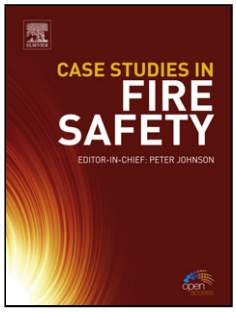

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The synergistic inhibition behaviour of tannic acid and iodide ions on mild steel in H_2SO_4 solutions

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Highlights

- The corrosion rate of mild steel is reduced upon the addition of tannic acid
- The inhibition efficiency of tannic acid is greatly enhanced in presence of I^-
- The thickness of the inhibitors layer increases with increasing immersion time
- The mixture of tannic acid and I^- can provide a long term protection for mild steel

Abstract:

The synergistic effect of tannic acid and I^- in H_2SO_4 solution has been studied through electrochemical impedance spectroscopy, potentiodynamic polarization curves, immersion tests, weight loss tests, and scanning electron microscopy in present work. The results show that tannic acid and iodide ions have an obvious synergistic inhibiting effect in H_2SO_4 solution. SEM images indicate that the absorbed