



Fig. SI-II. Normalized SECM feedback approach curves under illumination with blue LED in different electrolytes (a) T-, and (b) Co^{2+} . Photon flux density of LED in $10^{-9} \text{ mol cm}^{-2} \text{ s}^{-1}$ (1) 2.2, (2) 6.1, (3) 6.82 (4) 11.8, (5) 13.9, (6) 19.8 (7) 22.4; $V_T = 0.05 \text{ Vs}^{-1}$, $ET = 0.7 \text{ V}$, k (a) for T- electrolyte (1) 0.13, (2) 0.12, (3) 0.11, (4) 0.109 (5) 0.086 (6) 0.081 (7) 0.052 and corresponding $k_{\text{eff}} \times 10^{-3} \text{ cms}^{-1}$ (1) 2.87 (2) 5.61 (3) 5.93, (4) 7.56 (5) 8.01 (6) 8.91 (7) 9.19 (b) for Co^{2+} electrolyte (1) 0.018 (2) 0.036, (3) 0.038 (4) 0.049 (5) 0.052 (6) 0.057 (7) 0.059 and corresponding $k_{\text{eff}} \times 10^{-3} \text{ cms}^{-1}$ (1) 1.28, (2) 2.51, (3) 2.66 (4) 3.39 (5) 3.59 (6) 3.99 (7) 4.12