

Accepted Manuscript

Increasing the creep resistance of Fe-Ni-Al-Cr superalloys via Ti additions by optimizing the B2/L2₁ ratio in composite nano-precipitates

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PII: S1359-6454(18)30553-6

DOI: [10.1016/j.actamat.2018.07.025](https://doi.org/10.1016/j.actamat.2018.07.025)

Reference: AM 14702

To appear in: *Acta Materialia*

Received Date: 3 April 2018

Revised Date: 7 June 2018

Accepted Date: 9 July 2018

Please cite this article as: S.-I. Baik, S.-Y. Wang, P.K. Liaw, D.C. Dunand, Increasing the creep resistance of Fe-Ni-Al-Cr superalloys via Ti additions by optimizing the B2/L2₁ ratio in composite nano-precipitates, *Acta Materialia* (2018), doi: 10.1016/j.actamat.2018.07.025.

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Graphical Abstract

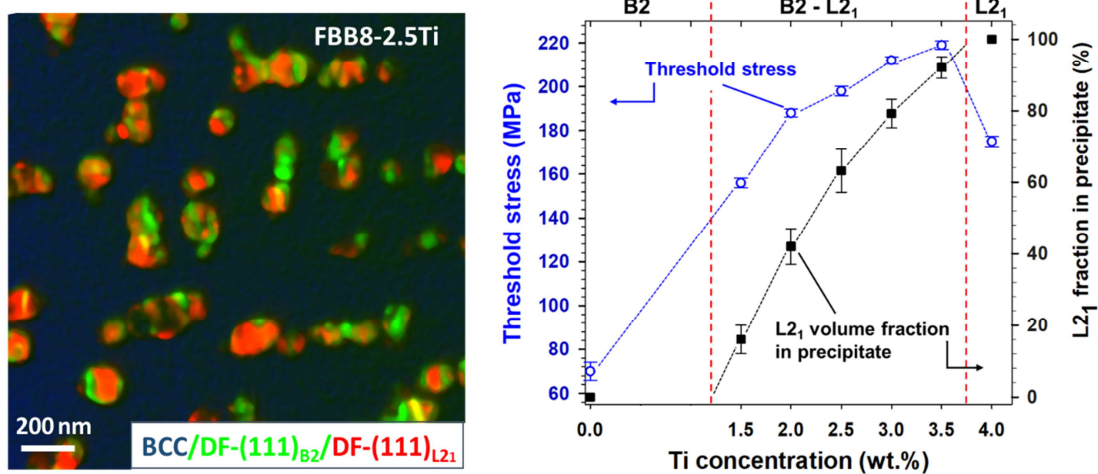


Figure descriptions

(Left) Dark-field TEM micrograph of Fe-Ni-Al-Cr-Mo FBB8 ferritic alloy modified with 2.5%Ti aged at 700 °C, showing B2 precipitates (green) and Ti-rich L₂₁ sub-precipitates (red). (Right) Plots of the L₂₁ volume fraction within B2/L₂₁ precipitates and creep threshold stress (σ_{th}) as a function of the Ti concentration in the FBB8 alloys.

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