

## Fe-BTC Based Electrochemical Sensor for Anti-Psychotic and Anti-Migraine Drugs: Aripiprazole and Rizatriptan

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**Abstract :** The present study describes a stable, highly sensitive and selective analytical sensor. Fe-BTC was synthesized at room temperature using the noble Iron-trimesate system. The high surface area of as synthesized Fe-BTC proved MOFs as ideal modifiers for glassy carbon electrode. The characterization techniques such as TGA, XRD, FT-IR, BET (BET surface area= 1125 m<sup>2</sup>/gm) analysis explained the electrocatalytic behaviour of Fe-BTC towards these two drugs. The material formed is cost effective and exhibit higher catalytic behaviour towards analyte systems. The synergism between synthesized Fe-BTC and electroanalytical techniques helped in developing a highly sensitive analytical method for studying the redox fate of ARP and RZ, respectively. Cyclic voltammetry of ferricyanide system proved Fe-BTC/GCE with an increase in 132% enhancement in peak current value as compared to that of GCE. The response characteristics of cyclic voltammetry (CV) and square wave voltammetry (SWV) revealed that the ARP and RZ could be effectively accumulated at Fe-BTC/GCE. On the basis of the electrochemical measurements, electrode dynamics parameters have been evaluated. Present study opens up new field of applications of MOFs modified GCE for drug sensing.

**Keywords :** MOFs, anti-psychotic, electrochemical sensor, anti-migraine drugs

**Conference Title :** ICCCA 2019 : International Conference on Coordination Chemistry and Applications

**Conference Location :** Paris, France

**Conference Dates :** March 28-29, 2019