Supplementary Material

Design of metalized polyether-ether-ketone based on semi-additive manufacture for 5G applications: From bottom-up assembly to selectively electroplating.

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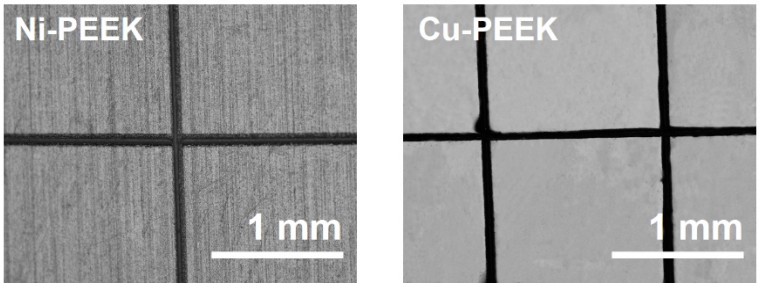


Figure S1. Optical photographs of PEEK-Ni and PEEK-Cu after 3M test.

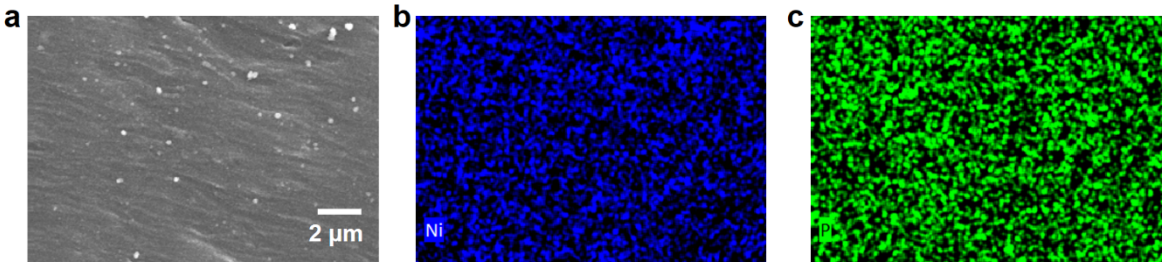


Figure S2. (a) SEM image of PEEK-Ni surface, SEM-EDX distribution of (b) nickel and (c) phosphorus.

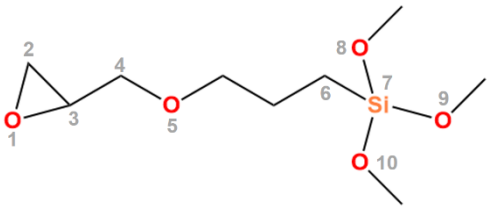


Figure S3. Molecular structure of GPTMS.

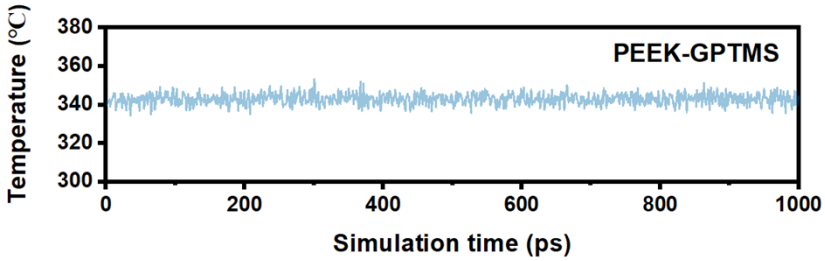


Figure S4. Temperature change along simulation time in MD simulation.

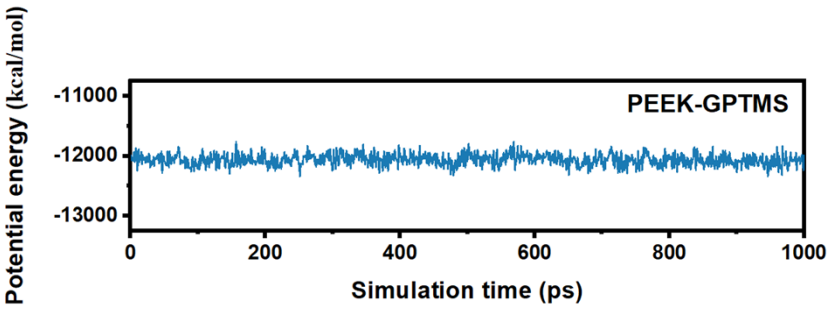
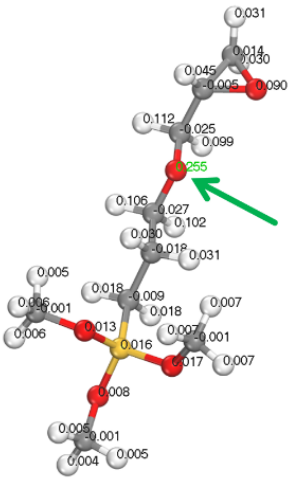


Figure S5. Potential energy change along simulation time in MD simulation.

Table S1. Composition of Ni plating bath solution

Chemical reagent	concentration
$NiSO_4 \cdot 6H_2O$	25 g/L
NaH_2PO_2	25 g/L
$Na_4P_2O_7$	50 g/L
stabilizer A	trace
surfactant B	trace
$NH_3 \cdot H_2O$	adjust pH=10~11

Table S2. Fukui functions for GPTMS structure.

Atom	f^-		f^+
O-1	0.090		0.005
C-2	0.014		0.005
C-3	-0.005		0.008
C-4	-0.025		0.002
O-5	0.255		0.000
C-6	-0.009		-0.073
Si-7	0.016		0.099
O-8	0.017		-0.035
O-9	0.008		-0.018
O-10	0.013		-0.048

Note: In the illustration, the green arrow indicates the atom with the largest electrophilic attack index, and the red arrow indicates the atom with the largest nucleophilic attack index.