



Implementation of Machine Learning in Metrology for Advanced Semiconductor Manufacturing

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Continuous increase of process complexity which is elevated by 3D architecture, tight process specs and introduction of novel materials, pose a significant challenge on metrology capability to provide high accuracy process control while maintaining productivity and cost economics. Traditional approach to increased complexity challenges is primarily addressed in optical metrology by enriching spectral information and increasing computational speed of the algorithms driving the computational metrology. While such approach must continue, with latest metrology challenges such as on-device measurements, fast time to solution, high throughput and economical CoO, there is a need to adopt additional sources of information in metrological solution, which increase productivity without compromising accuracy.

This talk will cover the benefits and examples of implementation of machine learning based solutions in optical metrology, and how those can be utilized in order to deliver high accuracy requirements without compromising the productivity of the metrology systems. We'll also discuss the importance of integrating data driven metrology into the traditional physical model-based computations, and how such integration addresses the evolving challenges in advanced nodes fabrication.