

## **Optical properties of TiO<sub>2</sub> thin films from soft x-ray reflectivity measurements**

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In order to predict performance, design and improve optical devices used in the EUV and SX, it is vital to have knowledge and accurate information on the refractive index of the materials used in this wavelength spectrum.

In this work several TiO<sub>2</sub> thin films of different thicknesses were deposited on Si (100) substrates using electron beam evaporation technique. The films were deposited at a substrate temperature of 150°C with a deposition rate of 0.3 - 0.5 Å/sec. Reflectivity measurements of the samples were performed in EUV and SX spectral regions using synchrotron radiation. Analyzing the refractive index  $N=n+ik$  of TiO<sub>2</sub> thin films, optical constants (n,k) in this energy range were both determined by fitting the Fresnel equations with least-square fitting methods.