

3D Characterization of Recrystallization Boundaries - DTU Orbit (09/11/2017)

3D Characterization of Recrystallization Boundaries

A three-dimensional (3D) volume containing a recrystallizing grain and a deformed matrix in a partially recrystallized pure aluminum was characterized using the 3D electron backscattering diffraction technique. The 3D shape of a recrystallizing boundary, separating the recrystallizing grain and deformed matrix, was reconstructed. The result shows a very complex structure containing several large protrusions and retrusions. A correlation between the protrusions/retrusions and the deformed matrix in front of the boundary shows that the deformed microstructure has a very strong influence on the formation of protrusions/retrusions.

General information

State: Published

Organisations: Department of Wind Energy, Materials science and characterization, Center for Electron Nanoscopy, Tsinghua University

Authors: Zhang, Y. (Intern), Godfrey, A. W. (Ekstern), MacDonald, A. N. (Intern), Juul Jensen, D. (Intern)

Pages: 31-36

Publication date: 2016

Host publication information

Title of host publication: 1st International Conference on 3D Materials Science

Publisher: Springer International Publishing

Series: Proceedings of the 1st International Conference on 3d Materials Science

Main Research Area: Technical/natural sciences

Materials Science, Structural Materials, Characterization and Evaluation of Materials, Materials Engineering, grain boundary, recrystallization, aluminum, protrusion/retrusion

DOIs:

10.1007/978-3-319-48762-5_5

Source: FindIt

Source-ID: 2372091939

Publication: Research - peer-review › Article in proceedings – Annual report year: 2017