EDAX OIM Analysis

Product Bulletin – EBSD

EDAX OIM Analysis™ – The premier microstructural visualization and analysis tool for interrogating and understanding electron backscatter diffraction (EBSD) mapping data. With as little as one click, see how this powerful tool can map large, multidimensional data sets or draw from the most comprehensive analysis portfolio to characterize challenging materials. OIM Analysis not only delivers unprecedented insight into material properties but makes EBSD analysis accessible to novice and expert users alike.

Get a head start on your analysis with Quick-Gen

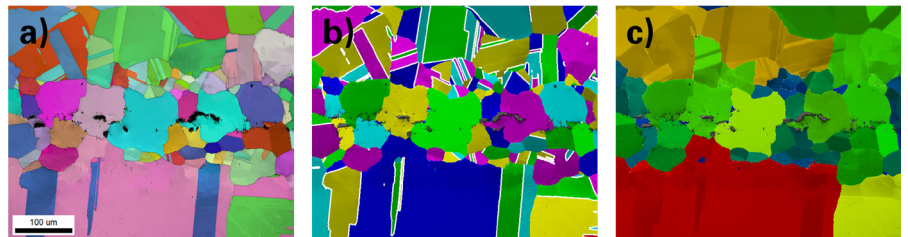- With one click answer the most common questions using predefined analysis tools and templates

Figure 1. Customized maps showing a) EBSD image quality and IPF orientations, b) PRIAS and grain color maps with twin boundaries, and c) grain size maps after twin removal from a high entropy alloy brazing.

- Turn your custom analyses into one-click Quick-Gen templates for repeated use and to shorten your time to an answer

- Reproducibly process large, multidimensional datasets or projects with batch processing templates to monitor microstructural changes across samples, time, or temperature
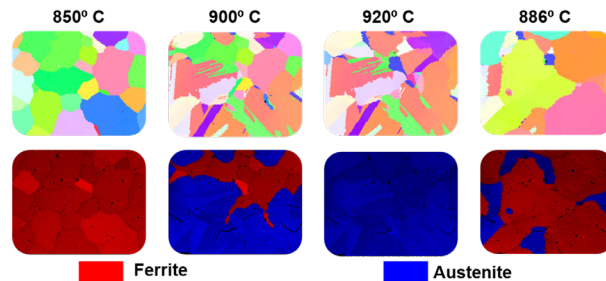

Figure 2. Orientation and phase maps showing the transitions between the BCC ferrite phase and the FCC austenite phase during *in-situ* heating.

- Highlight regions of interest and define partitions to easily identify and separate microstructural changes within your data
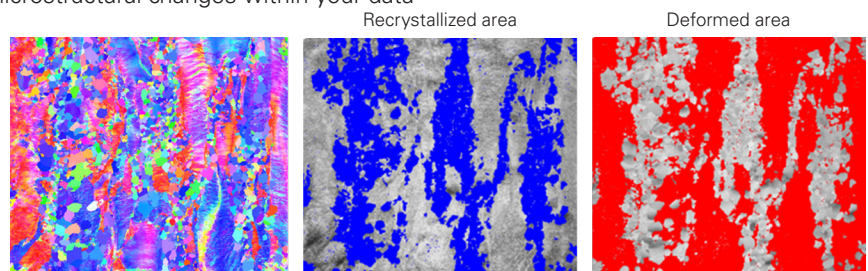

Figure 3. In this partially recrystallized steel sample, the deformed and recrystallized areas can be identified and analyzed individually to better understand recrystallization behavior.

- One-click to an answer, regardless of the data size or complexity of your analysis

- Most comprehensive analysis portfolio allows you to clearly visualize deformed microstructures and accurately analyze complex materials

- Interactive analysis interface helps you find key contributors or outliers in your microstructure

- Measure difficult or previously unusable samples using the biggest analysis toolbox available

Capabilities

- Comprehensive selection of mapping options for microstructural visualization

- Charts quantitative distributions from measured microstructure

- Texture plots enable analysis of preferred orientation distributions

- Partitioning simplifies analysis of data subsets

- Data highlighting allows visual comparison of measurements

- Quick-Gen toolbar for fast access to common functions

- Data templates for repeatable, customized analysis

- Batch processor analyses multiple datasets

- EBSD pattern indexing for off-line rescanning of EBSD data

- ChI-Scan™ multiphase analysis

- PRIAS™ imaging

- Optional NPAR™ functionality

- Optional OIM Matrix™ with spherical indexing

- Optional 3D visualization

All the tools you need to understand your samples

- Clearly see deformed microstructures at <0.01° resolution to improve orientation precision and reduce noise in misorientation-based maps

- Enable every EDAX system to acquire equivalent or better orientation results 100x faster than HR-EBSD
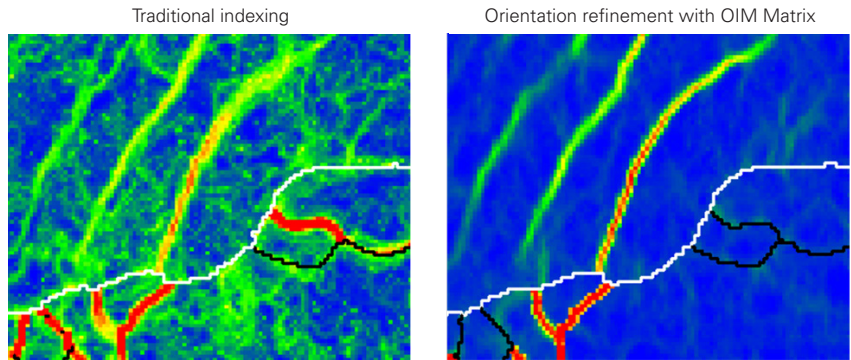

Figure 4. OIM Matrix improves orientation precision and removes noise in the KAM map from an additively manufactured 316L alloy.

- Leverage interactive maps and plots to interrogate, link, visualize, and measure your data to find key contributors or outliers in your microstructures

- Accurately measure and quantify directional misorientations within distinct regions of interest

- Eliminate ambiguity and error in multiphase samples by using ChI-Scan to analyze EDS and EBSD data simultaneously
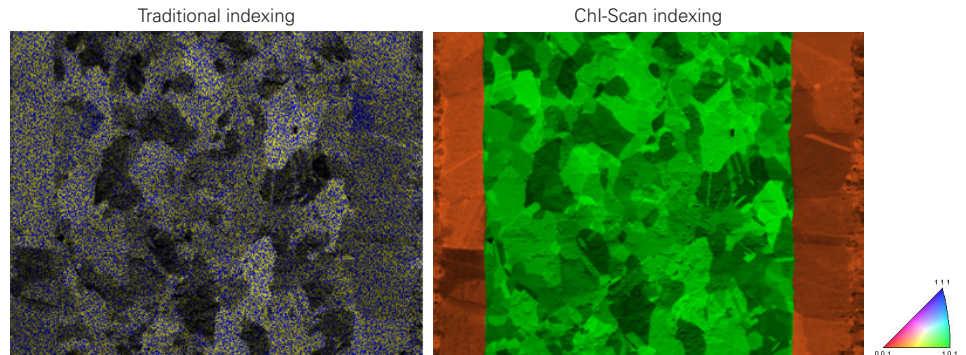

Figure 5. Phase maps showing how ChI-Scan can use combined EDS and EBSD information to eliminate the ambiguities between similar crystallographic structures and show clear phase maps. Phase map before (left) and after (right) ChI-Scan analysis. The green phase is Kovar (FeNiCo) and the orange phase is copper, both with FCC crystal structures.

Unique solutions to your problems

- Combine spherical indexing with NPAR to improve EBSD pattern indexing; turning previously unusable patterns into measurable results

- Utilize the biggest toolbox for analyzing difficult samples through unique solutions like NPAR, PRIAS, and spherical indexing

- Find the subtle differences between similar crystal structures using dynamic diffraction-based pattern simulations

- See more of your sample with PRIAS imaging that provides orientation, atomic number, and topographic contrasts automatically without additional hardware

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