

10<sup>th</sup> International Conference and Expo on **Oil and Gas**  
&  
9<sup>th</sup> International Conference on **Petroleum Engineering**

September 23-24, 2019 London, UK

**Application of N-containing corrosion inhibitor for oil well acidizing operations**

Turia M Balashehr<sup>1,2</sup>, Monika S Walczak<sup>1</sup> and Robert Lindsay<sup>1</sup>

<sup>1</sup>The University of Manchester, UK

<sup>2</sup>Mellitah oil & gas BV, Libya

For oil well stimulation, large quantities of acid (the most commonly used is hydrochloric acid (HCl)) are often pumped into a reservoir through the oil well production tubing. To protect the carbon-steel tubular in the wells and drilling equipment from acid damage, corrosion inhibitors are extensively used. Motivated by this technological importance, the goal of this research was to investigate the performance and functionality of dodecyltrimethylammonium chloride (DDTMAC) as corrosion inhibitor of carbon-steel in hydrochloric acid (1 M HCl). For this work electrochemical techniques in combination with interface and solution analysis were applied. Linear polarization resistance (LPR) and potentiodynamic polarization (PDP) results demonstrate that DDTMAC is an effective mixed type corrosion inhibitor in the environment of interest at room temperature. Furthermore, it was found that the inhibition efficiency increases asymptotically as the concentration of DDTMAC increases, with the optimal performance being achieved significantly below its critical micelle concentration (CMC) in this media. X-ray photoelectron spectroscopy (XPS) data indicate that this performance correlates with increasing coverage of DDTMAC.

**Biography**

Turia Mohamed Belashehr is a Corrosion Engineer at Mellitah Oil & Gas BV (Oil division, Libyan branch), where he/she is following chemical treatment in corrosion section. He/she holds MPhil degree in corrosion protection from The University of Manchester, Faculty of Science & Engineering, BSc and MSc degrees in Chemical Engineering from The University of Tripoli. He/she has contributed to publish a scientific paper under title 'Determining the Chemical Composition of Corrosion Inhibitor/Metal Interfaces with XPS: Minimizing Post Immersion Oxidation' in journal of visualized experiments (Jove).

tbelasher@yahoo.com

**Notes:**