Research and application of near-infrared spectroscopy in rapid detection of water pollution

Peilong Xu

State Key Laboratory, Qingdao University, Shandong, 266071, China, email: xpl@qdu.edu.cn

Received 23 February 2018; Accepted 28 May 2018

ABSTRACT

Objective: To study the method of rapid detection of water quality by means of near-infrared spectroscopy. Methods: Adopting USB2000 fiber optic spectrometer to carry out the near-infrared spectra for different water collected in the natural environment, comparing the reflectance rate between the polluted lake water and clean lake water in different regions, and making comparison on the reflectance rate of clean water in different water environment, so as to learn the changes of the near-infrared spectroscopy. Results: There are different absorption peaks and peaks in polluted and non-polluted water, and the trend of the reflectance spectra for water in different environments is approximately the same. Conclusion: Spectra technology has the advantages of low cost and easy operation and so on, which reflects its advantages in water quality detection. It has a good effect on solving water pollution problem, which has great significance for water quality monitoring.

Keywords: Water pollution; Near-infrared spectroscopy; Rapid test