Short Communication

A Facile Fabrication of Microelectrodes with Recyclable Feature using Organic Soluble Wax

Qinghua Liu^{1,2,*}, Wenyuan Yan¹, Yanan Li¹, Feimeng Zhou¹

¹ College of Chemistry and Chemical Engineering, Central South University, Changsha, Hunan 410083, P.R. China

² School of Chemistry and Chemical Engineering, Heze University, Heze 274015, China

*E-mail: liuqinghua-126@126.com

doi: 10.20964/2020.05.58

Received: 4 January 2020 / *Accepted:* 18 February 2020 / *Published:* 10 April 2020

Here, a facile, low-cost and recyclable method for the fabrication of electrodes. Organic soluble wax sealing allows one to bypass the complicated laser-pulling and torch-sealing used in conventional fabrication protocols. Electrodes with various electrode wires were successfully fabricated, including platinum (e.g., 200, 100, 76, and 25 μm) and carbon fiber (11 μm). Our electrodes are feasible and convenient to recycle due to the good solubility of wax in acetone. The fabricated electrodes are then characterized by cyclic voltammetry in $\text{K}_3[\text{Fe}(\text{NH}_3)_6]$ and dopamine solutions. The CV curves show well-defined peak and sigmoidal responses, which confirms the successful fabrication of ideal conventional-sized electrodes and microelectrodes.

Keywords: Organic soluble wax; Microelectrodes; Recyclable; Carbon fiber; Cyclic voltammetry

[FULL TEXT](#)

© 2020 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/>).