Fabrication and Optimization of Chloride Ion electrode based on bilayer membrane

Zhe Li¹, Huang Shunhao¹, Juan Chen^{1,*}, Zhuang Junpeng²

¹ College of Information Science and Technology, Beijing University of Chemical Technology, Beijing 100029, PR China

² College of Chemistry, Beijing University of Chemical Technology, Beijing 100029, PR China

*E-mail: jchen@mail.buct.edu.cn

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Bilayer membrane electrode is an effective method to improve the performance of traditional ion select electrode. By adjusting the composition of the membrane, the ion flux in the electrode membrane is controlled, thus the detection performance of the electrode can be changed. With the help of least square support vector machine and orthogonal experiment, the electrode model was established with the membrane thickness and ion exchanger concentration as factors, and the optimal parameters of the model were applied to the chloride ion PVC membrane electrode. The experimental results show that the detection limit of bilayer chloride ion electrode is one order of magnitude lower than that of traditional membrane electrode.

Keywords: Chloride quantification, Electrochemistry, Bilayer membrane, Orthogonal experiment, Support vector machine

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