Study on corrosion, hydrogen permeation, and stress corrosion cracking behaviours of AISI 4135 steel in the tidal zone

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Supplementary Figures

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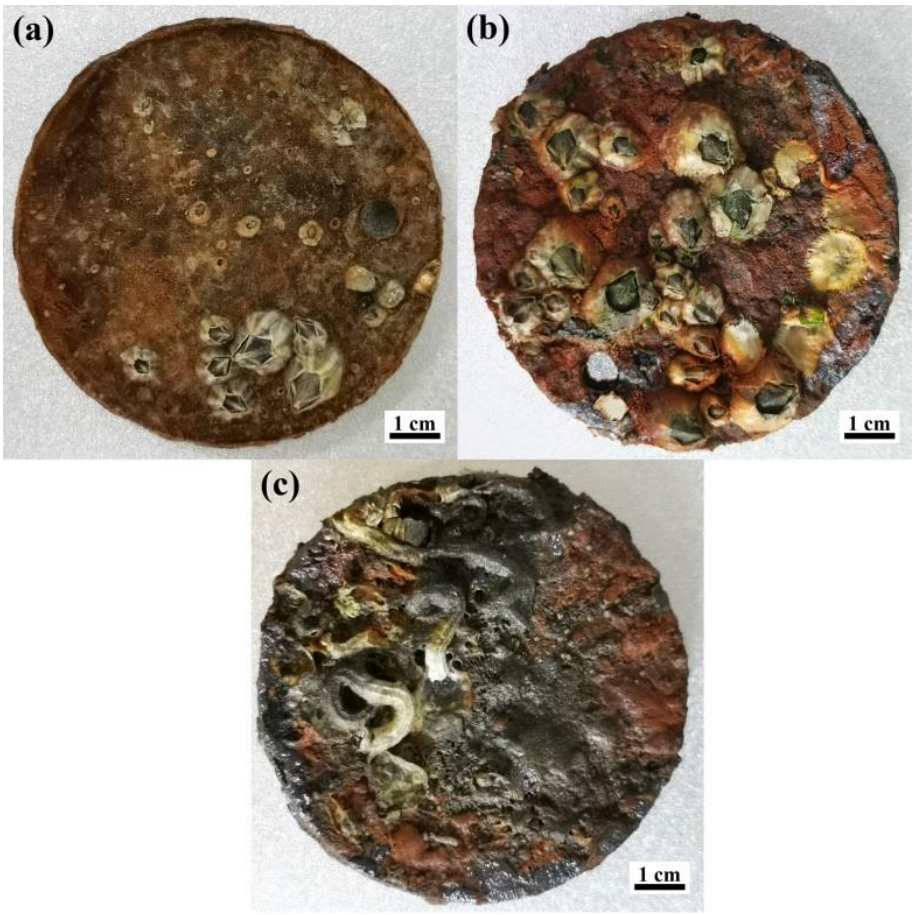
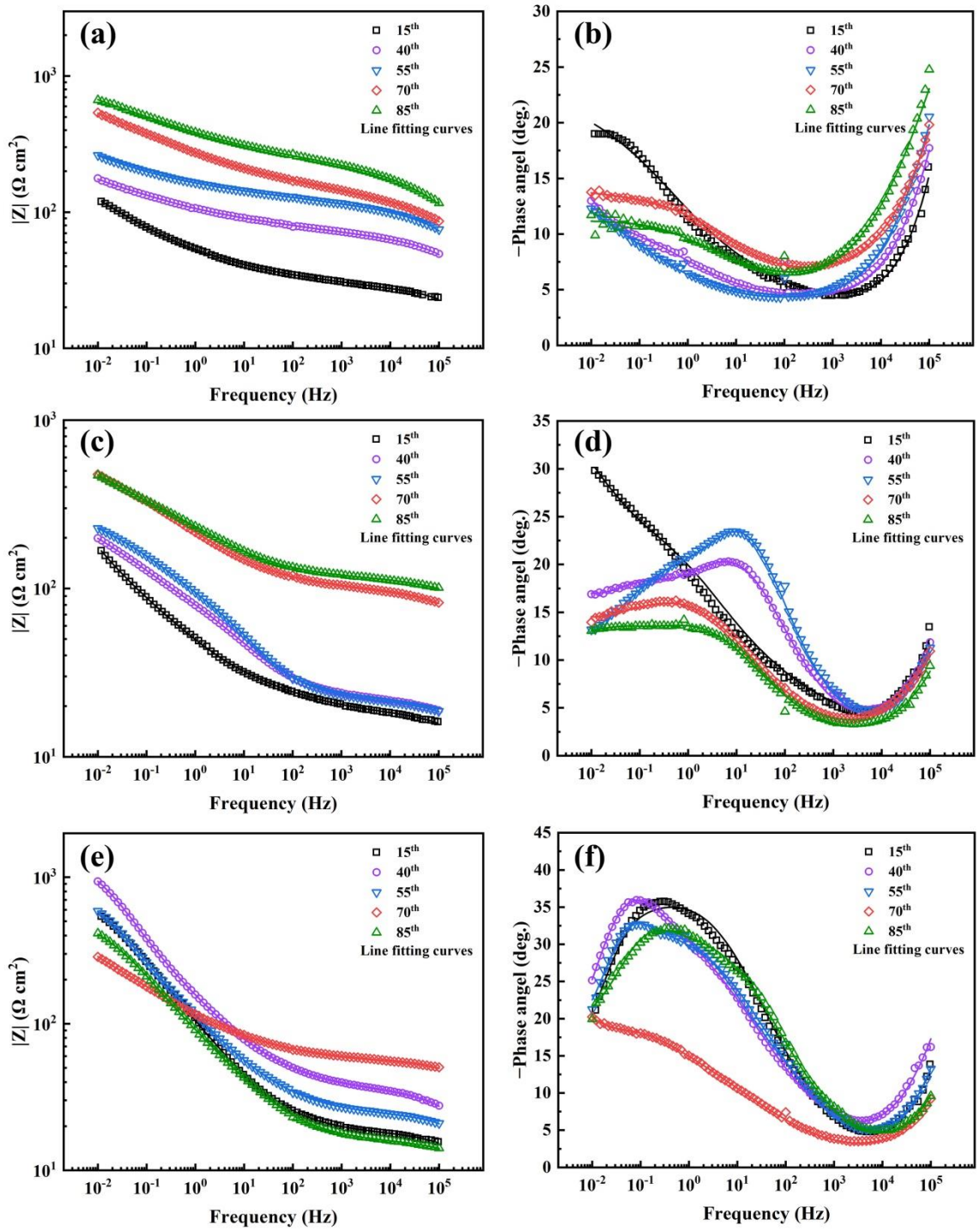
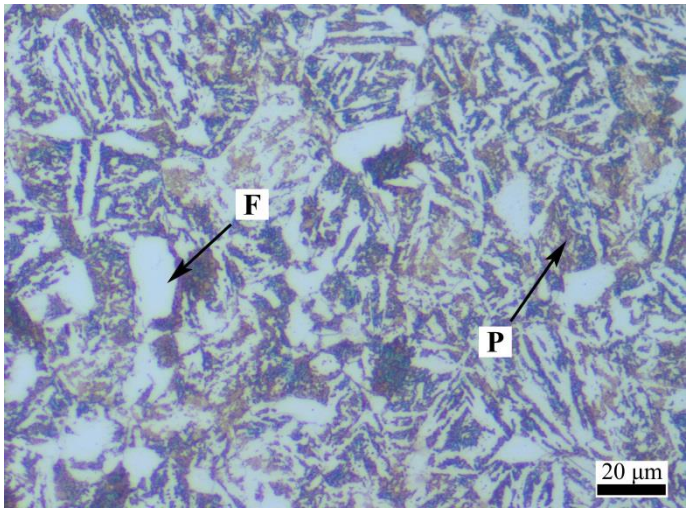


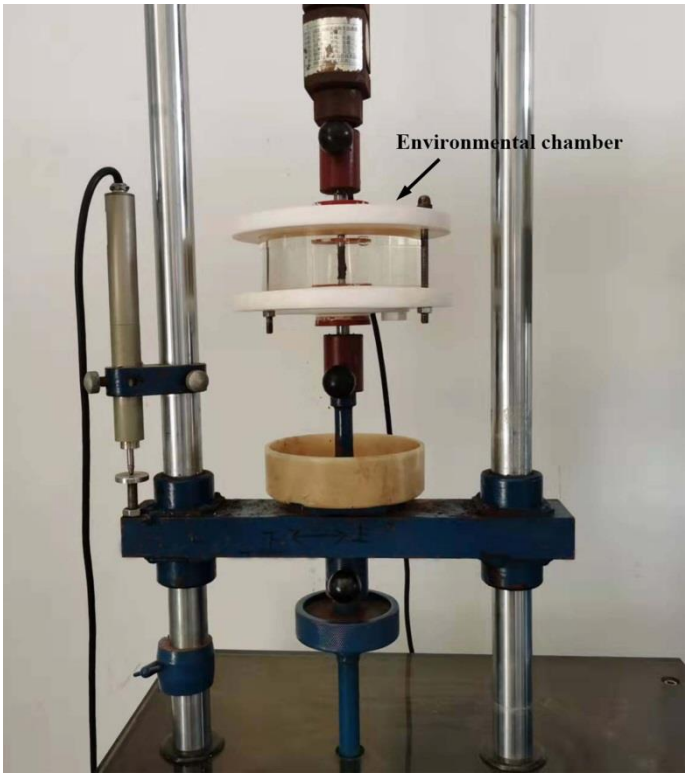
Supplementary Figure 1. Morphologies of the corrosion coupons placed at the (a) HTL, (b) MTL, and (c) LTL (after 3 months).



Supplementary Figure 2. Modulus and phase angles of the AISI 4135 steel samples after exposure to the (a, b) HTL, (c, d) MTL and (e, f) LTL for various periods.



Supplementary Figure 3. Microstructure of the AISI 4135 high-strength steel: F—Ferrite, P—Pearlite. (A sample of 10 mm diameter, 10 mm height was ground with a series of silicon carbide papers (up to 1000 grade) and then polished with a 1.5 micron diamond abrasive. Subsequently, the sample was etched in a nital etchant (4% nitric acid and 96% anhydrous alcohol) for 8 s, treated with deionized water and alcohol, and finally dried in a warm air stream.)



Supplementary Figure 4. Instrument and environmental chamber used for SSRT.