Supporting information

Free-standing, anti-corrosion, super flexible graphene oxide/silver nanowire thin film for ultra-wideband electromagnetic interference shielding

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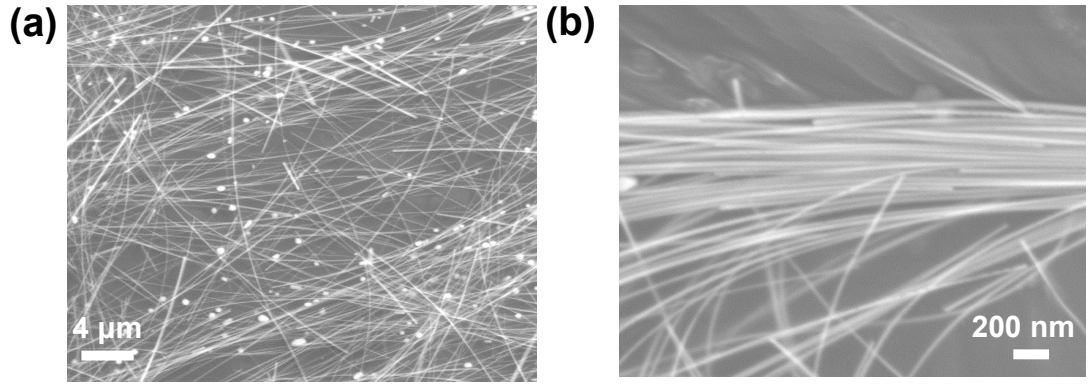

Figure S1 SEM images of Ag NWs at different magnifications (a,b).

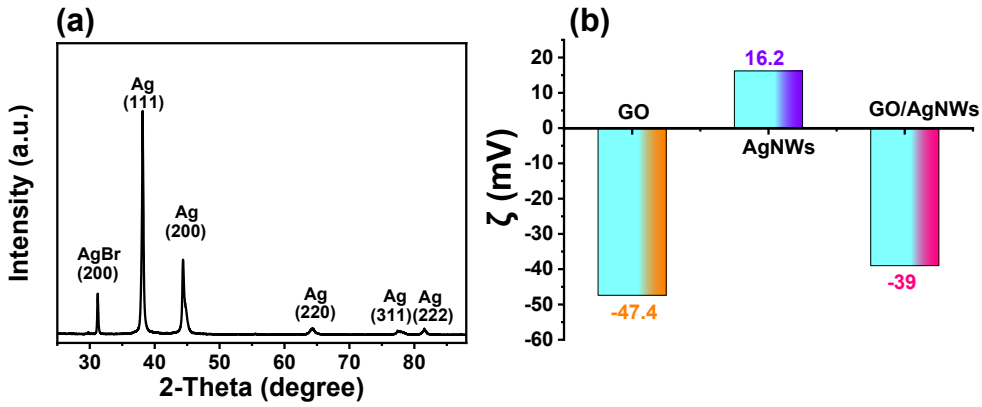

Figure S2 XRD pattern of Ag NWs (a). Zeta potential of GO solution, Ag NWs and GO/Ag NWs suspension

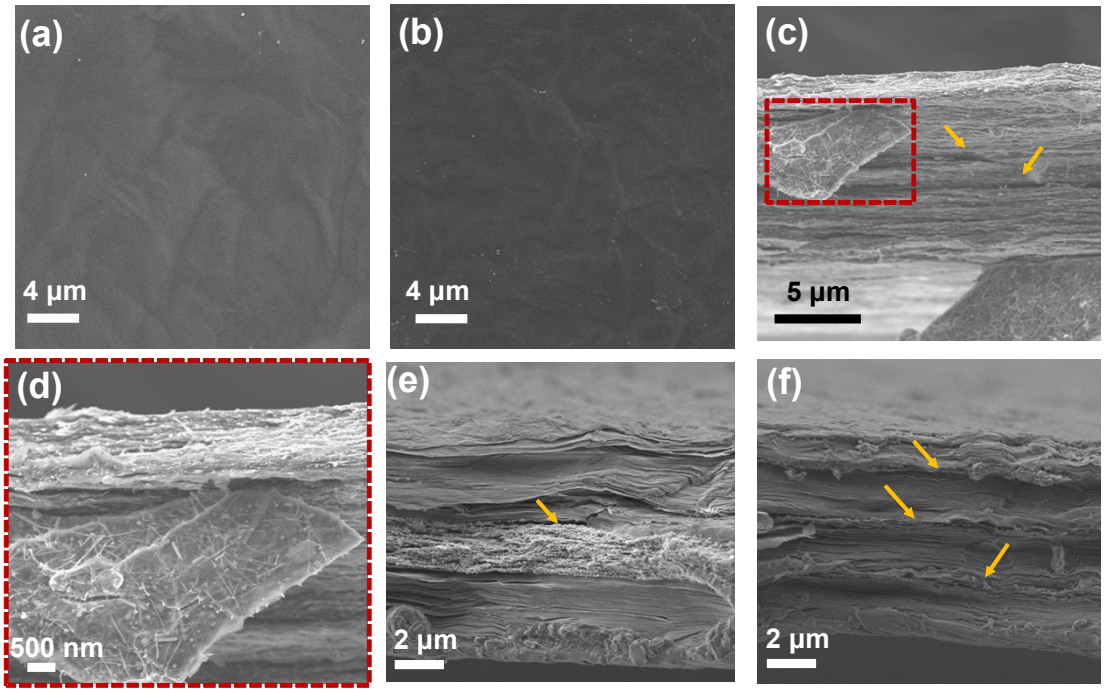

Figure S3 Surface SEM images of the GO/Ag-3L film (a) and the GO/Ag-5L film (b). Cross sectional SEM images of the GO/Ag-PM film (c,d), the GO/Ag-3L film (e) and the GO/Ag-7L film (f)

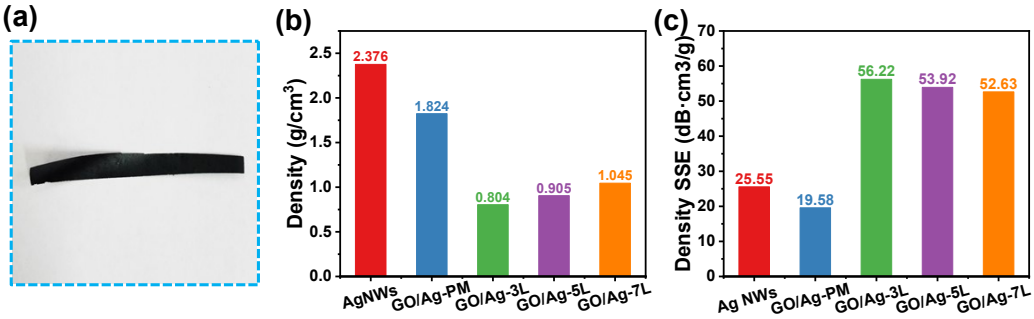

Figure S4 Digital photo of the GO/Ag-7L film (a). Density of all films (b). Density specific shielding effectiveness (SSE) of all films (c)

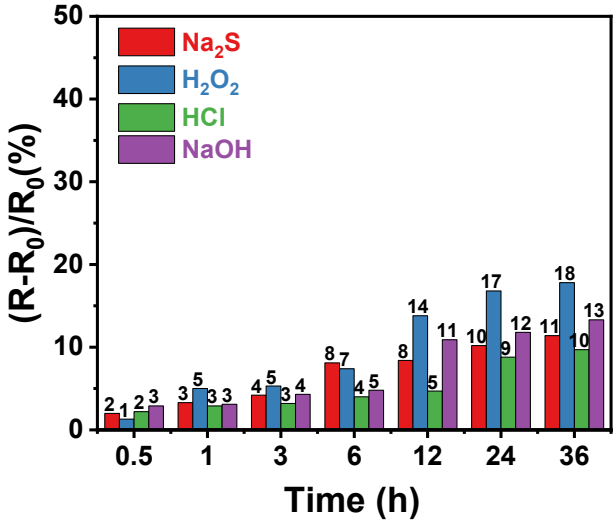

Figure S5 Resistivity change of the GO/Ag-7L film at different corrosion time

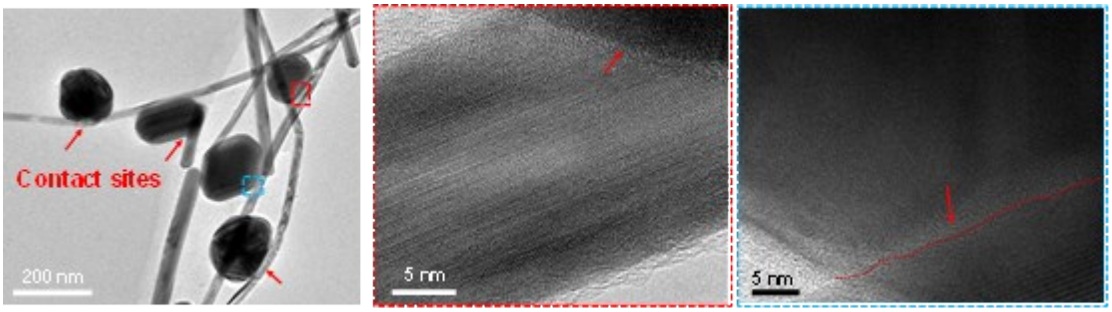

Figure S6 TEM image of contact sites between Ag NWs and Ag NPs

Table 1 XPS results of all films

Samples	GO	GO/Ag-PM	GO/Ag-3L	GO/Ag-5L	GO/Ag-7L
O/C (at%)	0.41	0.32	0.37	0.36	0.33
ΔB.E.(eV)	-	0.47	0.74	0.86	1.15

Table 2 Comparison of the EMI shielding performance and thickness of the reported film with the other materials

Samples	**EMI SE (dB)**	**Thickness (μm)**	**EMI SE/t (dB/mm)**	**References**
ANF-Mxene/AgNWs paper	48.1	4500	10.69	[21]
AgNWs@C foam	70.1	3000	23.37	[8]
Graphene/AgNWs	34.1	2000	17.05	[22]
Mxene/AgNWs film	49.2	125	393.60	[17]
MWCNTs/AgNWs-PVDF	70.0	1174	59.63	[23]
rGO/AgNWs	24.0	100	240.00	[24]
PANI/AgNWs films	50.0	13	3846.15	[25]
MWCNT/cellulose/Ag NWs film	23.8	154	154.55	[26]
graphene/AgNWs film	38.5	30	1283.33	[27]
PEI/PA/AgNWs	33.0	640	51.53	[28]
graphene/AgNWs/ghrphene	38.0	10	3800.00	[29]
Cellulose/AgNWs	48.6	154	315.58	[30]
Textile/AgNWs	51.5	600	85.83	[31]
Mxene/AgNWs Film	54.0	120	450.00	[32]
Ti3C2Tx/g-C3N4	42.99	28.2	1524.45	[9]
Chitosan/MXene	34.7	37	937.84	[42]
MXene/natural rubber	47.8	65.6	728.66	[10]
Montmorillonite/MXene	65	25	2600	[13]

MXene/Silver Nanowire	32	10	32000	[45]
Polyurethane/CNTs	35.9	2000	17.95	[46]
CNTs/boron nitride/rubber	31.38	1400	22.4	[47]
GO/AgNWs/GO	62	8	77500	This work