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Machine learning aided plasma source and process simulation for semiconductor fabrication processes

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The plasma process contributes a high proportion of the semiconductor manufacturing process, and the complexity of the process is gradually increasing. To improve the degree of integration of semiconductor chips, various plasma sources and processes have been developed Furthermore, efforts have been made to design and optimize sources and processes using plasma simulators.

Although various simulators have been developed through the efforts of many research groups, it is still difficult to quickly respond to the needs of field engineers. Therefore, our research group has been conducting research on developing bulk and surface databases as well as simulators for many years to bridge this gap.

Moreover, may researches for plasma source monitoring have also been conducted by developing machine learning-based technologies. Thus, this talk introduces our group's simulator and database development status and the results of applying machine learning technology to plasma source monitoring and simulations.

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