



CDSEM Metrology of Line-Edge Roughness (LER) and Wiggling occurring in EUV-Lithography or Mandrel Process

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For EUV lithography features we want to decrease the dose and landing-energy of CD-SEM's probe beam because measured LER reduces with severe resist-material's shrink. At the same time by increase of SEM-image noise, the measured LER increases with LER bias that is a kind of ghost LER occurring in the noisy edge-detection. Such artifacts which cause measurement error more or less than a nanometer do not allow us to monitor true LER which must be controlled at a few nanometers. In this work we propose a new method, that is to say here as planer TEM, to get the true LER by excluding the LER bias from the measured LER. Also we propose a new reference metrology of LER to verify accuracy of our measurement.