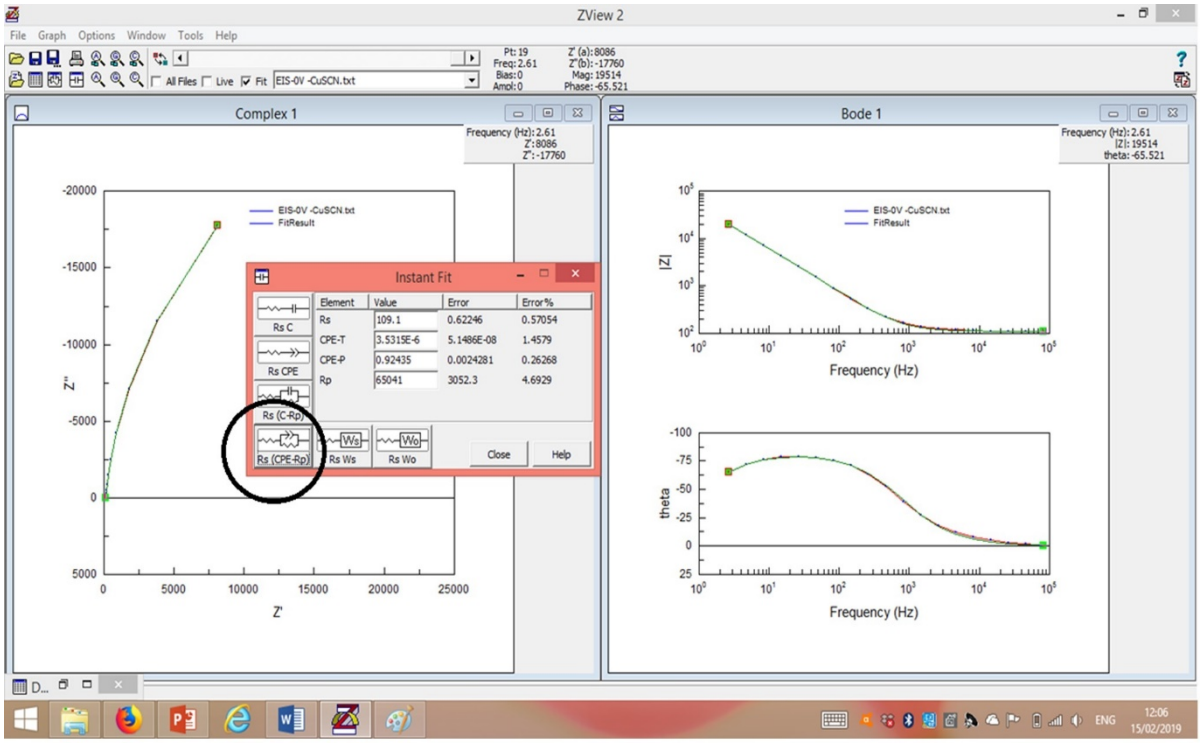

Figure.S3. Data (a) Nyquist plot, (b) and (c) bode plots are overlaid with simulated data of encircled Randles circuit and data (d) for pure CuSCN film.

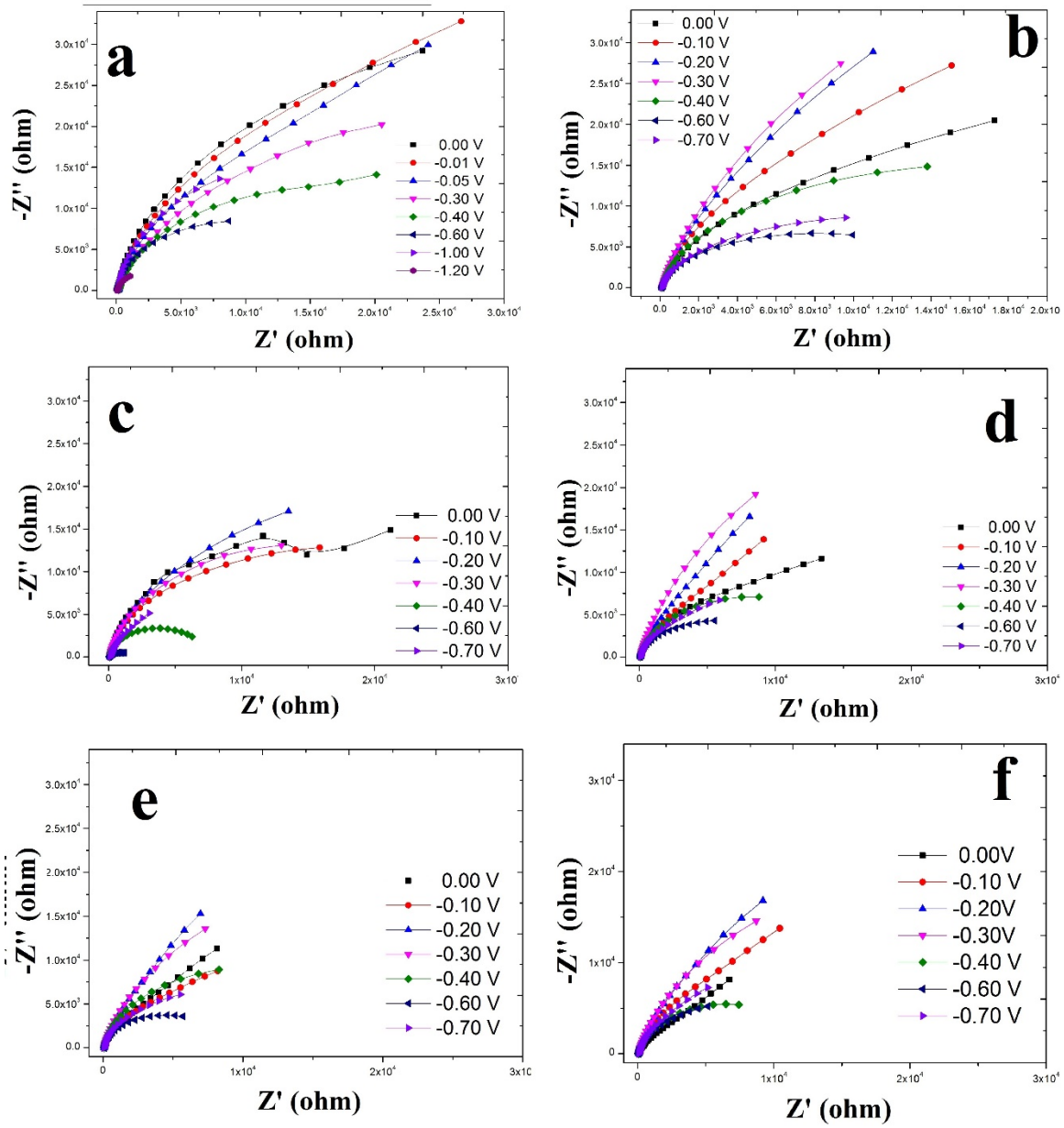

Figure.S4. Plots showing effect of applied bias on impedance of (a) pure CuSCN and, (b) 0.05 %, (c) 0.10 %, (d) 0.50 %, (e) 1.00 % and (f) 2.00 % yttrium doped CuSCN.