

FAILURE ANALYSIS AND CIRCUIT MODIFICATION

- Cross sectioning with EDX option
- Local TEM lamella preparation
- Cutting of existing metal lines
- Deposition of new metal connections
- Local removal / etching or deposition of passivation layers

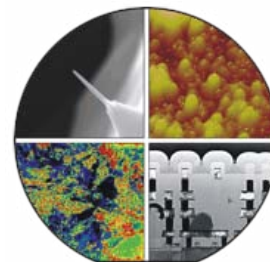
Equipment and Samples

- FIB FEI Helios NanoLab 600
- FIB FEI 800SB
- Wafers of up to 200 mm diameter
- Devices (dies and decapsulated)
- Printed circuit boards

CONTACT

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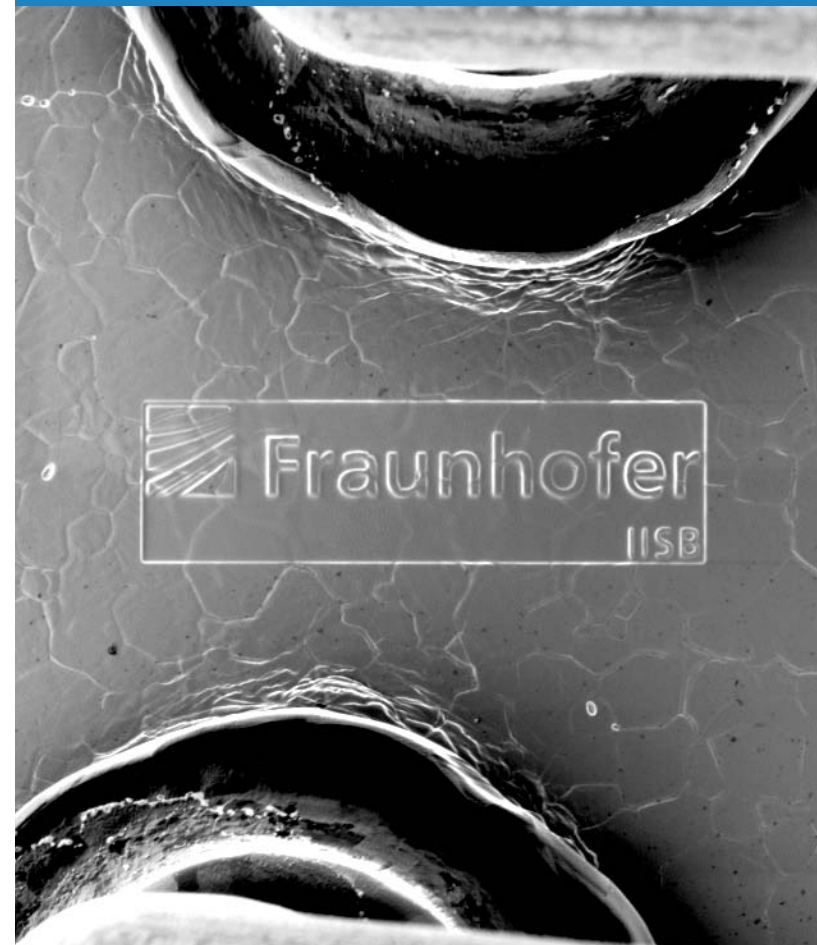
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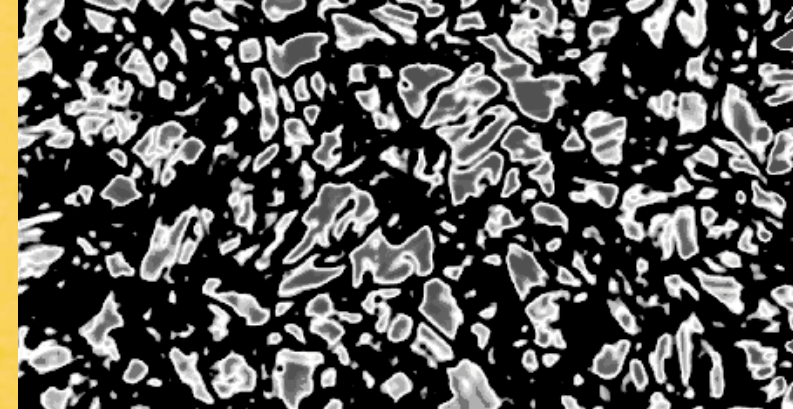
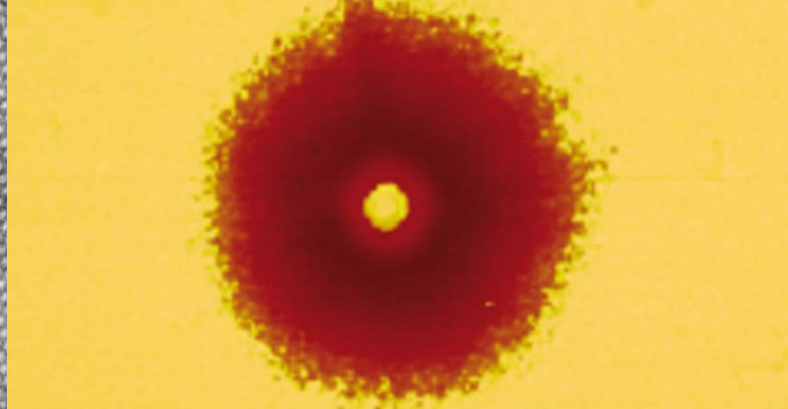


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**PROVIDING A UNIQUE
PLATFORM FOR ACADEMIC
AND INDUSTRIAL COMMUNITIES**

ANALYSIS AND CHARACTERIZATION





PHYSICAL CHARACTERIZATION

Scanning Electron Microscopy (SEM)

- Top view
- Side view (5-axis rotation)

Transmission Electron Microscopy (TEM)

- Cross section analysis (resolution 0.17 nm)

Focussed Ion Beam (FIB)

- Cross sectioning
- TEM lamella preparation

Energy Dispersive X-Ray Spectroscopy (EDX)

- Full spectrum (starting with C)
- Element mapping

SCANNING PROBE MICROSCOPY

Non-Electrical SPM Techniques

- Topography AFM (standard tips as well as high aspect ratio tips for trenches)
- Quantitative nanomechanical property mapping (PeakForce QNM)

Electrical SPM Techniques

- Scanning spreading resistance microscopy (SSRM)
- Surface potential mapping (KFPM)
- Scanning capacitance microscopy (SCM)
- Conductive AFM (cAFM, TUNA, TR TUNA) including local constant voltage stress (CVS) analysis
- Mapping and local spectroscopy for SCM and cAFM/TUNA

ELECTRICAL CHARACTERIZATION

Carrier Lifetime and Diffusion Length

- Microwave detected photoconductivity decay (μ -PCD) with IR or UV laser
- Surface photo voltage (SPV)
- Fe concentration measurement (p-Si)

Deep Level Transient Spectroscopy (DLTS)

- Identification and quantification of electrically active defects in silicon

Device Characterization

- Current voltage (IV), parameters, reliability on devices (e.g., pn diodes, MIS devices)
- Capacitance voltage (CV) on MIS capacitors
- V-Q Corona characterization of dielectric layers without gate metallization