

Electrochemical Studies of Dopamine, Ascorbic Acid and Uric Acid at Lignin Modified Carbon Paste Electrode by Cyclic Voltammetric

Chandrashekar C Vishwanatha, Bahaddurghatta E Kumara Swamy*

Apparatus

Figure 1 shows the experimental setup for the electrochemical measurements. The setup includes a potentiostat/galvanostat, a reference electrode, a counter electrode, and a working electrode (carbon paste electrode).

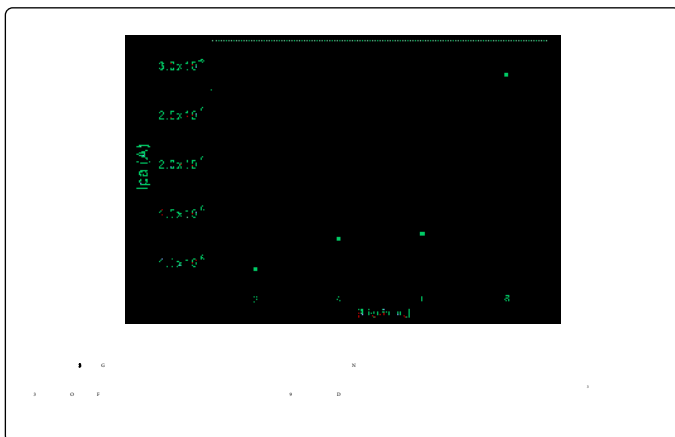
Preparation of bare carbon paste electrode

The bare carbon paste electrode was prepared by mixing carbon powder and a binder (polymer) in a specific ratio. The mixture was then pressed into a disc shape and dried. The electrode was then used for electrochemical measurements.

Results and Discussion

Effect of lignin as modifier

The effect of lignin as a modifier on the electrochemical response of the carbon paste electrode was investigated. The results show that the addition of lignin significantly increases the current response of the electrode towards potassium ferrocyanide. This is attributed to the enhanced surface area and improved electrocatalytic activity of the lignin-modified electrode.



Electrochemical response of Potassium ferrocyanide at Lignin modified carbon paste electrode

The electrochemical response of Potassium ferrocyanide at the Lignin modified carbon paste electrode was studied. The results show that the electrode exhibits a well-defined redox peak, indicating the reversible electrochemical reaction of Potassium ferrocyanide. The peak current is significantly higher compared to the bare carbon paste electrode, demonstrating the enhanced electrocatalytic activity of the lignin-modified electrode.

Electrochemical oxidation of AA at lignin MCPE

