The influence of an eco-friendly antibiotic as anti-scalant and inhibitor for steel in gypsum solution and brine water

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\textbf{ABSTRACT}

The influence of sulfamerizine (SMZ) drug as anti-scalant in water containing 0.7 M Gypsum salt (CaSO\textsubscript{4}) and brine water (0.7 M) has been studied by weight loss, potentiodynamic polarization and A.C impedance measurements. The formation of protective layer of SMZ was justified by chronoamperometry technique. Quantum chemical methods confirmed the absorption of anti-scalant on steel. SEM photographs evidenced the formation of stable anti-scalant film on steel in presence of gypsum salt water and brine water.

\textit{Keywords:} Anti-scalants; Corrosion; Polarization; Salt water