

PROJECT

TiAlCracks

Crack growth threshold analysis in TiAl alloys

Funding: European (Horizon 2020)

Duration: Mar 2016 - Oct 2019

Status: Complete

Total project cost: €439,183

EU contribution: €439,183



Call for proposal: H2020-CS2-CFP01-2014-01

[CORDIS RCN : 199486](#)

Objectives:

The objective of the project is to investigate the fatigue crack growth (FCG) threshold and rate for long as well as short cracks of second generation TiAl alloys suitable for use in the Intermediate Pressure Turbine (IPT) of the UltraFan™ engine.

The work includes in detail all investigations specified in the Call for Proposals JTI-CS2-2014-CFP01-ENG-03-04, that are:

- determination of the FCG threshold and rates at load ratios R of 0.1, 0.5, 0.8 at room temperature and at 750 °C,
- determination of the variation of these material properties at room temperature for three different heat treatments (centre and extremes of the heat treatment window) at load ratios R of 0.1, 0.5, 0.8, and
- determination of the effect of defect type (defects from manufacturing, handling and foreign object damage (FOD)), morphology and size on the fatigue properties at room temperature and at 750 °C at load ratios R of 0.1, 0.5, 0.8.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Materials Center Leoben Forschung GmbH

Address:

ROSEGGERSTRASSE 12
8700 LEOBEN
Austria

Organisation Website:

<http://www.mcl.at>

EU Contribution: €439,183

Technologies:

Manufacturing processes
Titanium alloy

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other