A Simple and Facile Electrochemical Sensor for Sensitive Detection of Histidine Based on Three-Dimensional Porous Ni Foam

Chunying Xu¹, Shaohua Zhang¹, Huanyun Zang³, Baiqing Yuan^{1,2,*}, Ru Fan², Nan Zhang², Lei Guo, Yuzhong Niu¹, Yao Zhang¹, Juan Jin^{1,*}

¹ School of Chemistry and Materials Science, Ludong University, Yantai 264025, Shandong, China

² Henan Province Key Laboratory of New Optoelectronic Functional Materials, College of Chemistry and Chemical Engineering, Anyang Normal University, Anyang 455000, Henan, China

³ Department of Municipal and Environmental engineering, Shandong Urban Construction Vocational College, Jinan 250103, Shandong, China

*E-mail: baiqingyuan1981@126.com (B. Yuan); jinjuan8341@163.com (J. Jin)

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The commercially available three-dimensional porous Ni foam was presented as a novel electrochemical sensing platform for sensitive detection of histidine (His). Ni foam exhibited excellent electrocatalytic activity towards the oxidation of histidine. Based on the low cost Ni foam, a simple and sensitive His sensor was developed, with the linear range from 0.15 to 20.3 μM ($R^2=0.9978$) and the detection limit of 50 nM in a 0.1 M NaOH solution. The proposed method was also successfully demonstrated for the detection of histidine in human urine sample.

Keywords: Ni foam, electrochemical sensing, histidine, electrocatalytic activity

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