

MITIGATING RISK OF FIRE SMOKE AND FUMES

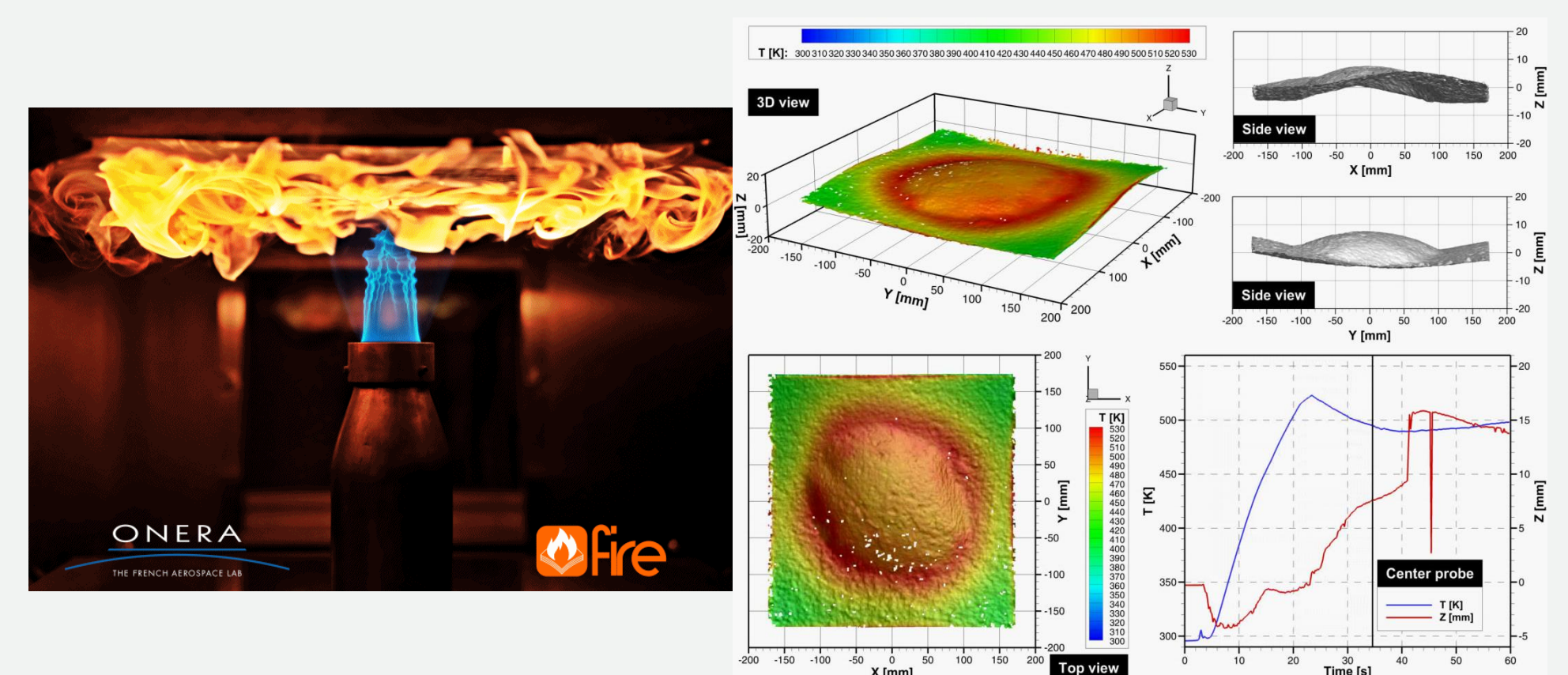
Understanding and characterization of the fire behaviour of primary structures composite materials

Production of a comprehensive experimental database on a reference composite material (T700GC/M21)

- D7.4 Primary structure materials – Test Results (first batch), 2016
- D7.7 Primary structure materials – Test results (2nd batch), 2017

Confrontation of experimental results to state-of-the-art models and simulation tools

- D7.9 Primary structures materials - Models for fire behavior, 2017



3D reconstruction of temperature measurements on the back surface of a composite laminate exposed to fire (FIRE facility @ONERA)

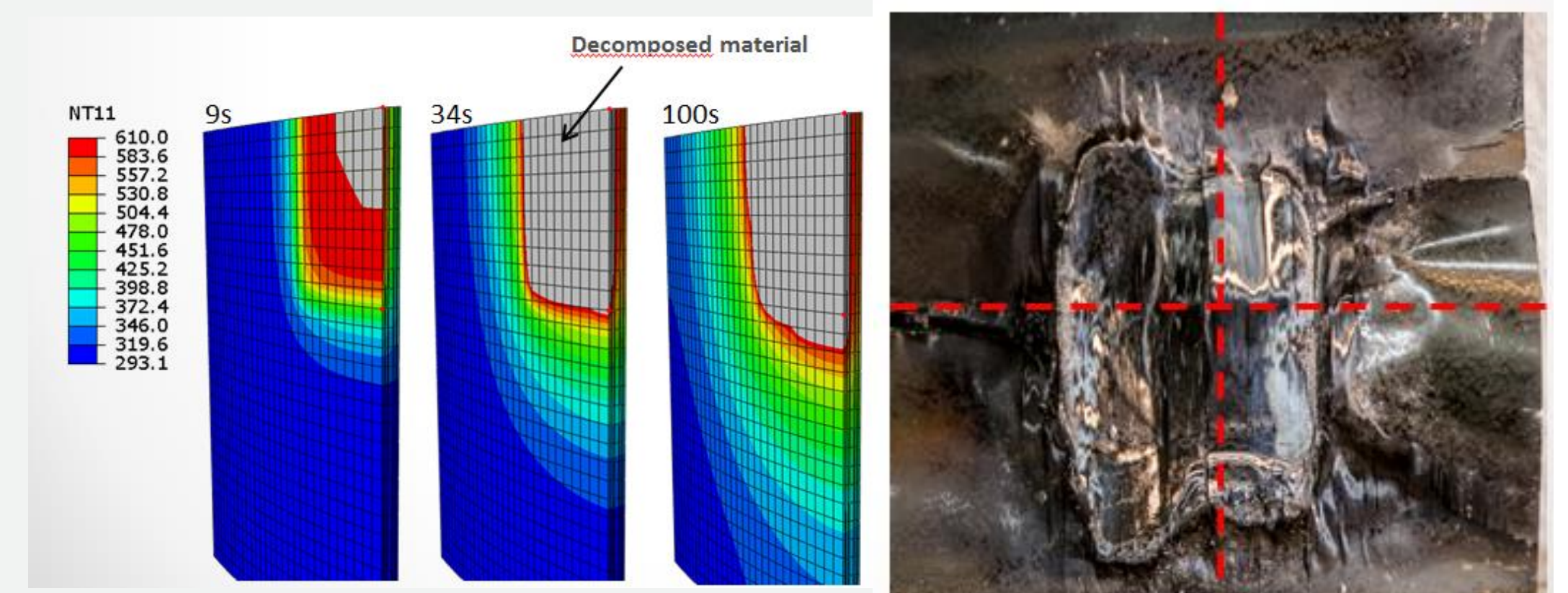
Development and assessment of new material solutions that mitigate risk of fire, smoke and fumes in the cabin environment

Development and characterization of new materials and their combinations for improved fire behaviour of interior and structural materials.

- D7.5 New materials for fire protection in cabin environment – Test results first batch, 2016
- D7.8 New materials for fire protection in cabin environment – Test results second batch, 2018

Modelling of material degradation with respect to fire, fumes and smoke risks in the cabin environment.

- D7.10 Materials for cabin environment protection - Models for material degradation, 2018



Flame penetration test - Comparison of numerical simulation (left) and test result (right)

Cabin air quality: using new technological opportunities to address the growing interest in complex issues (comfort, health, safety)

Industrial cabin air quality Framework based on Continuous Air quality Sensing (IFCAS): feasible pathway to novel applications

Real-time experimental methodology of air quality at normal or elevated temperatures, for new material investigation and COTS sensor testing

- D7.6 On-board air quality: Literature review and methodological survey, 2016
- D7.14 On-board air quality – Final report on the effect of new materials, 2018



Left: IFCAS concept architecture (cabin/cockpit pictures Embraer)

Right: Experimental characterisation of gas emissions at elevated temperatures in real-time using commercial gas sensors and thermal desorption tubes