

Current Status of Etching Process Diagnostics and Simulations based on Atomic and Molecular Data

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The semiconductor industry's continued trend of manufacturing device features on the nanometer scale requires increased plasma processing control and improved understanding of plasma characteristics and plasma-material interactions. As interest has increased, the role of simulation and diagnostics of processing plasmas become more important in understanding the effects of charged particles and radicals in plasma applications. Also, in order to understand the behavior and properties of chemically active plasma, scientific data such as atomic and molecular data have become a rapidly growing area of scientific endeavor that holds great promise for practical applications for industrial application fields. Thus, in this presentation, we review the current status of plasma diagnostics and simulation based on atomic & molecular data aspect and identify the most important data needs in future plasma research.