

Application of a synthetic Schiff base of 4-bromo-2-(quinolone-8-yliminomethyl)-phenol in ethanol for the determination of Zn(II) by spectrophotometric method

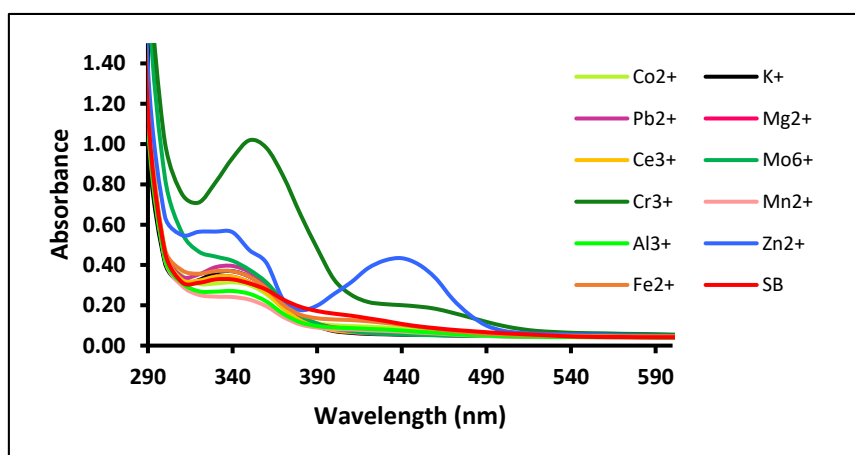
Bussaba Boonseng^{1*}, Orawan Kritsunankul², Ratanon Chotima¹, Benjaporn Pramote² and Sunisa Seehawong¹

¹ Department of Chemistry, Faculty of Sciences, Naresuan University, Phitsanulok, Thailand

² Department of Chemistry and Research center for academic excellence in petroleum, petrochemical and advanced materials, Faculty of Science, Naresuan University, Phitsanulok, Thailand

*e-mail: bussabab@nu.ac.th

The complex formation between the synthesized tridentate Schiff base of 4-bromo-2-(quinolone-8-yliminomethyl)-phenol and the cations K^+ , Mg^{2+} , Al^{3+} , Cr^{3+} , Mn^{2+} , Fe^{2+} , Co^{2+} , Zn^{2+} , Ce^{3+} and Pb^{2+} in ethanol was primarily investigated by spectrophotometric method. The complexation reaction of Zn^{2+} with the synthesized Schiff base in ethanol at pH 3.0 was found to provide a color complex with high sensitivity in the wavelength range of 380-500 nm. The optimized conditions for Zn^{2+} complex formation were then examined including the study in the ratio of metal to ligand, the time of color formation, the formation constant and its stability. The spectrophotometric method was also successfully applied to the determination of Zn^{2+} in synthetic samples with respect to the calibration range.



Keywords: Schiff base; Spectrophotometric method; Mg^{2+} ; Zn^{2+} ; Synthetic samples