## Natural extract of Opuntia ficus indica as green inhibitor for corrosion ofXC52 steel in 1M H3PO4

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**Abstract:** The purpose of this study is to evaluate the anti-corrosive effect of natural extract of Opuntia Ficus Indica (O.F.I) for XC52steel in 1M H3PO4. Experimental work has been achieved by weight loss, potentiodynamic polarization and EISmeasurement, as well as SEM surface characterization. Among the results obtained, we can mention an inhibitory efficiency of 90% by gravimetric method and 83.9% by electrochemical method at 10% (v/v) of O.F.I. Moreover, The O.F.I extract actsas a mixed inhibitor; however, adsorption free enthalpy indicates a physisorption. The adsorption obeys the Langmuirisotherm model. These results have been improved by SEM micrographs

Keywords : corrosion, Opuntia ficus indica, EIS, green inhibitor, XC52 steel