

Comparison of Interfacial Forces during Post-CMP Cleaning

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This research studies the interfacial forces involved in tribological interactions while removing nano-sized particles during post-CMP cleaning. Surface and interfacial forces are compared experimentally as well as theoretically. The theoretical analysis was focused on the forces existing between particles and a substrate. Surface interaction consideration includes applied pressure, frictional force, and hydrodynamic drag. Cleaning experiments were performed in deionized water using a polyvinyl acetal (PVA) brush sweeping through the wafer surface. The fluid-drag force was found to affect the basic lubricating parameters through changing material properties.

Brief Bio:

Dr. Hong Liang is Associate Professor and Jordan Career Development Professor at the Mechanical Engineering, Texas A&M University. Before becoming a faculty member, she was a senior scientist at the Cabot Corporation and a postdoc at the National Institute of Standards and Technology (NIST). Her research areas are in CMP and post-CMP cleaning. She is a fellow of the Society of Tribologists and Lubrication Engineers (STLE). She has more than 120 technical publications including three books.