

Phase Differentiation Reliability in Automated Electron Backscatter Diffraction

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Automated Electron Backscatter Diffraction (EBSD) or Orientation Imaging Microscopy is well suited for investigating orientation relationships between phases. In studying phase transformations, the chemical compositions between the parent and child phases are typically quite similar, if not identical (i.e. austenite and ferrite) but are dissimilar crystallographically. EBSD is well suited to automatically differentiating such phases. However, many of the phases considered in phase transformation studies are also similar or identical crystallographically (i.e. austenite and martensite). In these cases, post-processing techniques must be used to differentiate between phases. This presentation will examine novel techniques used to differentiate phases both during the collection of EBSD data as well as after a set of EBSD data has been collected. Methodologies for predicting the reliability of the phase differentiation procedure during data collection will be presented.