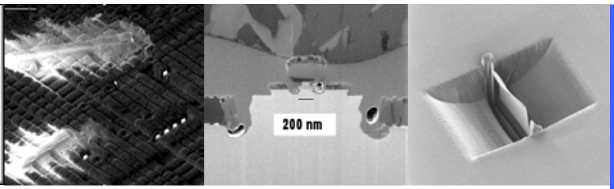
NanoScope Services Ltd.



European Service Lab Update - Spring 2013

NEW Optical Microscopy over the web

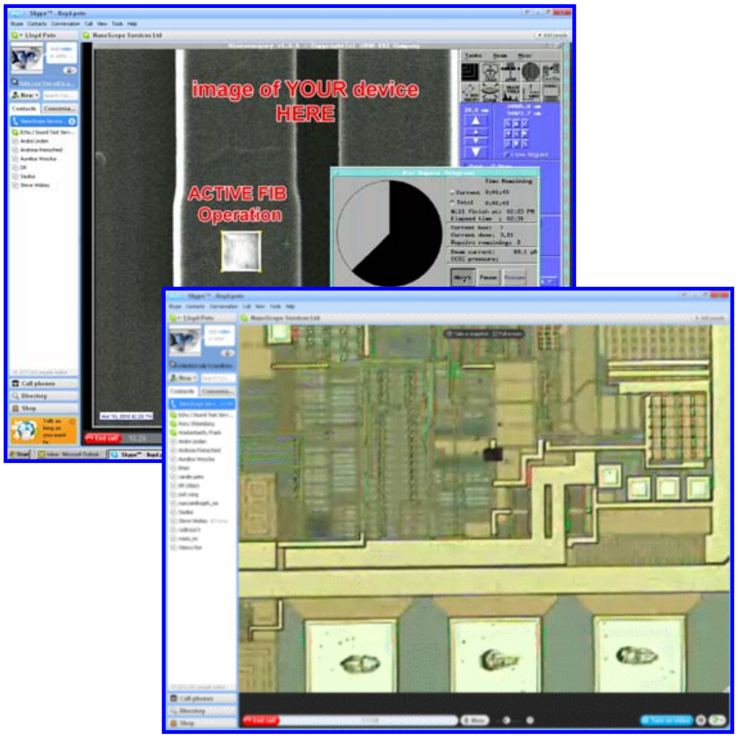
We've extended our unique 'LiveFIB^{TM}' web conference capability,
*with **high resolution Optical Microscopy**.*

Have you ever wished you could see your samples as they are prepared under the microscope? Without leaving your desk?

By adding web-video optical microscopy to our 'LiveFIB' option, every engineer can now supervise their work on an image they recognise.

NanoScope is proud to launch this latest unique innovation in remote consultancy – you can now review all your samples with the full colour and layer information afforded by high end optical microscopy, over the web, before FIB processing. AND then supervise the live FIB intervention itself, from the comfort of your own desk. Confirm your instructions and co-ordinates are correct, discuss your intervention with our engineer using conferencing tools on live images of your sample, and collect data as you proceed, without leaving your office.

***Like having your own lab in-house*.**
This unique approach is straight forward; simply accept an email invitation to a ***web-based video conference*** on your own PC. Now you can view documents, see a high magnification optical image, or a live FIB image while discussing your work with your operator.
This can help to quickly resolve any potentially time consuming issues as they arise, reducing the need for detailed job preparation, saving time, and reducing cost.



Our first time success rates are proven at >95%

Since 1993 we have been delivering the highest quality of results for our clients. Our engineers ran the 1st European labs for FEI for >15yrs and helped develop both the tools and applications used today.

Why not put your project into the hands of a career FIB technologist at NanoScope and make sure you are getting the best support the technology can offer?
We track the success of all projects to ensure every customer gets the result they need.

2011/12 brought some changes for European FIB support.
The Phasix FA lab in Roborough went into administration. Happily the top engineers were quickly snapped up by local companies.

And Rood Technology lost their top FIB expert to a major design house in Germany.
New engineers need a year of beam time to start hitting high yields for FIB interventions.
If your project is not yielding the results you need, contact us for a competitive quote.

When you need to know right here – why?

Case study of 'Right on Target" analysis.

Understanding the root cause of a failure and the process step which introduced it, is critical to solving yield excursions and delivering customer quality. This is true for any manufacturing process or materials system and no company can risk its reputation on quality issues. Sometimes you can't afford "not to know" – so being able to sequentially get results using multiple techniques from a unique location has a real advantage.

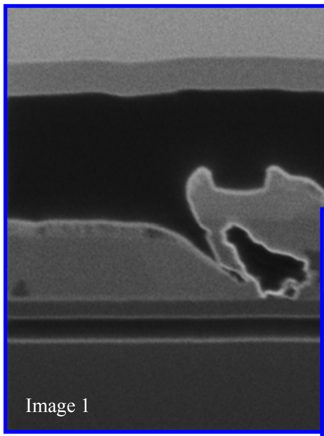


Image 1

This ion beam sectioned particulate under IB-SE imaging (1) presents as a simple oxide flake occurring during Aluminium dep. By checking the ion contrast imaging however it can be seen (2) that the defect extends into the poly-silicon layer below and that the secondary ion contrast does not support the theory of the particle being oxide. The FIB section was converted into a TEM section and extracted to a grid for transfer. Under 200kV bright field imaging (3) the true extent of the defect becomes evident. Diffraction pattern analysis of the particle was inconclusive, and so a series of energy loss maps were collected.

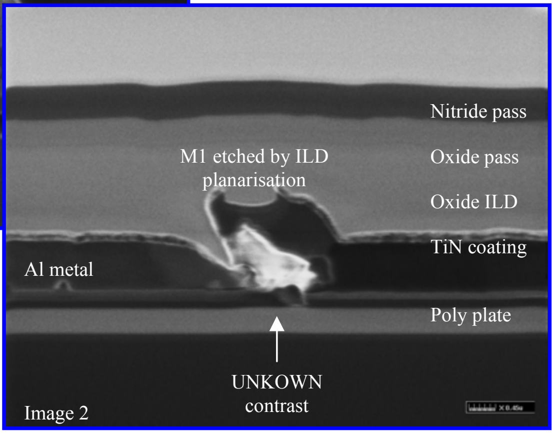


Image 2

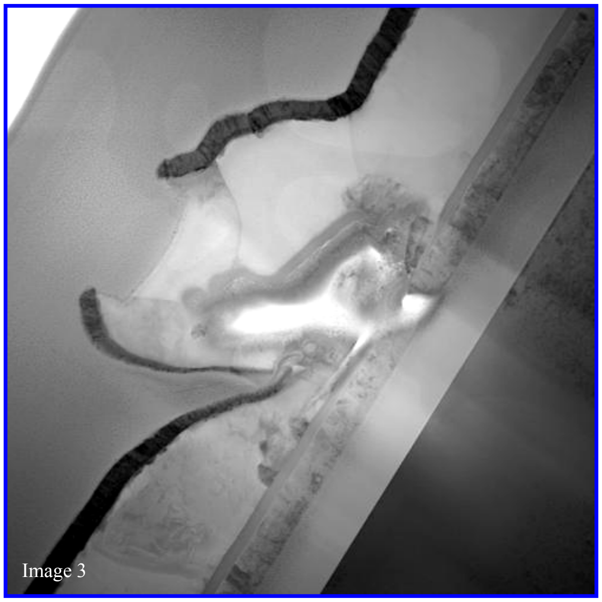


Image 3

This composite image of EELS maps (4) shows that the defect was in fact a residual from a post lithographic cleaning process prior to the poly-silicon process. This directly explains the high ion signal, the diffraction results and the root manufacturing cause – which was correctable prior to a yield excursion affected productivity.

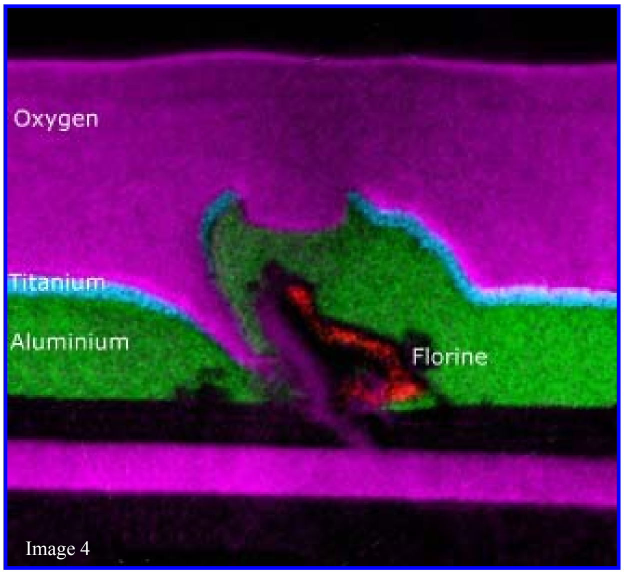


Image 4

New testimonial for Circuit Edit

"Swindon Silicon Systems have been using NanoScope for many years for our FIB work, they always provide a very fast and reliable service. Their knowledge and experience means they give great advice on the success of possible fixes or future fixes."

New testimonial for QA

"Having developed a good working relationship with NanoScope services. IQE (Europe) Ltd. have always found the service friendly, reliable, responsive and professional. The NanoScope team are always willing to engage in meaningful discussion to work through any special customer requirements and or measurement issues. IQE have found it extremely useful being able to call on this wealth of specialist metrology knowledge."

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