

Study on Rapid Electrochemiluminescence Detection of Allura Red

Ting-ting Xu¹, Wen-chang Wang², Xiao-hui Chen³, Zhi-dong Chen^{4,*}

¹ School of Petrochemical Engineering, Changzhou University, China.

² School of Petrochemical Engineering, Changzhou University, China

³ School of Chemistry and Material Engineering, Changzhou Vocational Institute of Engineering, China.

⁴ School of Materials Science and Engineering, Changzhou University, China.

*E-mail: zdchen@cczu.edu.cn

doi: 10.20964/2017.10.21

Received: 20 June 2017 / Accepted: 29 July 2017 / Published: 12 September 2017

In this study, a fast and convenient method to immobilize Ru(bpy)₃²⁺ on glassy carbon electrode (GCE) surface is developed. A Ru(bpy)₃²⁺/poly (sulfosalicylic acid) (PSA) modified glassy carbon electrode was prepared by electrochemical polymerization and used as the working electrode in the electrochemiluminescence (ECL) detection of Allura Red (AR). Under the optimal conditions, the linear range of the method was $1.0 \times 10^{-7} \sim 1.0 \times 10^{-4}$ mol/L and the detection limit was 6.0×10^{-8} mol/L. The modified electrode shows good sensitivity and stability, which can be used in the determination of Allura Red in food samples.

Keywords: Electrochemiluminescence; Ru(bpy)₃²⁺; electrochemical polymerization; Poly(sulfosalicylic acid); Allura Red

[FULL TEXT](#)

© 2017 The Authors. Published by ESG (www.electrochemsci.org). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).