

## Poly Electrolyte as a Complexing Agent in Chemical Etching of Copper

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CuCl<sub>2</sub> used in chemical etching of copper typically include a complexing agent. Our present work investigates the effectiveness of poly electrolyte as a complexing agent for Cu with H<sub>2</sub>O<sub>2</sub> and HCl employed as an oxidizer. We show that the rate of copper removal from Cu increases when both poly electrolyte and H<sub>2</sub>O<sub>2</sub> are used in acidic solutions (< pH 2.0). We investigate the underlying surface reactions of these effects by using CMI in combination with Mali-TOF analysis. We analyze the relative roles of poly electrolyte, H<sub>2</sub>O<sub>2</sub>, and solution pH in Cu removal, and take the life cycle of poly electrolyte in this system.