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Application of interference methods for determination of curvature radius in metal–oxide–semiconductor (MOS) structures

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Keywords

Si–SiO_2 system, interferometry, radius of curvature, stress

Abstract

The paper deals with the measurement of the radius of curvature of silicon wafer surface. The aim of these measurements was to determine stresses generated during oxidation of silicon wafers. A greater molar volume of SiO_2 layer in relation to the substrate material causes changes in the shape of oxidized surface, which results in stresses in both silicon dioxide layer and silicon. These changes are detected by Fizeau interferometer. In order to find the local value of curvature radii, deformations of the wafers under investigation approximated by corresponding interpolation formulas have been determined.

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