

PROJECT

CIDAR

Combustion species Imaging Diagnostics for Aero-engine Research

Funding: European (Horizon 2020)

Duration: Mar 2018 - Aug 2020

Status: Complete

Total project cost: €2,231,770

EU contribution: €2,006,738



Call for proposal: H2020-CS2-CFP06-2017-01

[CORDIS RCN : 213940](#)

Objectives:

The CIDAR project is the result of a Consortium formed by Academic Parties (Manchester, Strathclyde and Edinburgh Universities), a Research and Development Organization (INTA) and private companies (DAS and OptoSci). Therefore, CIDAR builds upon the expertise of the UK's and Spain's world-leading groups in fibre-lasers, laser-based gas and particulate detection, opto-electronics, and chemical species tomography (CST), allied to its industrial strengths in aero-engine manufacture and aviation fuel technology.

The CIDAR project aims to establish a world-leading capability in the non-intrusive measurement and 2D imaging of nvPM/soot and CO₂ concentrations in aero-engine exhaust. Non-intrusive planar tomographic measurement of CO₂ will be based on calibration-free Fibre-Laser Absorption Spectroscopy and soot measurements will be based on laser-induced incandescence (LII).

Validation of both imaging technologies will be carried out at the INTA Turbojet Test Centre using large civil turbofan engines, providing data analysis and measurement uncertainty of the current state of the art measurement systems.

The measurement system will then be developed to a maturity level of TRL6 with a clearly identified route to commercialisation.

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)

Other programmes: JTI-CS2-2017-CFP06-ENG-03-16 Development of non-intrusive engine emissions instrumentation capability

Lead Organisation:

Instituto Nacional De Técnica Aeroespacial

Address:

Carretera de Ajalvir Km 4,5
28850 TORREJON DE ARDOZ
Spain

Organisation Website:

<http://www.inta.es>

EU Contribution: €314,525

Partner Organisations:

Das Photonics SI

Address:

CALLE ISLAS CANARIAS, 6 - 8
46023 VALENCIA
Spain

EU Contribution: €422,650

Manchester Metropolitan University

Address:

All Saints Building, Oxford Road
MANCHESTER
M15 6BH
United Kingdom

Organisation Website:

<http://www.mmu.ac.uk>

EU Contribution: €382,764

Optosci Limited

Address:

9 CAMBUSLANG ROAD
GLASGOW
G32 8NB
United Kingdom

EU Contribution: €102,426

The University Of Edinburgh

Address:

Old College, South Bridge
Edinburgh
EH8 9YL
United Kingdom

EU Contribution: €338,996

University Of Strathclyde

Address:

Richmond Street
Glasgow
G1 1XQ
United Kingdom

Organisation Website:

<http://www.strath.ac.uk>

EU Contribution: €445,378

Technologies:

Sensor technologies
Laser Optics

Development phase: Demonstration/prototyping/Pilot Production

STRIA Roadmaps: Vehicle design and manufacturing, Low-emission alternative energy for transport

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Environmental/Emissions aspects

Geo-spatial type: Other