Characterization of Copper(II) at Nanochitosan -Schiff Base Modified Electrode

Rattiya Saradit*, Narongrit Pratummas and Paphawarin Srichan

Department of Industrial Chemistry, Faculty of Science and Technology, Rajamangala University of Technology Srivijaya, Thailand

*e-mail: kek315@hotmail.com

The Chitosan Nanoparticle-Schiff Base was synthesized by 2-amino groups of nano chitosan reaction with 2,5-dihydroxybenzaldehyde. The Chitosan Nanoparticle-Schiff Base was obtained with yield of 75%. The effective chemically modified carbon paste electrode with Chitosan Nanoparticle-Schiff Base was prepared and used as a copper (II) sensor. The characterization of copper (II) at modified electrode has been investigated by cyclic voltammetry. The best parameter was observed for a paste composition 74%(w/w) of graphite powder, 5%(w/w) of chitosan and 21%(w/w) of paraffin oil with 0.2 M sodium acetate solution at pH 6 as supporting electrolyte, scan rate of 1.0 V/s, deposition time of 60 s and equilibration time of 20 s. The linear response range from 1 to 100 mg/L with a correlation coefficient of 0.9988.The detection limit of 0.39 mg/L.

Keywords: Polypyrrole; Copper; Nanochitosan; Modified electrode