

Supplementary Materials: Facile In situ Growth of Zif-8 Nanosheets with Enhanced Anti-Corrosion Performance for Carbon Steel in Seawater

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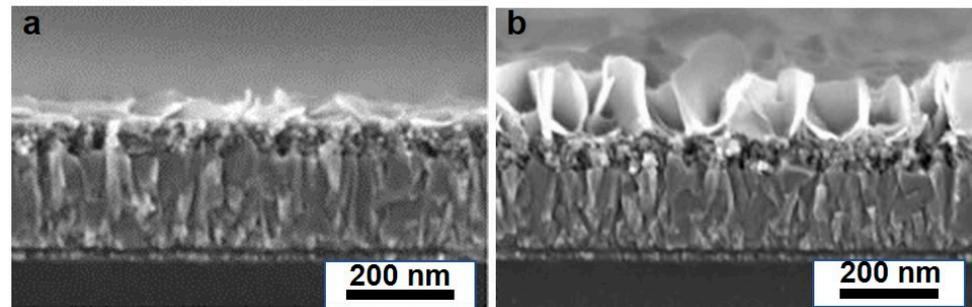


Figure S1. Cross sectional SEM images of the uncoated carbon steel (a) and Zif-8 coating sample (b) before immersed in seawater.

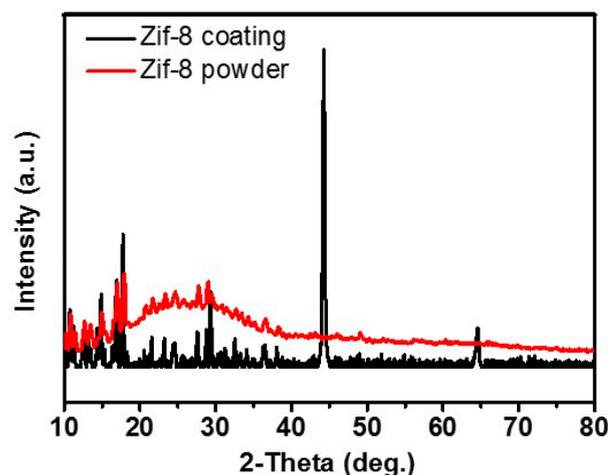


Figure S2. XRD patterns of the Zif-8 powder (red curve) and Zif-8 coating sample (black curve). As seen, the peaks from 10° to 40° can be ascribed to the Zif-8 phase (JPCDS #062-1030).

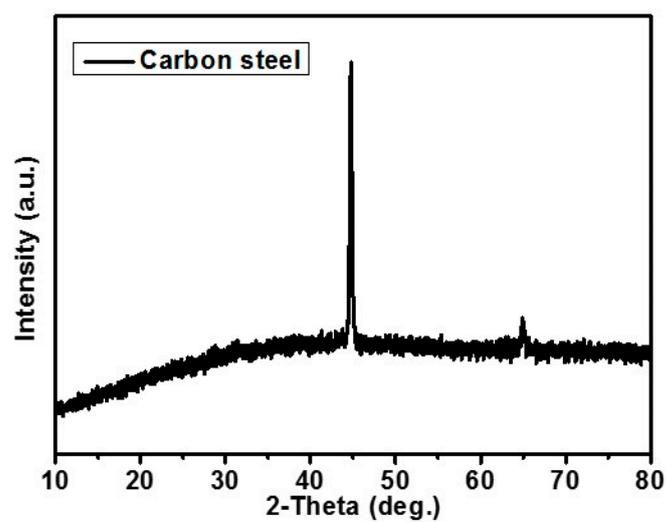


Figure S3. XRD pattern of the carbon steel support.

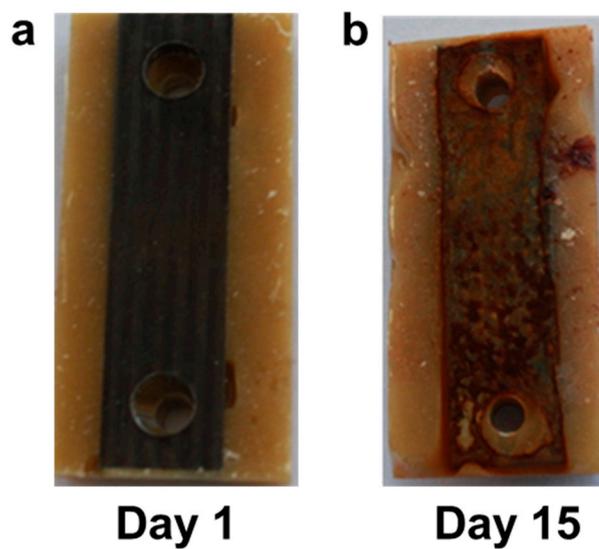


Figure S4. Photographs of the blank sample in seawater with different days.

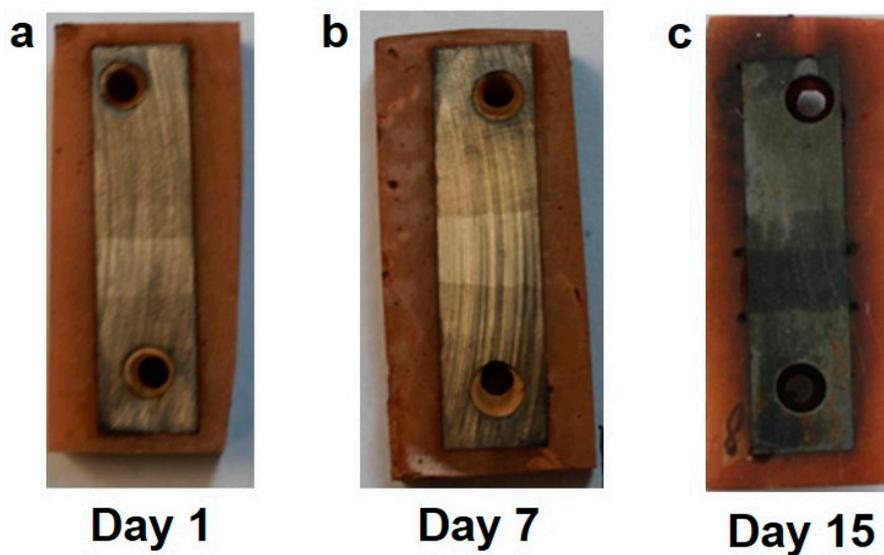


Figure S5. Photographs of the Zif-8 coating sample in seawater with different days.

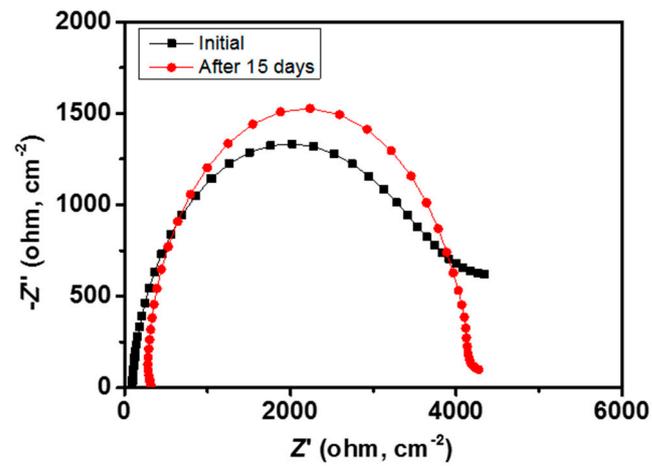


Figure S6. EIS spectra before and after long-term immersion in seawater.

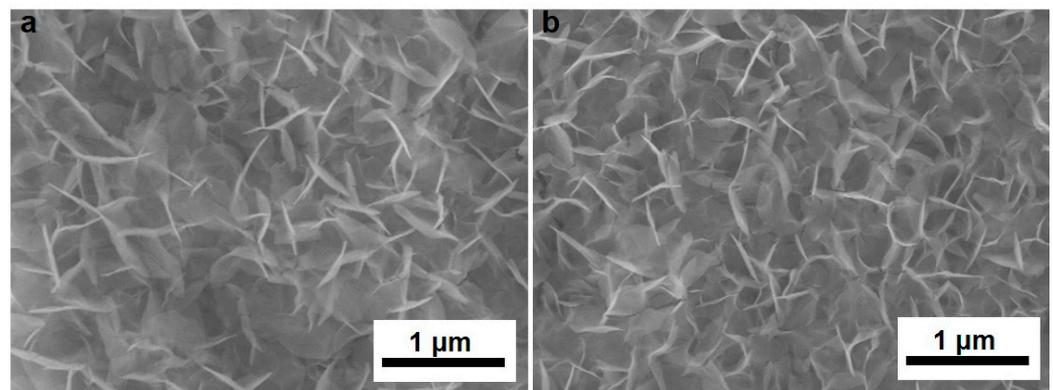


Figure S7. SEM images of the Zif-8 coating sample immersed in seawater with 7 days (a) and 15 days (b).

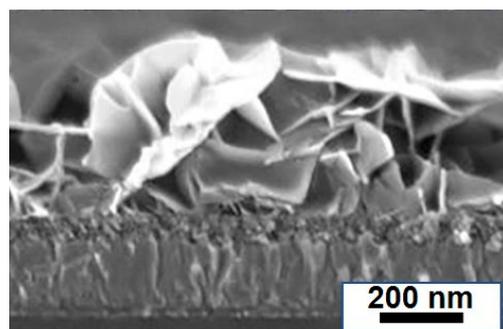


Figure S8. Cross sectional SEM image of the Zif-8 coating sample after immersed in seawater for 15 days. we speculate that some Zif-8 nanosheets seemed to fall away from the carbon steel during the long-term immersion test and then covered on the surface of Zif-8 coating film.

Table S1. The value of equivalent circuits for curve fitting of uncoated and Zif-8 coating samples.

| - | R_s ($\Omega\cdot\text{cm}^{-2}$) | R_p ($\Omega\cdot\text{cm}^{-2}$) | L ($\Omega\cdot\text{cm}^{-2}$) |
|---------------|---------------------------------------|---------------------------------------|-------------------------------------|
| Blank | 30 | 2235 | 50 |
| Zif-8 coating | 70 | 4010 | 12 |