

Title: Waferinspection with Duv Wavelengths

Author: Uwe Seifert

It is becoming increasingly clear that for leading edge technologies the detection of small physical but killer defects are becoming a challenge for the visible and even the UV illumination WLS.

Based on

$$\frac{d^6 (n^2 - 1)^2}{\lambda^4 (n^2 + 2)^2} E^2$$

,shorter WLS(lambda), should result on better sensitivity to smaller defect, at least from the theoretical point of view.

This paper will approach the need of the DUV illumination in a Leading Edge Memory Manufacturer (Qimonda).

Which are the advantages (sensitivity) and potential risks (SNR) of using these short WLS ?. Those needs and risks will be illustrated using a real example used for the detection and nuisance filtering of small scratch marks which finally lead on metal shorts.