Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Graphene Oxide Reinforced Ni-P Coatings for Bacterial Adhesion Inhibition

Wei Shao[a,*], Jimin Wu[a], Hui Liu[a], Guanghui Dong[a], Shuxia Wang[a] Huihua Min[b] and Min Huang[a]

[a]College of Chemical Engineering, Nanjing Forestry University, Nanjing 210037, P. R. China

[b]Advanced Analysis and Testing Center, Nanjing Forestry University, Nanjing 210037, P. R. China

Table S1 Bath composition and operating conditions

Compositions	Concentration
$NiSO_4 \cdot 6H_2O$	25 g/L
$Na_3C_6H_5O_7 \cdot 2H_2O$	18 g/L
$NaH_2PO_2 \cdot 2H_2O$	30 g/L
CH_3COONa	18 g/L
$(CH_2)CS$	1 ppm
PEI grafted GO	0.1-0.4 g/L

Table S2 Test liquids and their surface tension components

Surface tension (mN/m)	γ_L	γ_L^{LW}	γ_L^{AB}	γ_L^+	γ_L^-
Water (W), H_2O	72.8	21.8	51.0	25.5	25.5
Diiodomethane (D), CH_2I_2	50.8	50.8	0	0	0
Ethylene glycol (E), $C_2H_6O_2$	48.0	29.0	19.0	1.92	47.0

Table S3 Zeta potentials and diameters of *S. aureus* ATCC 6538

Bacteria	**Diameters (μm)**	**Zeta potential (mV) (1 mM)**	**Zeta potential (mV)(100 mM)**
S. aureus ATCC 6538	1.06±0.05	-21.03±0.88	-6.28±0.35

Table S4 Zeta potentials of Ni-P based coatings

Specimen	Zeta potential ζ (mV)
Ni-P	-10.0865
Ni-P-$GO_{0.1}$	-8.71
Ni-P-$GO_{0.2}$	11.525
Ni-P-$GO_{0.3}$	18.145
Ni-P-$GO_{0.4}$	23.485

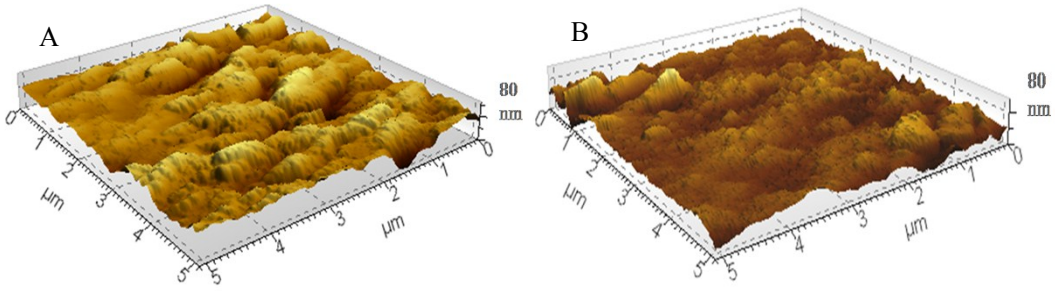

Figure S1 AFM images of Ni-P coating (A) and Ni-P-$GO_{0.4}$ coating (B).