

Supplementary Information

## Synthesis and application of corrosion inhibitor for hydrogen sulfide corrosion of steel

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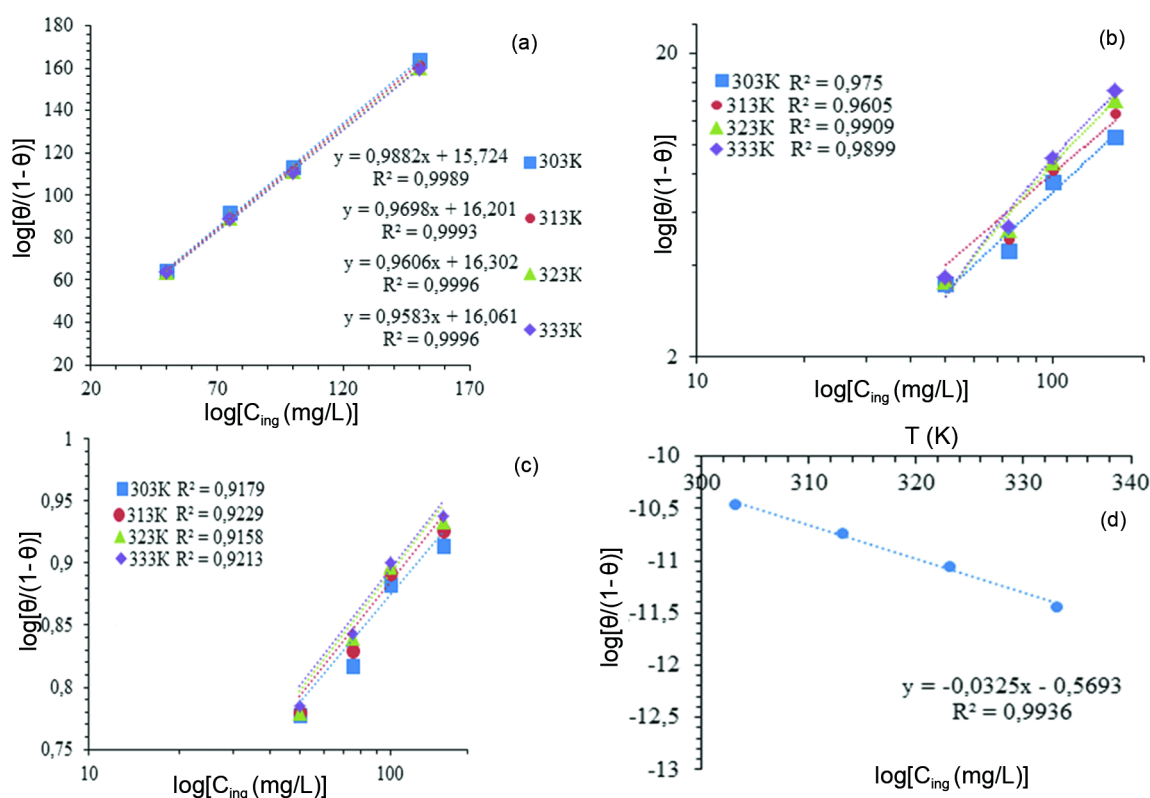


Fig. S1 — (a) Langmuir, (b) Frumkin, (c) Temkin isotherms and (d) temperature dependence of  $\Delta G^0_{ads}$

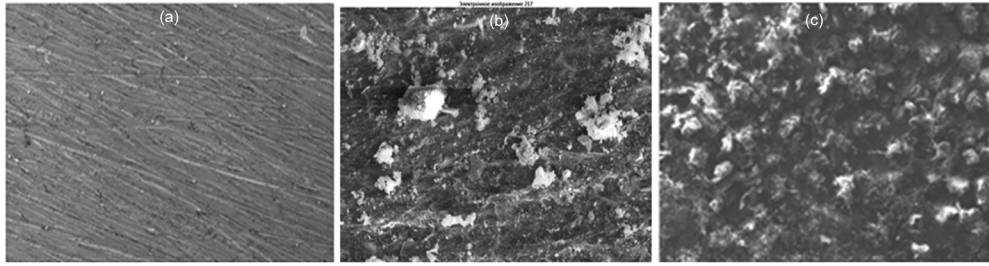


Fig. S2 — SEM micrographs of the surface of steel St20 in the (a) initial sample, (b) with inhibitor, and (c) without inhibitor solutions

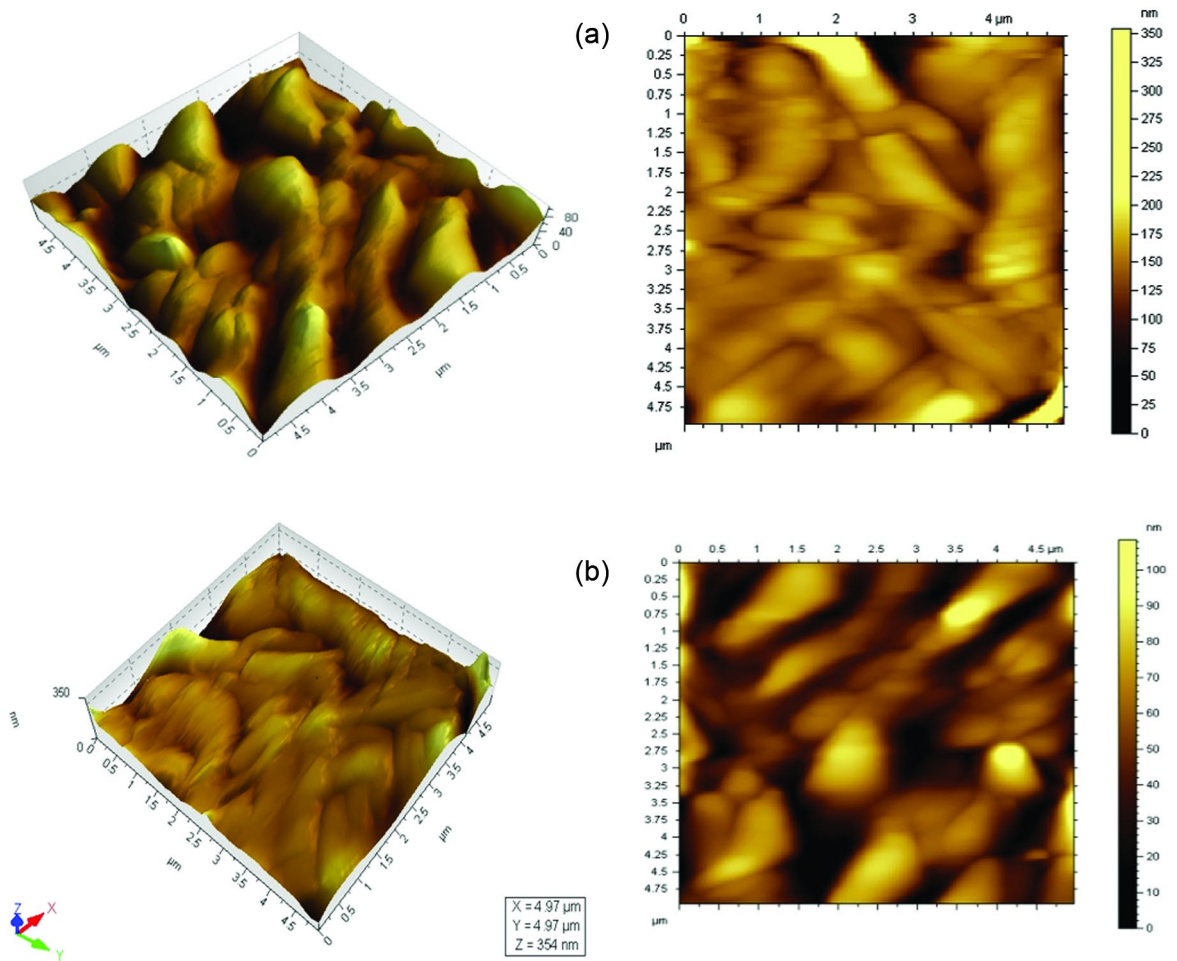


Fig. S3 — AFM images of St20 steel sample in OW+ H<sub>2</sub>S (400 mg/L) solution (a) without inhibitor and (b) with PKA-1(150 mg/L) inhibitor