

**An Investigation of the Electrodeposition of Copper
Relevant to the Removal of Dissolved Copper from
Semiconductor Industry Waste Streams**

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There have been many investigations of the deposition of copper from aqueous solutions. Most of these studies have been relevant to the electrowinning of copper, or more recently the deposition of copper interconnects in the semiconductor industry. There has been little work on the recovery of copper from the dilute solutions that are produced by electroplating, CMP and similar operations, within the semiconductor industry. In the present investigation at Berkeley, a rotating disc electrode has been used to study the kinetics of deposition of copper from solutions which contain additives, such as citric acid or EDTA, that are used in electroplating. These measurements are preliminary to developing a system for recovering copper, and regenerating water, from waste streams by a combination of ion exchange and deposition onto electrodes with extended surface areas.

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