



Contribution ID: 256

Type: Poster

[192] Local-probe based electrical characterization of a multiphase intermetallic gamma-TiAl based alloy

Tuesday 31 August 2021 19:21 (1 minute)

High-performance and sustainable technologies call for novel light-weight high-temperature structural materials as gamma-TiAl-based alloys, which –in terms of weight –clearly outperform classical Ni based alloys. The typical research focus lies on their mechanical properties. However, in order to correctly interpret electrical materials testing techniques also their electrical behavior is important. Here, local-probe techniques, like conductive atomic force microscopy (CAFM) and micro four-point probe (μ 4PP) measurements, were used to determine the specific resistivity of the constituent phases of a technical Ti-43.5Al-4Nb-1Mo-0.1B (at%) gamma-TiAl based alloy. The different phases exhibit noticeably different resistivity values varying over two orders of magnitude.

Author: KRATZER, Markus (Institute of Physics, Montanuniversitaet Leoben, Franz-Josef-Str. 18, A-8700 Leoben, Austria)

Co-authors: Mr HUSZAR, Michael (Institute of Physics, Montanuniversitaet Leoben, Franz-Josef-Str. 18, A-8700 Leoben, Austria); Ms TENGG, Lisa (Department of Materials Science, Montanuniversitaet Leoben, Franz-Josef-Str. 18, A-8700 Leoben, Austria); Mr BILLOVITS, Thomas (Institute of Structural and Functional Ceramics, Montanuniversitaet Leoben, Peter-Tunner-Str. 5, A-8700 Leoben, Austria); Dr KAUFMANN, Benjamin (Institute of Structural and Functional Ceramics, Montanuniversitaet Leoben, Peter-Tunner-Str. 5, A-8700 Leoben, Austria); Prof. SUPANCIC, Peter (Institute of Structural and Functional Ceramics, Montanuniversitaet Leoben, Peter-Tunner-Str. 5, A-8700 Leoben, Austria); Prof. CLEMENS, Helmut (Department of Materials Science, Montanuniversitaet Leoben, Franz-Josef-Str. 18, A-8700 Leoben, Austria); Dr MAYER, Svea (Department of Materials Science, Montanuniversitaet Leoben, Franz-Josef-Str. 18, A-8700 Leoben, Austria); Prof. TEICHERT, Christian (Institute of Physics, Montanuniversitaet Leoben, Franz-Josef-Str. 18, A-8700 Leoben, Austria)

Presenter: KRATZER, Markus (Institute of Physics, Montanuniversitaet Leoben, Franz-Josef-Str. 18, A-8700 Leoben, Austria)

Session Classification: Poster Session

Track Classification: Condensed Matter Physics (KOND)