

Near-Axis TKD (NA-TKD)

Highest sensitivity TKD solution, enhancing the capabilities of your CMOS EBSD system

Our **Near-Axis TKD (NA-TKD)** solution provides the highest sensitivity of any TKD system on the market. The combination of our NA-TKD geometry and our market leading **Symmetry S3** detector gives **10x** the sensitivity compared to conventional TKD, while taking advantage of all the benefits of our Symmetry S3 detector.

The improved sensitivity of NA-TKD enables:

- Analysis of beam sensitive materials
- Increased spatial resolution due to reduced probe current
- Higher throughput for existing analysis

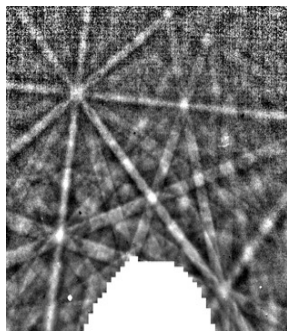
Symmetry S3 is the only EBSD detector that is designed to deliver excellent results from every type of sample. The unique fibre-optic lens system results in exceptional sensitivity for all analytical conditions, from the analysis of beam sensitive materials to routine, high-speed characterisation. The high pixel resolution coupled with guaranteed sub-pixel distortion levels makes the S3 ideal for detailed strain and high-precision EBSD work, while the software-controlled elevation ensures optimised acquisition geometries for every size and shape of sample.



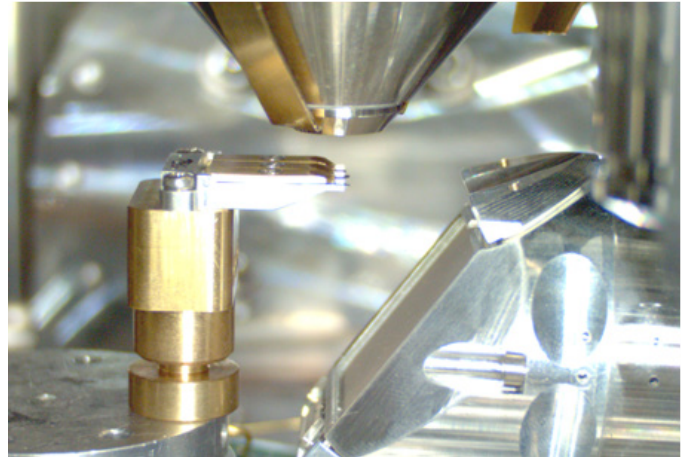
The only all in one market leading EBSD detector just got better!

Easy-to-use data acquisition through AZtec

TKD analysis is different from EBSD. As such, there are different requirements to workflows and software routines. AZtec provides dedicated TKD navigator with acquisition tools, Image processing, Band detection and Indexing routines optimised for TKD analysis. Unique image processing capabilities (patent pending).



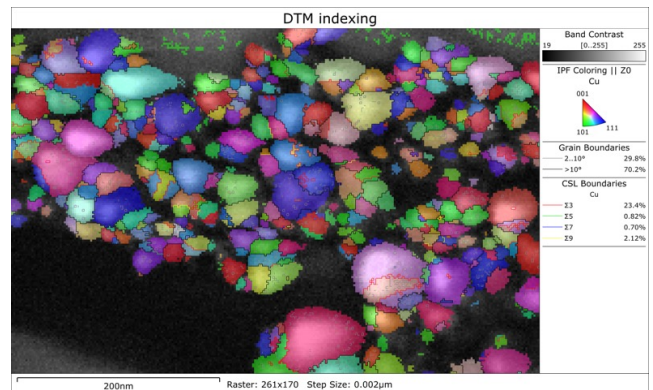
NA-TKD pattern from Perovskite sample. Saturation of the lower part is caused by the primary beam



Chamber scope image of new NA-TKD screen and new sample holder.

The user exchangeable NA-TKD screen makes it easy to work in an optimised setup for TKD – extending the capabilities of the CMOS detector series.

The solution is compatible and easy to retrofit on existing CMOS EBSD detectors.



Cu nanoparticles on C support grid were analysed using TKD, data processed using MapSweeper.

Data enhancement using MapSweeper

MapSweeper enables image correlation between experimental EBSD patterns (EBSPs) and simulated EBSPs to enhance data quality:

- Improve angular precision of data
- Index poor quality EBSPs
- Improve hit rate and remove indexing errors
- Resolve phase discrimination errors

The NA-TKD package includes:

- NA-TKD screen exchange kit

The kit contains all items required for a user to exchange the screen on their CMOS detector, including supporting instructions.

- NA-TKD screen
- NA-TKD clamp with 5 diodes
- Screen storage boxes
- Tools for exchanging screen
- Written instruction and video



- The latest AZtec software version with dedicated TKD Mapping navigator.

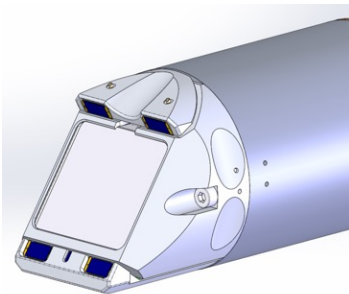
- Bespoke sample holder kit for NA-TKD

The geometry for NA-TKD is different from conventional TKD. As such, not all existing TKD holders are suitable. Our NA-TKD sample holder kit is designed specifically for NA-TKD geometry, however, it can also be used for conventional TKD. The kit contains:

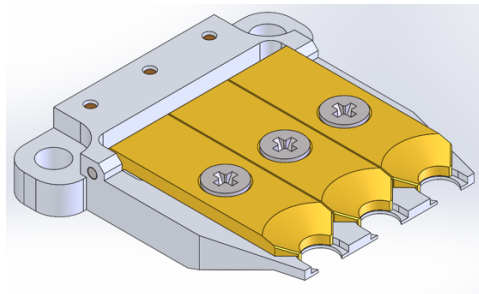
- Sample holder
- Adapters for attaching to SEM stages
- Loading stand
- Tools and tweezers
- Written instructions



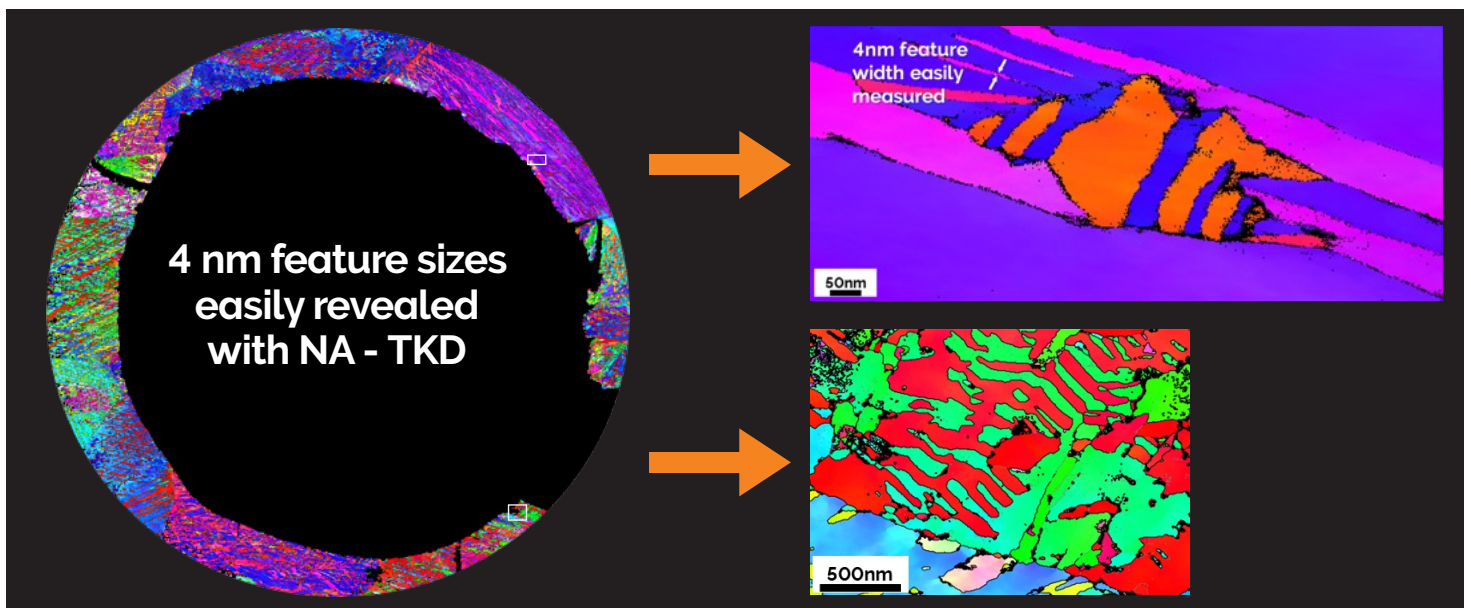
Convenient packaging for all your NA-TKD tools



NA-TKD screen with diodes for imaging using orientation and atomic number contrast.



New sample holder design that can hold three samples at once, maximising efficiency.



NA-TKD easily reveals 4 nm feature size in 304 Steel. Large area map of TEM foil captured at 50 nm step size. Bottom right: captured using 5 nm step size and Top right: captured using 2 nm step size.

Visit nano.oxinst.com/NA-TKD

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