

## SUPPORTING INFORMATION

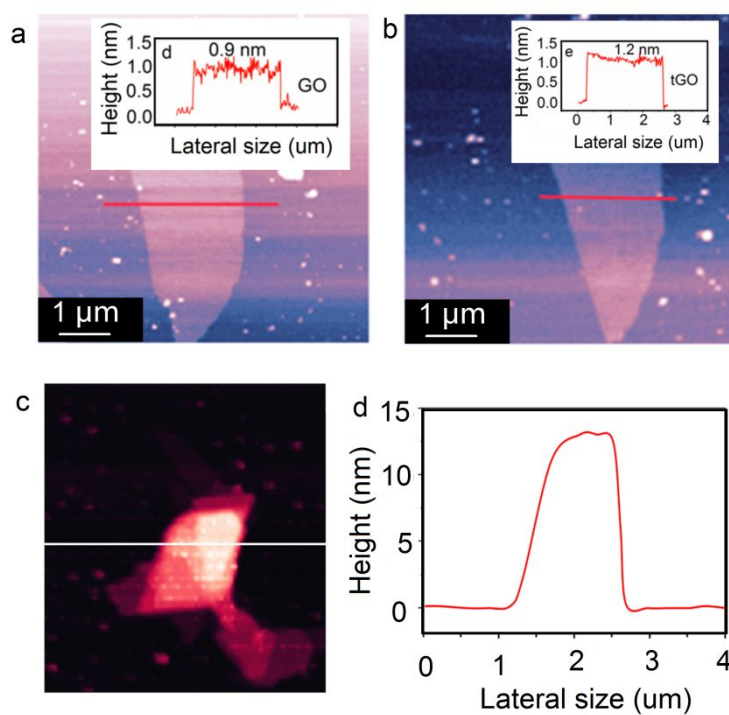
### Bioinspired Smart Anticorrosive Coatings with an Emergency-Response Closing (ERC) Function

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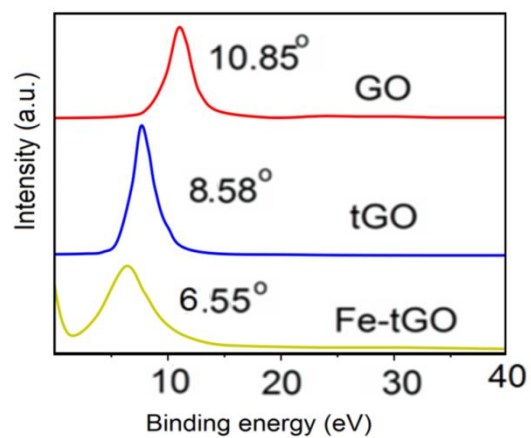
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**Table S1.** Elemental composition (wt.%) of the Q235 CS electrodes.

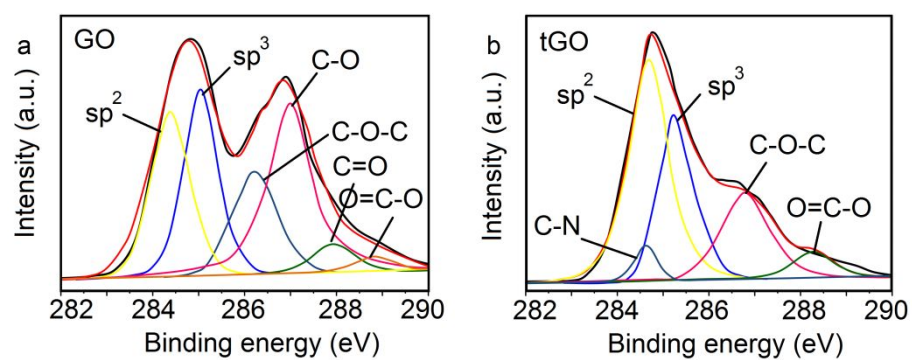
<i>Cr</i>	<i>Si</i>	<i>Mn</i>	<i>O</i>	<i>B</i>	<i>C</i>	<i>Fe</i>
0.02	0.23	0.42	0.46	0.55	5.62	Bal



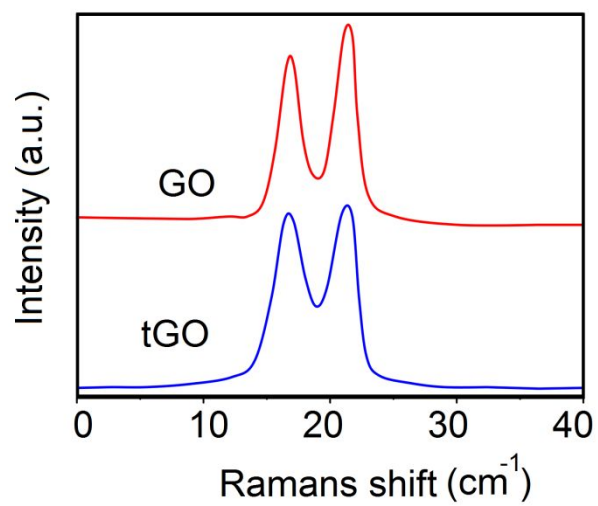
**Figure S1.** AFM images of GO (a), tGO (b) and Fe-tGO (c and d).



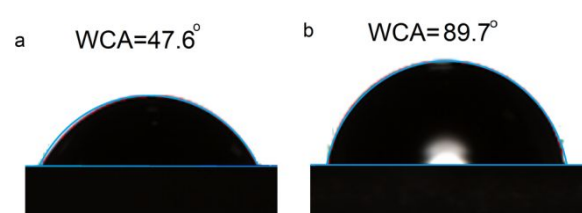
**Figure S2.** XRD spectra of GO, tGO, and Fe-tGO samples, respectively.



**Figure S3.** The high-resolution C 1s spectra of GO (a) and tGO (b).



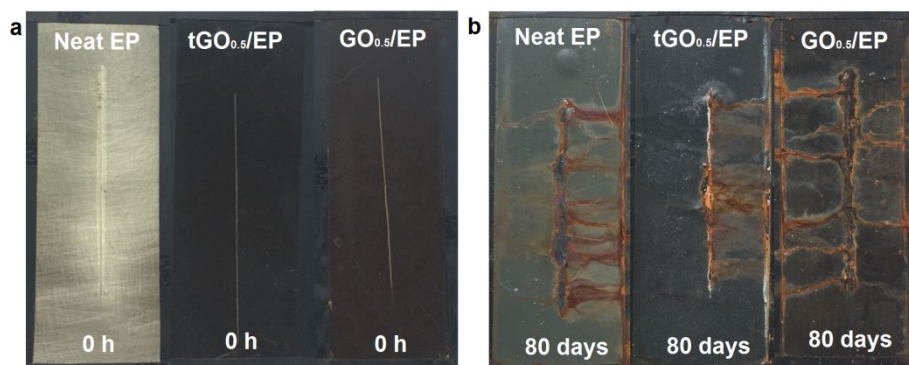
**Figure S4.** Raman spectra of GO and tGO.



**Figure S5.** The WCAs on the EP were  $47.6 \pm 1.9^\circ$  (a), smaller than that on tGO/EP which was  $89.7 \pm 2.4^\circ$  (b) at room temperature ( $25^\circ \text{C}$ ).

**Table 2.** Comparison with other similar reported work.

S. no.	Nanofiller polymer coating	Thickness ( $\mu\text{m}$ )	Immersion time	Impedance ( $\text{ohm cm}^2$ )	Ref.
<b>1</b>	<b>tGO epoxy</b>	<b>20</b>	<b>60 days</b>	<b><math>\sim 10^{10}</math></b>	<b>Current work</b>
2	Aniline trimer (AT) functionalized graphene sheets (SAT-G) epoxy	50	75 days	$\sim 10^8$	1
3	Noncovalently functionalized graphene with poly(o-phenylenediamine) nanoparticles epoxy	50	60 days	$\sim 10^{10}$	2
4	Graphene oxide (GO) epoxy	20	15 days	$\sim 10^6$	3
5	Noncovalently functionalized graphene with poly(2-butylaniline) (P2BA) epoxy	20	80 days	$\sim 10^8$	4
6	Functionalized graphene oxide (rGO) with (3-aminopropyl)-triethoxysilane (APTES) PVB	97	7 days	$\sim 10^8$	5
7	Functionalized graphene oxide (rGO) with $\text{SiO}_2$ (APTES) PVB	83	7 days	$\sim 10^8$	6
8	Fluorographene (FG) epoxy	58	25 days	$\sim 10^9$	7



**Figure S6.** Digital photos of samples after neutral salt spray test before (a) and after (b) 80 days exposure.



Reference:

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