

Evaluation of Cu ELD solution using in situ transmittance measurement

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Though electroless deposition (ELD) solution has inevitable stability problem due to the coexistence of reactants, difficulties lie in the quantifying of the stability. In the aspect of monitoring of solution reactivity, ex situ electrochemical methods have some drawbacks such as compulsive supplement of electrons or time consumption.

In this study, in-situ transmittance measurement was suggested to evaluate the stability and the reactivity of Cu ELD solution. This method can monitor the relative transmittance of solution between irradiated and output signal of He-Ne laser. Those data gives the information about the degree of nanoparticles scattering that homogeneously or heterogeneously generated in solution, and help the real time interpretation on the solution status. It also has merits that it reflects the real ELD environment due to the injection of catalytic sites instead of supplyment of electrons. In this presentation, it will be discussed that the basic understanding of transmittance behavior and performance changes with compositions of reducing agents and complexing agents selected based on their functionality.