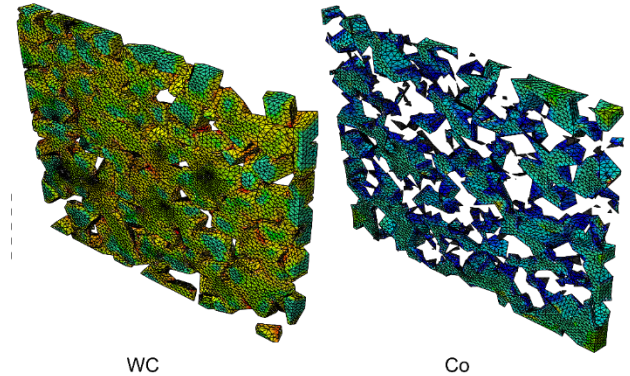


Bachelor/Master thesis

Modelling of 3D-Microstructures out of EBSD data

The Project

For finite element simulations of hard metals a three-dimensional representation of the microstructure is essential. As a starting point, 3D-EBSD (Electron BackScatter Diffraction) data is available. These measurements include a crystallographic 2D-mapping of the material, hence a reconstruction of phases and grain boundaries is possible. Via layerwise material removal a three-dimensional dataset has been collected. The aim of the thesis is the representation of the measurement data



in a 3D-model, which is later used for FE-simulations. The tool should be developed in MATLAB. For the analysis of the crystallographic data, the open source toolbox “MTEX” is used.

Your tasks

- Development of an automated tool for analysis of 2D-EBSD data for hard metals
- Reconstruction of 3D-EBSD data to a 3D model of the microstructure

Requirements

- Ability to work independently
- Previous knowledge in MATLAB
- Advantageous: knowledge in material science and crystallography

We offer

Good working atmosphere and comprehensive training. An efficient completion of the work is desirable and therefore supported by our side. The thesis can be scaled flexible for the conditions of a bachelor and a master thesis.

Contact

Stephan Genilke M.Sc.
Augustinerbach 4, Room 202
52062 Aachen
Tel.: +49 241 80 99542
S.Genilke@iwm.rwth-aachen.de
www.iwm.rwth-aachen.de