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## *Ziziphus Jujuba* Leaves as Corrosion Inhibitor for Mild Steel in 0.5M H<sub>2</sub>SO<sub>4</sub>

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**Abstract:** The inhibitive nature Ziziphus Jujuba leaves (ZJL) on the corrosion of Mild steel in  $0.5M H_2SO_4$  has been examined by weight loss method and polarization technique. The acid extract of ZJL brought out a maximum inhibition of 99.08%. The extract was temperature resistant in nature and the inhibition efficiency was found to be 92.82% at 353° C. The results obtained were fit into Langmuir and Temkin adsorption. Thermodynamic parameters were also calculated.

Keywords: Inhibitor, Acid extract, Ziziphus Jujuba, Mild steel.

## REFERENCES

- [1]. Vimala, J. R., Rose, A. L., & Raja, S. (2012). A study on the phytochemical analysis and corrosion inhibition on mild steel by Annonamuricata L. leaves extract in 1 N hydrochloric acid. *Der ChemicaSinica*, 3(3), 582-588.
- [2]. Kesavan, Devarayan, MayakrishnanGopiraman, and NagarajanSulochana. "Green inhibitors for corrosion of metals: a review." *Chem. Sci. Rev. Lett* 1.1 (2012): 1-8.
- [3]. Battistin, A. Alcoholic extract mint is used as a low carbon steel corrosion inhibitor inaqueous medium. J. Solid State Electrochem. 2012, 16, 747-752.
- [4]. Verma, C.; Quraishi M.A.; Ebenso E.E.; Bahadur I. A green and sustainable approach for mild steel acidic corrosion inhibition using leaves extract: Experimental and DFT studies. *J.Bio-and Tribo-Corrosion* **2018**, 4, 33-45.
- [5]. Dhaundiyal, P., Bashir, S., Sharma, V., & Kumar, A. (2019). An investigation on mitigation of corrosion of mildsteel by Origanumvulgare in acidic medium. *Bulletin of the Chemical Society of Ethiopia*, 33(1), 159-168.
- [6]. Abdel-GaberAM, Masoud MS, Khalil EA, Shehata EE (2009) Electrochemical study on the effect of Schiff base and its cobaltcomplex on the acid corrosion of steel. Corros Sci 51:3021–3024
- [7]. Lebrini M, Robert F, Lecante A, Roos C (2010) Corrosion inhibition of C38 steel in 1 M hydrochloric acid medium by alkaloids extract from Oxandraasbeckii plant. Corros Sci53(2):687–695. doi:10.1016/j.corsci.2010.10.006
- [8]. Yousfi, F., El Azzouzi, M., Ramdani, M., Elmsellem, H., Aouniti, A., Saidi, N., ...&Hammouti, B. (2015). Zingiber officinal roscoe extract using as green corrosion inhibitor for mild steel in 1 M HCl media. *Der PharmaChemica*, 7(7), 377-388.
- [9]. Amira, W. E., Rahim, A. A., Osman, H., Awang, K., & Raja, P. B. (2011). Corrosion inhibition of mild steel in 1 M HCl solution by Xylopiaferruginea leaves from different extract and partitions. *International Journal of Electrochemical Science*, 6(7), 2998-3016.
- [10]. Nematian, B., Ahmad Ramazani, S. A., Mahdavian, M., Bahlakeh, G. &Haddadi, S. A. Adsorption of ecofriendly carthamustinctorius on steel surface in saline solution: A combination of electrochemical and theoretical studies. *Colloids Surf. A Physicochem. Eng. Asp.* 601, 125042 (2020).

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