

VA Application Note No. V - 164

Title:	Titanium in a titanium pickle bath
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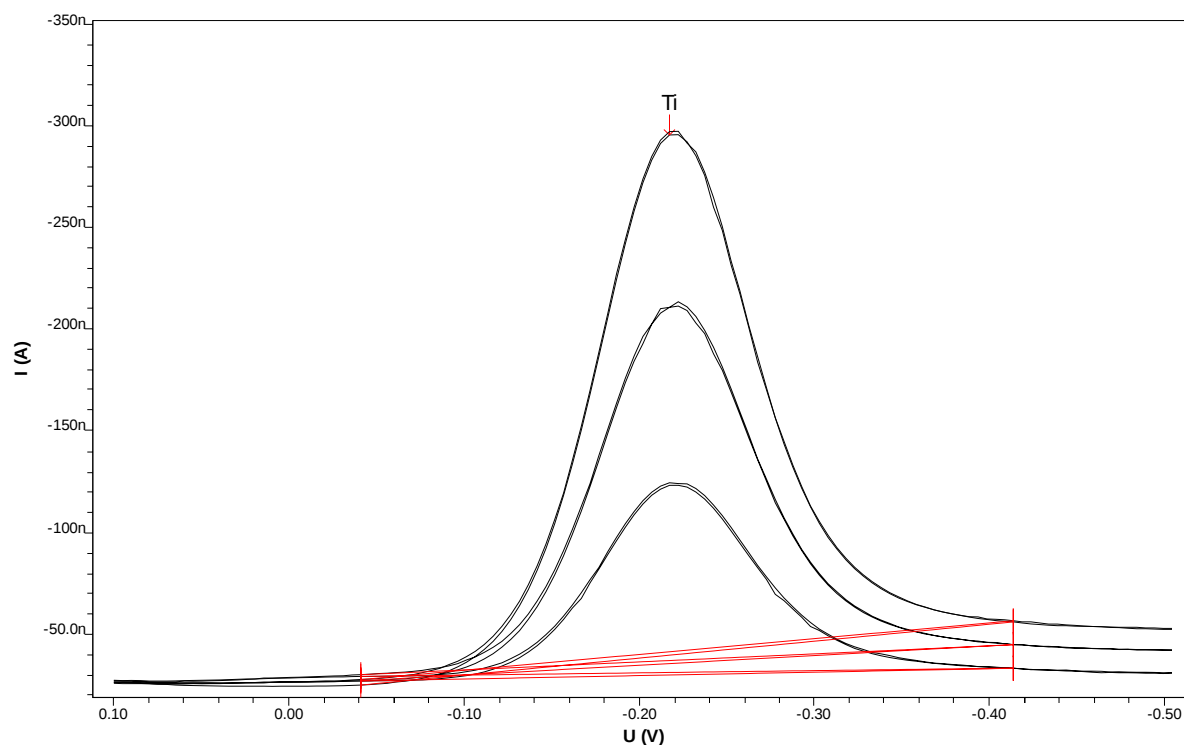
Summary:	The concentration of Ti in a Ti pickle bath is determined by polarography in an oxalic acid electrolyte.
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Sample:	Ti pickle bath
Sample preparation:	Dilution 1:100

Analysis of Ti		
Supporting electrolyte	c(oxalic acid) = 0.2 mol/L c(H ₂ SO ₄) = 0.25 mol/L c(KClO ₄) = 0.1 mol/L	
Measuring solution	5 mL H ₂ O + 5 mL supporting electrolyte + 50 µL diluted Ti pickle 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)	6.0728.020
	Intermediate electrolyte: c(KCl) = 3 mol/L	6.1245.010
Parameters	Working electrode	DME
	Stirrer speed	2000 rpm
	Mode	DP
	Purge time	300 s
	Equilibration time	5 s
	Pulse amplitude	0.05 V
	Start potential	0.1 V
	End potential	-0.5 V
	Voltage step	0.005 V
	Voltage step time	0.6 s
	Sweep rate	0.0083 V/s
	Peak potential Ti	-0.22 V

Results:	Ti
	4.6 g/L

Determination of Ti



Ti
c = 4.576 g/L
+/- 0.026 g/L (0.56%)

