

Supplementary Materials

Table S1 Band distribution of protein secondary structures in EPS from seed sludge, NR and ZVI-NR.

samples	β -sheet (mg/L)	Random coil(mg/L)	α -helix (mg/L)	β -corner (mg/L)
Seed	0.68	0.32	0.34	0.58
NR	0.18	0.08	0.07	0.15
ZVI-NR	0.20	0	0.13	0.19

Table S2 The relative abundance of c-Cyt oxidase in both ZVI-NR and NR.

Genes description	The relative abundance in ZVI-NR	The relative abundance in NR
cytochrome c oxidase subunit II [EC:7.1.1.9]	29346	24176
cytochrome c oxidase cbb3-type subunit I [EC:7.1.1.9]	14572	14958
cytochrome bd ubiquinol oxidase subunit I [EC:7.1.1.7]	9384	9308
cytochrome c oxidase cbb3-type subunit II	11392	10320
cytochrome bd ubiquinol oxidase subunit II [EC:7.1.1.7]	8704	8846
cytochrome c oxidase subunit I [EC:7.1.1.9]	25142	20778
cytochrome c oxidase subunit III [EC:7.1.1.9]	14146	13602

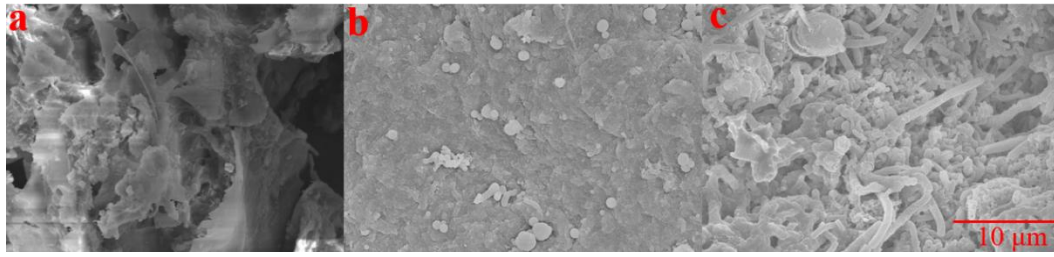


Fig. S1 The morphological characteristics of sludge samples, (a) seed sludge, (b) NR, (c) ZVI-NR.