

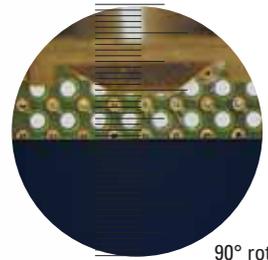


Leica EM TXP

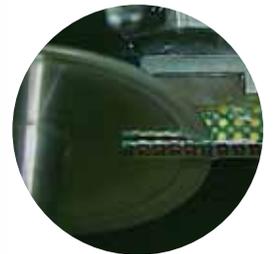
Target Surfacing System

Leica EM TXP – Target Surfacing

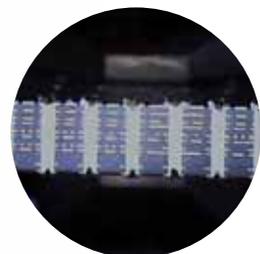
The Leica EM TXP is a unique target preparation device especially developed for cutting and polishing samples prior to examination by SEM, TEM and LM techniques. It excels with challenging specimens where pinpointing and preparing barely visible targets becomes easy. Before the Leica EM TXP, sawing, milling grinding and polishing exactly to the target was often a very time-consuming and difficult procedure as points of interest were easily missed and specimens often difficult to handle due to their small size. With the Leica EM TXP such samples can easily be prepared.



90° rotation view



Processing observation



Front face observation

Leica Design by W. Hölbl

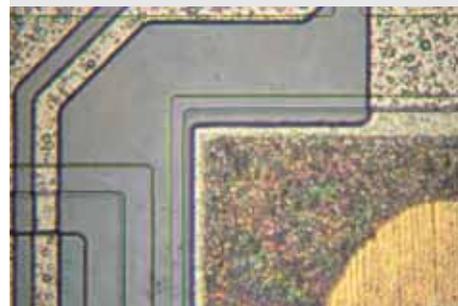
System

Integrated Viewing System

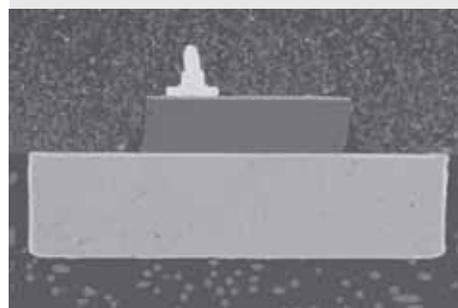
Stereo microscopic target observation during the working process

With the specimen pivot arm the sample can be observed during preparation at an angle between 0° and 60°, directly onto the front face, or 90° to the front face for distance determination with an eyepiece graticule. The Leica EM TXP features brilliant ring LED top light and optimized backlight illumination for excellent viewing.

- **Accurate location and preparation of microtargets**
- **Observation with a stereo microscope**
- **Multifunctional machine processing**
- **Automatic process control to produce a mirror-like surface quality**



Front side decapsulated integrated circuit



SM LED gold wire bond



PCB cross section with soldered pin



PCB cross section

Process Possibilities

Once the sample is clamped into the specimen holder and inserted in the pivot arm, the specimen can be:

- milled
- sawed
- ground
- and polished

without removing the sample from the Leica EM TXP and simply changing the tools while observing the process directly through the stereomicroscope. The tool and sample are enclosed within a protective chamber with a transparent cover for safety. This prevents access to moving parts and avoids particulate matter escaping. During milling a low-noise extraction and filtration unit with a Hepa filter (optional) provides a safe, dust-free environment.



Diamond and tungsten carbide millers



Diamond disc cutter



Lapping inserts 15, 9, 6, 3, 1, 0.5 μm

Integrated Automatic Process Control

Let the Leica EM TXP do the job

The Leica EM TXP automatic process control mechanism saves you from time-consuming routine sample preparation:

- with the automatic E-W guiding mechanism
 - with the force-regulated feed control
 - with the countdown function
- and level sensor for the integrated lubricant cooling system



- **Pivot arm lever**
- **Hand wheel** for manual feed in steps of 0.5, 1, 10 and 100 μm
- **Control panel** for manual operation and setting of all parameters for automatic preparation



Peristaltic cooling system

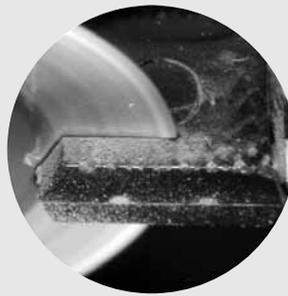
Application Examples

Target preparation on surfaced sample for incident light LM and SEM

All processing steps are carried out consecutively on the Leica EM TXP without removing the sample for pinpointing the area of interest via another microscope or for making any adjustments. Preparing specimens observed during operation with the integrated stereo microscope avoids the time consuming interruption of locating the target with a stand alone microscope and then re-aligning the sample in the polishing instrument.



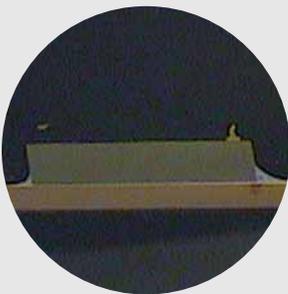
Sawing



Observation via stereo microscope of the Leica EM TXP

Sample Thinning for transmitted light LM or prior to ion thinning for TEM

Specimen thinning with the Leica EM TXP offers the advantage of observing the complete process during treatment and distance monitoring at each process step without the need to remove the sample for checking in another instrument.



1st side preparation as described above.



Mill a supporting stub with the disc cutter so it is parallel to the prepared face in step 1. Set the advance counter to zero.



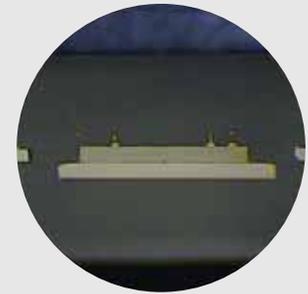
Fix the prepared 1st side with wax onto the prepared stub without removing it from the holder.



Or directly in the Leica EM TXP with glue.



Grinding/polishing



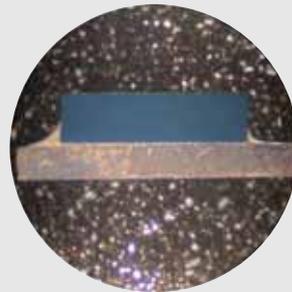
The area of interest via the stereo microscope of the Leica EM TXP



The saw is set to the desired value (e.g. 100 μm) and the second side preparation begins (here sawing).

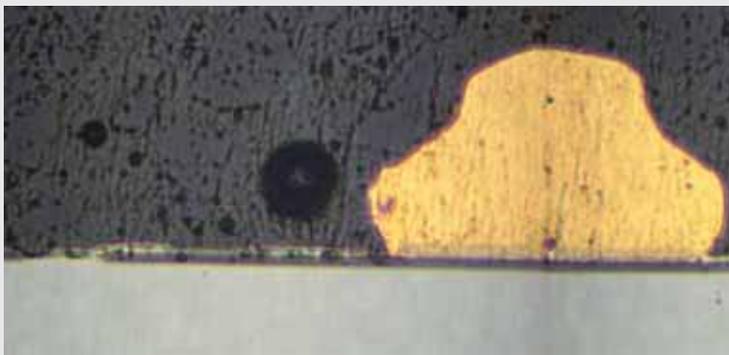


The second side is then polished. The thickness of the sample can be observed on the advance counter display.



Front face observation with the Leica EM TXP. Here the sample thickness is 25 μm .

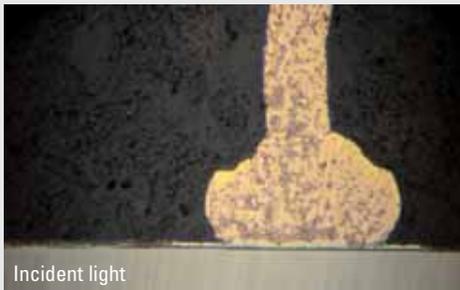




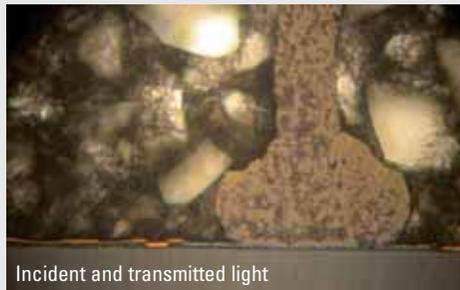
Result: Target-prepared integrated circuit. Gold wire bonding on Si (LM image)



IC: Silicon soldered on copper paddle



Incident light



Incident and transmitted light



Transmitted light

Result: Target prepared integrated circuit. Gold wire bonding on Si 25 μm section (LM image)

View the Details



Leica Microsystems – the brand for outstanding products

Leica Microsystems' mission is to be the world's first-choice provider of innovative solutions to our customers' needs for vision, measurement and analysis of microstructures.

Leica, the leading brand for microscopes and scientific instruments, developed from five brand names, all with a long tradition: Wild, Leitz, Reichert, Jung and Cambridge Instruments. Yet Leica symbolizes innovation as well as tradition.

Leica Microsystems – an international company with a strong network of customer services

Australia:	North Ryde	Tel. +61 2 8870 3500	Fax +61 2 9878 1055
Austria:	Vienna	Tel. +43 1 486 80 50 0	Fax +43 1 486 80 50 30
Canada:	Richmond Hill/Ontario	Tel. +1 905 762 2000	Fax +1 905 762 8937
Denmark:	Herlev	Tel. +45 4454 0101	Fax +45 4454 0111
France:	Rueil-Malmaison	Tel. +33 1 47 32 85 85	Fax +33 1 47 32 85 86
Germany:	Bensheim	Tel. +49 6251 136 0	Fax +49 6251 136 155
Italy:	Milan	Tel. +39 0257 486.1	Fax +39 0257 40 3475
Japan:	Tokyo	Tel. + 81 3 5421 2800	Fax +81 3 5421 2896
Korea:	Seoul	Tel. +82 2 514 65 43	Fax +82 2 514 65 48
Netherlands:	Rijswijk	Tel. +31 70 4132 100	Fax +31 70 4132 109
People's Rep. of China:	Hong Kong	Tel. +852 2564 6699	Fax +852 2564 4163
Portugal:	Lisbon	Tel. +351 21 388 9112	Fax +351 21 385 4668
Singapore		Tel. +65 6779 7823	Fax +65 6773 0628
Spain:	Barcelona	Tel. +34 93 494 95 30	Fax +34 93 494 95 32
Sweden:	Kista	Tel. +46 8 625 45 45	Fax +46 8 625 45 10
Switzerland:	Heerbrugg	Tel. +41 71 726 34 34	Fax +41 71 726 34 44
United Kingdom:	Milton Keynes	Tel. +44 1908 246 246	Fax +44 1908 609 992
USA:	Bannockburn/Illinois	Tel. +1 847 405 0123	Fax +1 847 405 0164

and representatives of Leica Microsystems
in more than 100 countries.

The companies of the Leica Microsystems Group operate internationally in three business segments, where we rank with the market leaders.

● Microscopy Systems

Our expertise in microscopy is the basis for all our solutions for visualization, measurement and analysis of microstructures in life sciences and industry. With confocal laser technology and image analysis systems, we provide three-dimensional viewing facilities and offer new solutions for cytogenetics, pathology and materials sciences.

● Specimen Preparation

We provide comprehensive systems and services for clinical histo- and cytopathology applications, biomedical research and industrial quality assurance. Our product range includes instruments, systems and consumables for tissue infiltration and embedding, microtomes and cryostats as well as automated stainers and coverslippers.

● Medical Equipment

Innovative technologies in our surgical microscopes offer new therapeutic approaches in microsurgery.