

Fast and Sensitive Spectrofluorimetric Determination of Trace Amount of Pb(II) in Sludge Using o-Vanillin-8-Aminoquinoline

by Bo Tang*, Tai-xing Yue, Jun-sen Wu, Yi Ding, Yu-ming Dong and Hong-jian Wang

College of Chemistry, Chemical Engineering and Materials Science, Shandong Normal University, Jinan, 250014, China

Key words: determination of Pb (II), o-vanillin-8-aminoquinoline, spectrofluorimetry, quenching

o-Vanillin-8-aminoquinoline (OVAQ) – a novel fluorescent reagent has been synthesised and applied to the determination of Pb(II). In ethanol-water medium of pH 9.00 Pb(II) reacted with OVAQ ($\lambda_{\text{ex/em}} = 278/318 \text{ nm}$) to form a 1:1 non-fluorescent complex. Fluorescence quenching was proportional to the concentration of Pb(II) in the range from 5.3 to 180 $\mu\text{g L}^{-1}$. Detection limit was 1.6 $\mu\text{g L}^{-1}$. Interfering effect of 25 foreign ions on the determination results were studied. The method was successively applied to the determination of lead in sludge.