Bioinspired Design and Assembly of Platelet Reinforced Polymer Films with Enhanced Absorption Properties

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Fig. S1 SEM image of in situ Nano indentation test.



Fig. S2 The photograph of the CuS/PVDF film.



Fig. S3 The tensile strength with irregular structure composites.

Filler					
content	0.05	0.10	0.15	0.20	PS
Testing					
times	\	946000.00	30000.00	20.20	kΩ
Testing					
times	\	892000.00	30000.00	21.80	kΩ
Testing					
times	\	950000.00	32000.00	21.60	kΩ
Testing					
times	\	984000.00	32000.00	20.40	kΩ
Testing					
times	\	874000.00	30000.00	20.00	kΩ
Average					
value	\	929200.00	30800.00	20.80	kΩ
Thickness	1.21	1.31	1.31	1.32	cm
Square	2.47	2.47	2.47	2.47	cm2
Electrical					
resistivity	Δ.	174987.51	5800.27	3.89	Ω·mm
Electrical					
Condictivity	\	5.71E-09	1.72E-07	2.57E-04	S/m

Table S1 The relation between the electrical conductivity and the filler content



Fig. S4 The dielectric loss of different samples.



Fig. S5 Microwave RL curves of the composites with irregular structure composites.



**Fig. S6**  $\varepsilon' - \varepsilon''$  curves of CuS/PVDF composites with a loading of (a) 5 wt. %; (b) 10 wt. %; (c) 15 wt. % and (d) 20 wt. %.