

## Accepted Manuscript

Title: DFT and experimental studies on the inhibition potentials of expired Tramadol drug on mild steel corrosion in hydrochloric acid

Authors: Parul Dohare, D.S. Chauhan, A.A. Sorour, M.A. Quraishi



PII: S2352-9245(17)30016-9  
DOI: <https://doi.org/10.1016/j.md.2017.11.001>  
Reference: MD 36

To appear in:

Received date: 11-5-2017  
Revised date: 16-10-2017  
Accepted date: 30-11-2017

Please cite this article as: { <https://doi.org/>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

## DFT and experimental studies on the inhibition potentials of expired Tramadol drug on mild steel corrosion in hydrochloric acid

Parul Dohare<sup>a</sup>, D.S. Chauhan<sup>a,§</sup>, A.A. Sorour<sup>b</sup>, M.A. Quraishi<sup>\*a,b</sup>

<sup>a</sup> Corrosion and Green Chemistry Research Laboratory, Department of Chemistry, Indian Institute of Technology (Banaras Hindu University) Varanasi-221005, India <sup>b</sup>

<sup>b</sup> Center of Research Excellence in Corrosion, Research Institute, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia

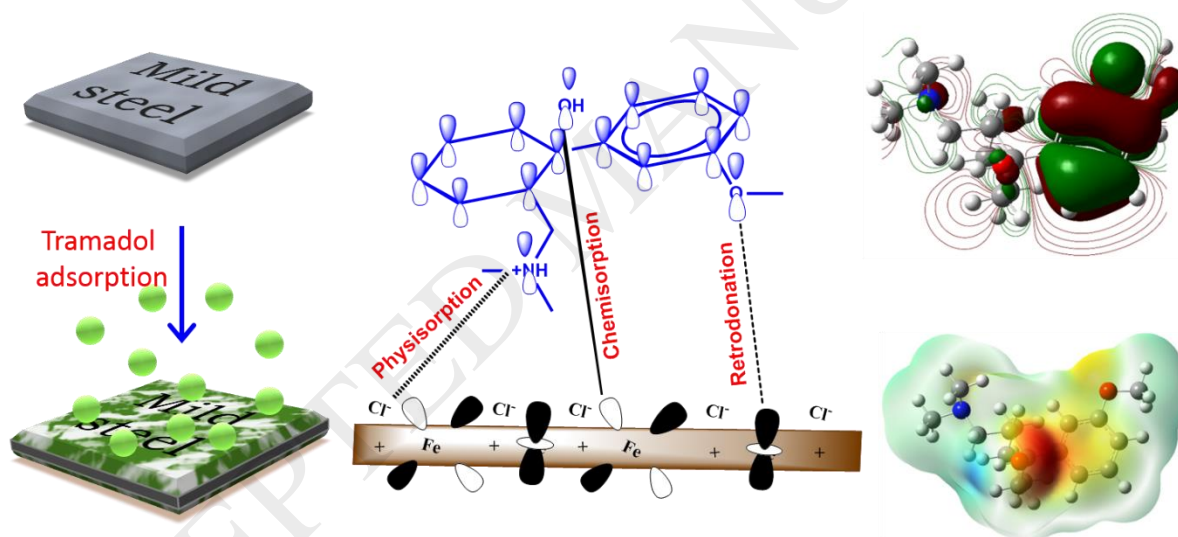
<sup>§</sup> C-8, Ashokpuram Colony, Dafi, Varanasi-221011, India

\*Corresponding author

E-mail: [maquraishi.apc@itbhu.ac.in](mailto:maquraishi.apc@itbhu.ac.in), [mumtaz.quraishi@kfupm.edu.sa](mailto:mumtaz.quraishi@kfupm.edu.sa)

Phone +91-9307025126; Fax: +91-542-2368428

### Graphical abstract



### HIGHLIGHTS

1. Expired Tramadol was tested as novel corrosion inhibitors for mild steel in 1 M HCl.
2. Corrosion inhibition tests were performed using gravimetric measurements, electrochemical impedance spectroscopy, potentiodynamic polarization, and surface analysis (SEM and AFM).
3. Molecular properties of the inhibitor were calculated using DFT study.

Download English Version:

<https://daneshyari.com/en/article/7971481>

Download Persian Version:

<https://daneshyari.com/article/7971481>

[Daneshyari.com](https://daneshyari.com)