VA Application Note No. V - 150

Title:	**Copper in a nickel plating bath**

Summary:	The concentration of Cu in a Ni plating bath is determined by polarography in chloride containing acetate buffer at pH 4.7.

Sample:	Ni electroplating bath
Sample preparation:	None

Analysis of Cu

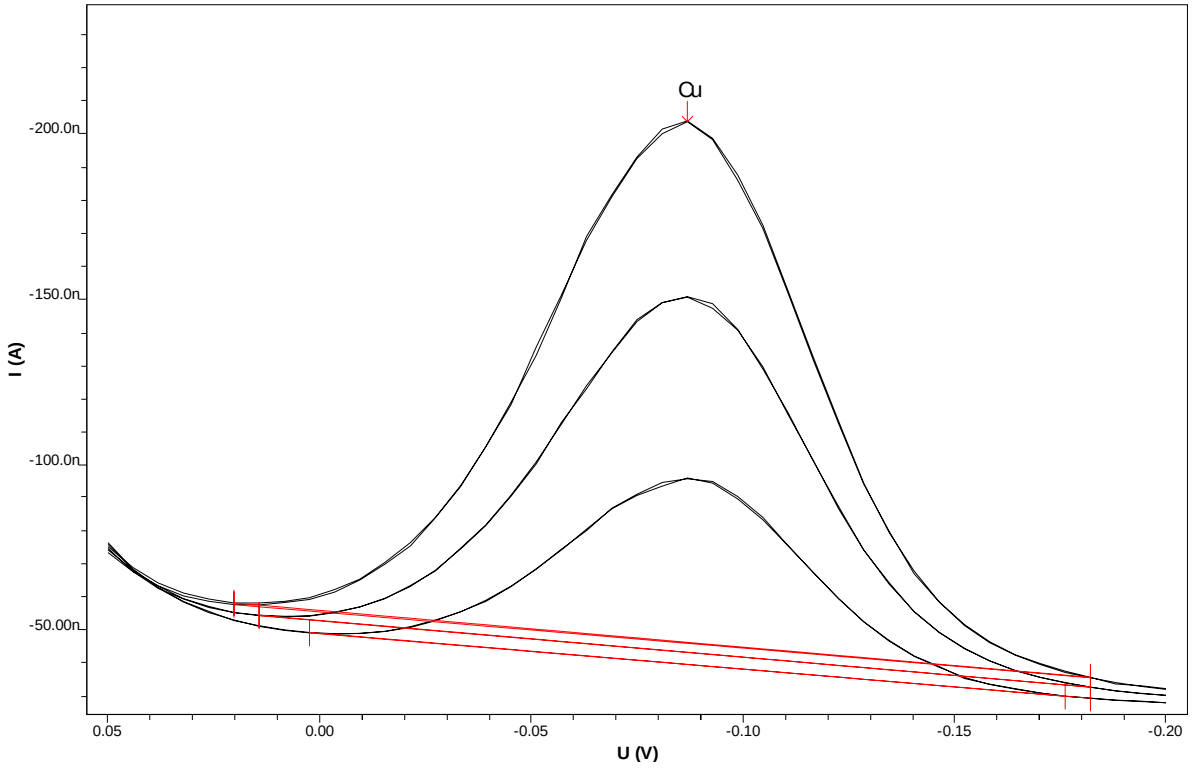
Acetate buffer pH 4.7	c(Na acetate) = 1.5 mol/L c(CH_3COOH) = 1.5 mol/L	
KCl solution	c(KCl) = 3 mol/L	
Measuring solution	10 mL ultrapure H_2O + 1 mL acetate buffer pH 4.7 + 1 mL KCl solution + 0.5 mL Ni plating bath	
Working electrode (WE)	**MME** (Multi Mode Electrode)	6.1246.020
Auxiliary electrode (AE)	**Pt**	6.0343.000
Reference electrode (RE)	Reference system: Ag/AgCl/KCl (3 mol/L) Intermediate electrolyte: c(KCl) = 3 mol/L	6.0728.020 6.1245.010

Parameters

Working electrode	DME
Stirrer speed	2000 rpm
Mode	DP
Purge time	300 s
Equilibration time	10 s
Pulse amplitude	0.05 V
Start potential	0.05 V
End potential	-0.2 V
Voltage step	0.006 V
Voltage step time	0.6 s
Sweep rate	0.01 V/s
Peak potential Cu	-0.1 V

Results:	Cu
	22.1 mg/L

Determination of Cu



Cu
c = 22.139 mg/L
+/- 0.079 mg/L (0.35%)