

Characterization of parasitic residual deposition on passivation layer in electroless nickel immersion gold process

Abstract

The problem of parasitic residual deposition on the passivation layer in electroless deposition process is studied in this paper. The characterization analysis tools involved are focused ion beam (FIB), scanning electron microscopy (SEM), electron dispersive X-ray (EDX) and metallurgical interface analysis. Samples were identified as either good or bad prior to the characterization process via a high power microscope. A good sample is the one without parasitic deposition while a bad sample contains parasitic residual deposition on the passivation surface. Ultrasonic vibration has been able to remove the parasitic deposition and reveal crack presence on the passivation surfaces. Crack was found extended to the aluminum underneath that leads to the formation of the parasitic residual deposition. Additional sacrificial photoresist on top of passivation was able to eliminate this parasitic deposition.