**Novel Phthalocyanine Composite Material for the Selective Electrochemical Detection of Dopamine**

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**Abstract:** Dopamine is the neurotransmitters from the class of monoamines, which acts as a chemical messenger in the brain. The concentration of dopamine plays an important role in the diseases like Parkinson and schizophrenia. So, in ordered to early diagnose these diseases the quantification of dopamine is one of the challenge in the medical field. In this context A novel electrochemical sensing platform based on tetra-amino cobalt (II) phthalocyanine ingrained polyaniline (PANI) nanofiber composites has been developed for the selective determination of dopamine. The tetra-amino cobalt (II) phthalocyanine (TACoPc) acted as the dopant and structure-directing agent simultaneously to fabricate the uniform fibrous network-like PANI (PANI-TACoPc hybrids) by a one-step polymerization at room temperature. The synthesized nanocomposite was characterized using Field Emission Scanning Electron Microscopy (FESEM), Fourier Transmission Infrared Spectroscopy (FTIR), X-Ray Diffraction (XRD) and UV-Visible spectroscopy. Electrochemical behavior of the material was studied using different techniques, including Cyclic Voltammetry and Chronoamperometry in 0.1 M PBS of pH 7.4 by modifying the glassy carbon electrode. The proposed modified electrode presented superior catalytic efficiency for dopamine in the presence of ascorbic acid owing to the synergistic effect of polyaniline and TACoPc. It has exhibited a linear response over the 20-200μM concentration range with a high sensitivity of 1.212 μA/μM cm-2 and low limit of detection of 0.026μM. One of the commonly faced problems of interference of ascorbic acid in the electrochemical detection of dopamine was completely excluded from this modified electrode which led to an increase in the catalytic activity of the material for the detection of dopamine in the presence of ascorbic acid.

**Keywords:** Polyaniline, Tetra amino cobalt (II) phthalocyanine, Nanocomposite, Electrochemical sensing, Dopamine, Ascorbic acid.

**TRUST AREA-** **MATERIAL CHEMISTRY- POSTER PRESENTATION**