

Elastic interaction between twins during tensile deformation of austenitic stainless steel - DTU Orbit (09/11/2017)

Elastic interaction between twins during tensile deformation of austenitic stainless steel

In austenite, the twin boundary normal is a common elastically stiff direction shared by the two twins, which may induce special interactions. By means of three-dimensional X-ray diffraction this elastic interaction has been analysed and compared to grains separated by conventional grain boundaries. However, the components of the Type II stress normal to the twin boundary plane exhibit the same large variations as for the grain boundaries. Elastic grain interactions are therefore complex and must involve the entire set of neighbouring grains. The elastic-regime stress along the tensile direction qualitatively depends on the grain orientation, but grain-to-grain variations are large.

General information

State: Published

Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, Department of Physics, Cornell High Energy Synchrotron Source, Air Force Research Laboratory

Authors: Juul, N. Y. (Intern), Winther, G. (Intern), Dale, D. (Ekstern), Koker, M. K. (Ekstern), Shade, P. (Ekstern), Oddershede, J. (Intern)

Number of pages: 4

Publication date: 2016

Main Research Area: Technical/natural sciences

Publication information

Journal: Scripta Materialia

Volume: 120

ISSN (Print): 1359-6462

Ratings:

BFI (2017): BFI-level 2

Web of Science (2017): Indexed yes

BFI (2016): BFI-level 2

Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696

Web of Science (2016): Indexed yes

BFI (2015): BFI-level 2

Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54

Web of Science (2015): Indexed yes

BFI (2014): BFI-level 2

Scopus rating (2014): SJR 2.744 SNIP 2.124 CiteScore 3.55

Web of Science (2014): Indexed yes

BFI (2013): BFI-level 2

Scopus rating (2013): SJR 2.347 SNIP 1.975 CiteScore 3.19

ISI indexed (2013): ISI indexed yes

Web of Science (2013): Indexed yes

BFI (2012): BFI-level 2

Scopus rating (2012): SJR 2.309 SNIP 2.022 CiteScore 3.01

ISI indexed (2012): ISI indexed yes

Web of Science (2012): Indexed yes

BFI (2011): BFI-level 2

Scopus rating (2011): SJR 2.333 SNIP 2.108 CiteScore 3.21

ISI indexed (2011): ISI indexed yes

Web of Science (2011): Indexed yes

BFI (2010): BFI-level 2

Scopus rating (2010): SJR 2.445 SNIP 2.125

Web of Science (2010): Indexed yes

BFI (2009): BFI-level 2

Scopus rating (2009): SJR 2.574 SNIP 2.02

Web of Science (2009): Indexed yes

BFI (2008): BFI-level 2

Scopus rating (2008): SJR 2.634 SNIP 2.128

Web of Science (2008): Indexed yes

Scopus rating (2007): SJR 2.229 SNIP 2.174

Web of Science (2007): Indexed yes

Scopus rating (2006): SJR 2.1 SNIP 1.915

Web of Science (2006): Indexed yes

Scopus rating (2005): SJR 1.831 SNIP 1.915

Web of Science (2005): Indexed yes

Scopus rating (2004): SJR 1.464 SNIP 1.731

Web of Science (2004): Indexed yes

Scopus rating (2003): SJR 1.499 SNIP 1.709

Web of Science (2003): Indexed yes

Scopus rating (2002): SJR 1.509 SNIP 1.345

Web of Science (2002): Indexed yes

Scopus rating (2001): SJR 1.301 SNIP 1.361

Web of Science (2001): Indexed yes

Scopus rating (2000): SJR 1.268 SNIP 1.123

Web of Science (2000): Indexed yes

Scopus rating (1999): SJR 1.53 SNIP 1.162

Original language: English

Tension test, Three-dimensional X-ray diffraction (3DXRD), Austenitic steels, Elastic behaviour, Twinning
DOIs:

10.1016/j.scriptamat.2016.03.022

Source: FindIt

Source-ID: 2303588695

Publication: Research - peer-review › Journal article – Annual report year: 2016