

# A Failure Analysis Technique using the Nano Electrostatic Field Probe Sensor (NEPS)

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The laser NEPS (Nano Electrostatic field Probe Sensor) method is one of the techniques to estimate a failing region by imaging the change of the carrier signal that occurs by irradiating the laser beam light to LSI under the non-contact and non-bias source analysis environment. In this announcement, the principle of the NEPS method is explained using a capacitive coupling model, and the laser irradiation position and the most suitable analysis condition of NEPS detecting position is clarified. In addition, the I/O terminal leak defect of the chip LSI products is analyzed by means of the NEPS method, and the result of detected abnormalities by the via contact and the meltdown of the silicon basal plate interface will be shown.

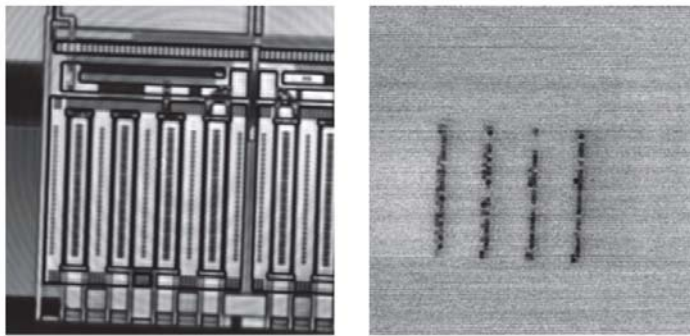


Fig.8. Result of NEPS  
Optical image(Left), NEPS Image(Right),  
130×130um area.