Expanded austenite, crystallography and residual stress - DTU Orbit (31/03/2019)

Expanded austenite, crystallography and residual stress

The identity of expanded austenite as developing during low temperature nitriding and/or carburising of austenitic stainless steel has been under debate since the very first observation of this phase. In the present article, recent results obtained with (a) homogeneous samples of various uniform compositions and (b) unravelling of the contributions of stress-depth and composition-depth profiles in expanded austenite layers are summarised and discussed. It is shown through simulation of line profiles that the combined effects of composition gradients, stress gradients and stacking fault gradients can explain the observations in typical X-ray diffractograms.

General information
State: Published
Organisations: Materials and Surface Engineering, Department of Mechanical Engineering
Contributors: Christiansen, T., Hummelshøj, T. S., Somers, M. A. J.
Pages: 242-247
Publication date: 2010
Peer-reviewed: Yes

Publication information
Journal: Surface Engineering
Volume: 26
Issue number: 4
ISSN (Print): 0267-0844
Ratings:
BFI (2019): BFI-level 1
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2 SJR 0.572 SNIP 0.919
Web of Science (2017): Impact factor 1.978
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.29 SJR 0.424 SNIP 0.736
Web of Science (2016): Impact factor 1.347
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.13 SJR 0.417 SNIP 0.656
Web of Science (2015): Impact factor 1.081
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.34 SJR 0.442 SNIP 0.827
Web of Science (2014): Impact factor 1.197
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.54 SJR 0.591 SNIP 0.848
Web of Science (2013): Impact factor 1.51
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.5 SJR 0.587 SNIP 0.92
Web of Science (2012): Impact factor 1.545
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0.88 SJR 0.374 SNIP 0.76
Web of Science (2011): Impact factor 0.937
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1