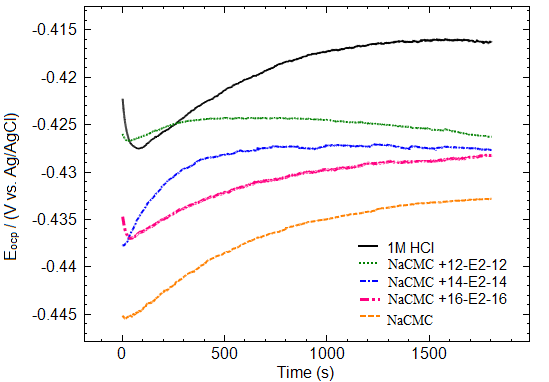
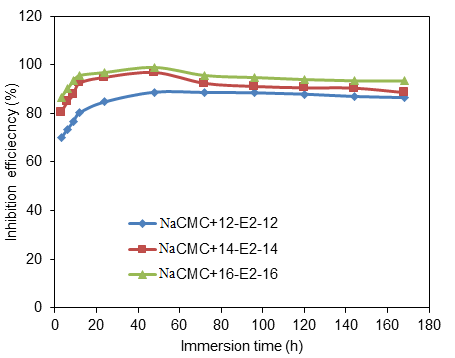
**SUPPLEMENTARY INFORMATION**

**Figure Captions**

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| Fig. S1. | *E*OCP-time curves for MS in uninhibited and inhibited 1M HCl solution. |
| Fig. S2. | Effect of immersion time on the inhibition performance of optimum concentration of NaCMC/m-E2-m system at 30 °C. |
| Fig. S3. | Langmuir adsorption isotherm plots for MS in 1M HCl solution containing various concentrations of studied inhibitors at 30 °C. |
| Fig. S4. | PP curves for MS in 1M HCl solution without and with different concentrations of (a) NaCMC (b) NaCMC+1ppm 12-E2-12 (c) NaCMC+1ppm 14-E2-14. |
| Fig. S5. | Nyquist and Bode curves for MS in 1M HCl solution without and with different concentrations of (a) NaCMC (b) NaCMC+1ppm 12-E2-12 (c) NaCMC+1ppm 14-E2-14. |
| Fig. S6. | Equivalent circuit model used to fit the impedance measurement data for MS in 1M HCl. |
| Fig. S7. | FT-IR spectra of pure NaCMC, pure 16-E2-16, and adsorbed Fe-NaCMC, Fe-16-E2-16 and Fe-NaCMC/16-E2-16. |
| Fig. S8. | SEM images of the MS after 6 h immersion in 1M HCl solution: (a) Polished surface (b) in 1M HCl, (c) in 1M HCl solution with NaCMC (d) NaCMC+12-E2-12 (e) NaCMC+14-E2-14 (f) NaCMC+16-E2-16. |
| Fig. S9. | Side and top view of the final adsorption of 12-E2-12, 14-E2-14, 16-E2–E2 and NaCMC on the Fe(110) surface in solution. |



**Fig. S1.**

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**Fig. S2.**

**Fig. S3.**

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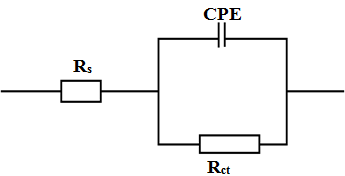
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**Fig. S4.**

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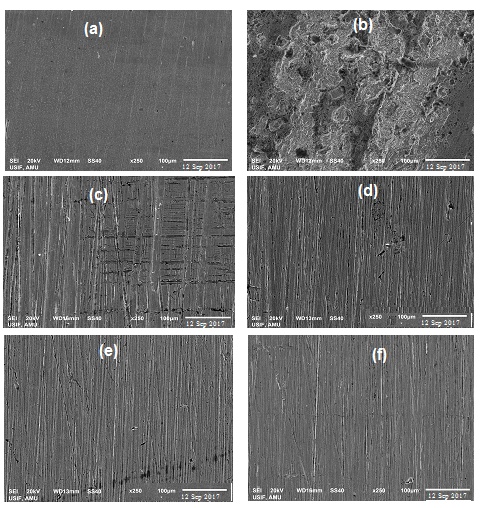
**Fig. S5.**



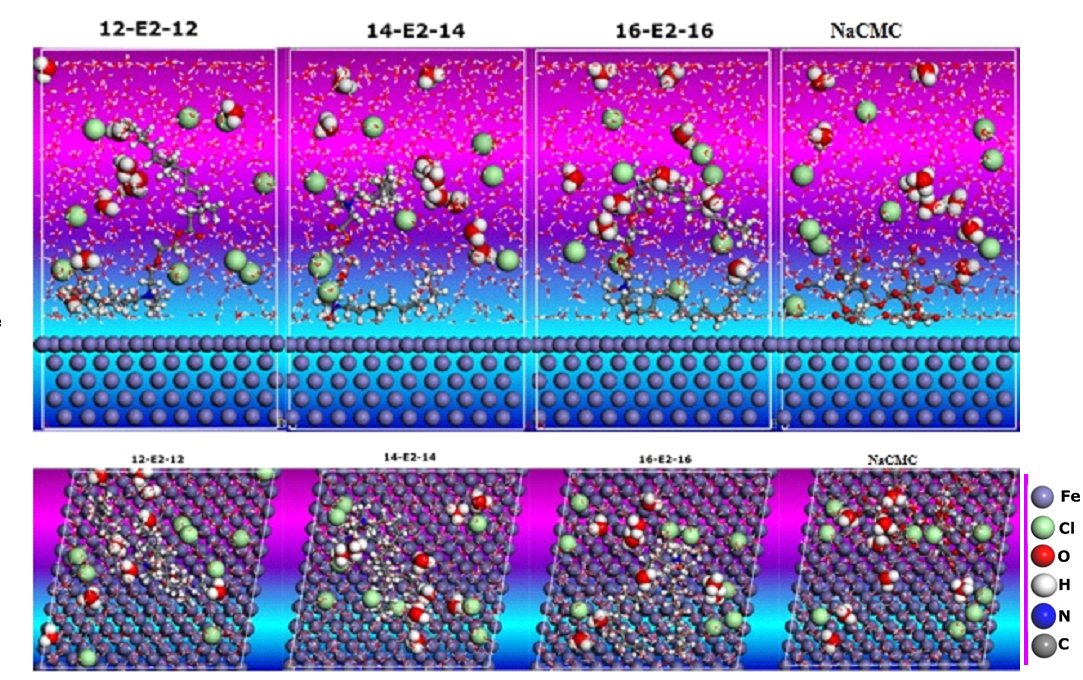
**Fig. S6.**

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**Fig. S7.**



**Fig.** **S8.**



**Fig. S9.**