Extraction of green inhibitor and study of their antioxidant effectiveness of ecologicalcorrosion

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Abstract : Several methods are available to prevent or retard corrosion ofmetallic materials, the use of inhibitors is one of the besttechnique to ensure their protection in contact with aggressivemedia such as hydrochloric acid medium. The environmentaltoxicity of organic corrosion inhibitors has prompted thesearch for green corrosion inhibitors as they are biodegradable,do not contain heavy metals or other toxic compounds. As inaddition to being environmentally friendly and ecologicallyacceptable, plant products are inexpensive, readily availableand renewable. The objective of this work is the extraction oflimonene from orange peels and study their effectiveness onthe corrosion of X42 steel in HCl medium. The analysis ofinhibitor was evaluated by chemical methods, and theelectrochemical study shows that the addition of limonene tothe medium induces a reduction in the corrosion rate of thesteel in HCl medium. Other parameters may influence itsinhibitory activity such as immersion time, concentration ofinhibitor, the nature of media (acidic or basic).

Keywords : Metal and alloys; Acid medium; corrosion inhibitors; Green inhibitors; limonene