

## **ABSTRACT**

### **ANALYSIS STUDY OF Cu(II) ION WITH TANNIC ACID USING ULTRAVIOLET-VISIBLE SPECTROPHOTOMETER**

By

**RIZKA ARI WANDARI**

A study of ionic analysis of Cu (II) ion with tannic acid has been performed. This study aims to determine the maximum wavelength between Cu (II) ions with tannic acid and to obtain optimum conditions for pH, concentration, volume, and stability time for complex compound Cu (II) ion – tannic acid. Analysis of Cu (II) ions with tannic acid was performed using an ultraviolet-visible spectrophotometer. The results of this study obtained the maximum wavelength of a complex compound Cu (II) ion - tannic acid was 473.5 nm with optimum conditions at pH 11, stoichiometric ratio of variation in the concentration of Cu (II) ion – tannic acid was 1: 4, stoichiometric variation volume of Cu (II) ions – tannic acid was 1: 1, and stability time at 30<sup>th</sup> minute. After the optimum variation was obtained then the method validation on Cu (II) ion obtained r-value of 0.9997, in the precision test obtained value SD was 0.0124 and % RSD was 1.4277. the value of LoD and LoQ were 0.2953 and 0.9844, and the value of recovery (% recovery) was 94.54%.

Keywords: Tannic Acid, Cu(II) ion, Complex compound Cu(II) Ion- Tannic Acid,  
ultraviolet-visible spectrophotometer.

## **ABSTRAK**

### **STUDI ANALISIS ION LOGAM Cu(II) DENGAN ASAM TANAT MENGUNAKAN SPEKTROFOTOMETER ULTRAUNGU-TAMPAK**

Oleh

**RIZKA ARI WANDARI**

Studi analisis ion logam Cu(II) dengan asam tanat telah dilakukan. Studi ini bertujuan untuk mengetahui panjang gelombang maksimum antara ion logam Cu(II) dengan asam tanat serta mendapatkan kondisi optimumnya terhadap pH, konsentrasi, volume, dan waktu kestabilan untuk senyawa ion logam Cu(II)-asam tanat. Analisis ion logam Cu(II) dengan asam tanat dilakukan menggunakan spektrofotometer ultraungu-tampak. Hasil penelitian ini diperoleh panjang gelombang maksimum senyawa kompleks ion logam Cu(II)-asam tanat sebesar 473,5 nm dengan kondisi optimum pada pH 11, perbandingan stoikiometri variasi konsentrasi ion logam Cu(II)-asam tanat 1:4, perbandingan stoikiometri variasi volume ion logam Cu(II)-asam tanat 1:1, serta waktu kestabilan pada menit ke 30. Setelah didapatkan variasi optimum lalu dilakukan validasi metode pada ion logam Cu(II) diperoleh nilai  $r$  sebesar 0.9997, pada uji presisi diperoleh nilai SD sebesar 0.0124 dan %RSD sebesar 1.4277. Nilai LoD dan LoQ sebesar 0.2953 dan 0.9845, serta nilai perolehan kembali (%*recovery*) sebesar 94,54%.

Keywords: Tannic Acid, Cu(II) ion, Complex compound Cu(II) Ion- Tannic Acid, ultraviolet-visible spectrophotometer.