



Figure S3. Enhanced charge storage capacity ($\Sigma\sigma$) in $\text{Fe}_2\text{O}_3/\text{B. megaterium}$ biofilms during prolonged cultivation. (a-b) SEM images showing structural evolution of the mineral-bacteria biofilm after (a) 1 d and (b) 7 d of co-culture, demonstrating increased microbial density and mineral surface coverage. (c) Quantitative comparison of $\Sigma\sigma$ values reveals a significant, time-dependent increase in charge storage capacity ($p < 0.001$, one-way ANOVA).