FIB FOR OPTOELECTRONICS FAILURE ANALYSIS

THALES

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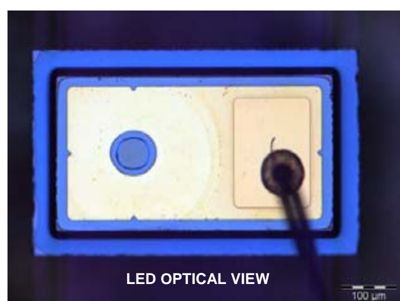
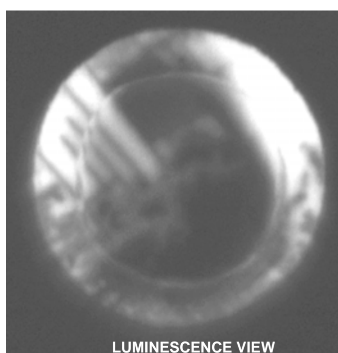
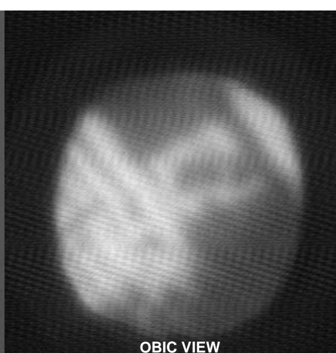
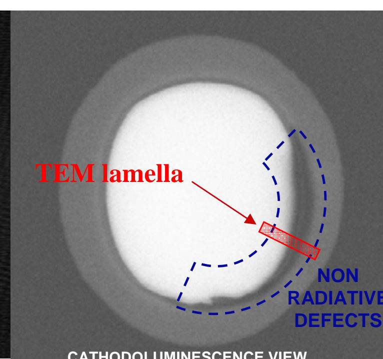
Light Emitting Diode

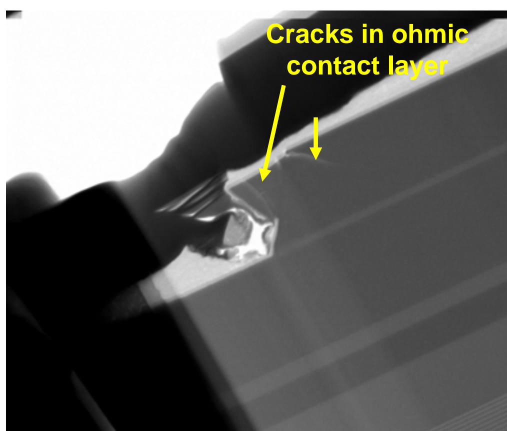




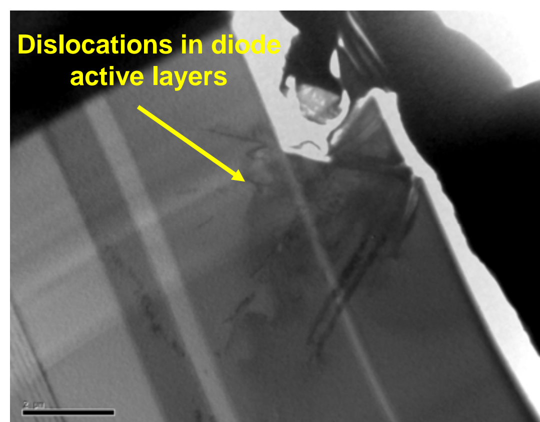




1. LUMINESCENCE + OBIC + CATHODOLUMINESCENCE⇒ reveal recombination center defect in LEDs active zone

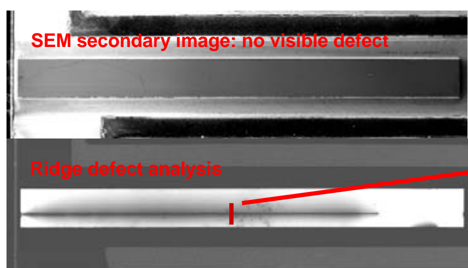


2. STEM ⇒ *FIB in situ LR observation of the defect*

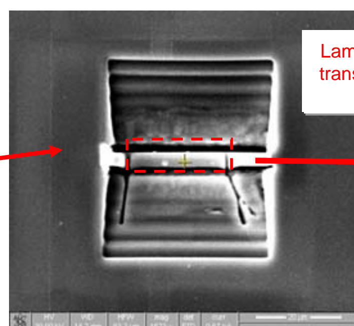


3. TEM ⇒ *HR observation of the defect*

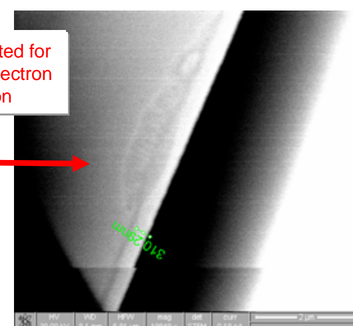
Laser Diode



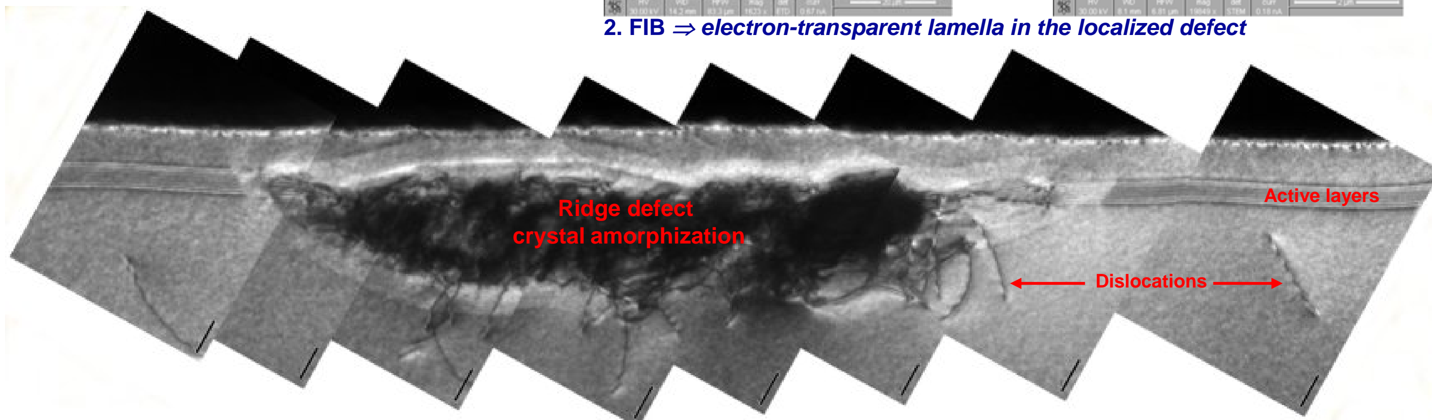
1. SEM/Cathodoluminescence ⇒ *defect localization*



Lamella extracted for transmission electron observation



2. FIB ⇒ *electron-transparent lamella in the localized defect*



3. TEM ⇒ *HR observation of the defect, active layers and dislocations. Diffraction analysis can determine the local structure of the substrate (crystalline/amorphous)*