**Name(s)**

Lori A. Shirajian

**Project Title**

Faraday's Second Law of Electrolysis

**Abstract**

Objectives/Goals

To verify Faraday's 2nd law of electrolysis. \( m = zIt \), where \( m \) is the mass transferred from the solution to the electrode measured in g, \( z \) is the electrochemical constant in g/C, \( I \) is current measured in A, \( t \) is time measured in second.

Methods/Materials

Sulfuric Acid, Copper Sulfate, Distilled Water, HCl, Copper Voltameter Model GS-432, 6203B DC Power Supply, Model CS 200 Capacity 200g*0.1g Electronic Balance, Weighing paper, Electrical Cable, 10 ohm 50 watt Rheostat, two DT9508 Multimeters, and Stop Watch.

Results

I verify the Faraday's 2nd law of electrolysis by manipulating current, voltage, time, initial CuSO4 concentration, and catalysts. The result is that the Faraday's 2nd law of electrolysis is correct, where \( m \) is directly proportional to \( I \) and \( t \), while other factors also affect the mass transferred.

Conclusions/Discussion

All my measurements fit the theoretical yield in the range of 6.8% up to 10.5%.

**Summary Statement**

Verifying Faraday's 2nd Law of Electrolysis.

**Help Received**

Worked at Ribet Academy's Lab