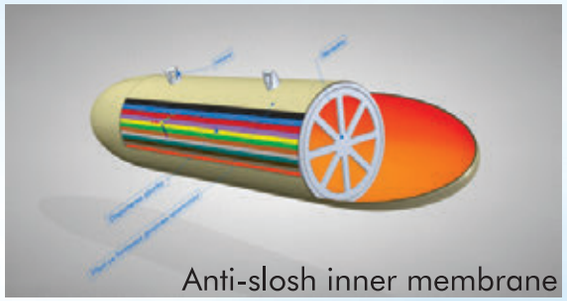
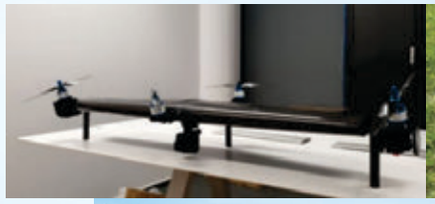
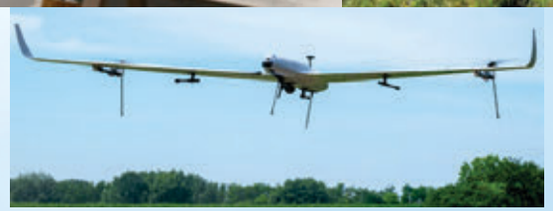
FHACT-Development of CFRP composite external fuel tank attached to IAR Puma Naval helicopter-293/2014-2016

CFRP composite external fuel tank under bending/ jettison tests



Development of UAV structures using CFRP composite/ additive manufacturing reinforced thermoplastic





Composite Materials Laboratory for Aeronautic Field

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Research and development activities related to Aircraft Gas Turbines

Composite Materials Laboratory for Aeronautic Field

AERONAUTIC field

H2020-CleanSky (CSJU) -865007/2019 (2019-2023) – Innovative STATOR-InnoSTAT-Beneficiary Safran Aircraft Engine (France)

Improving the future UHBR turbojet engines, expected to equip new civil aircraft in 2030, by reducing the noise level by 2.5dB.

PHARE-2 testing rig Ecole Centrale de Lyon-France

Modified **slits LE OGV blade** –passive acoustic concept developed by COMOTI (from design up to full scale manufacturing and TRL 4 validation) reducing noise level by 5dB

FP7-234313 (2009-2014) OPENAIR, SNECMA (France)

- Active noise control system integration within the OGV stator fan airfoil structure-contribution to 2.3 dB **noise reduction for civil aircrafts**
- Weight reduction of **50%** -Lower fuel consumption
- OGV structure TRL4/5 validation incl. FBO critical case

SPACE field

Self-Healing Composite Materials for Space Debris impact events-STAR-ROSA ctr.187 (2017-2019)

Carbon composite Antenna, Parabolic Reflector ***embeding self-helaing network*** *for incresed on-orbit mission lifespan*

Solid Reflector with Metal Mesh as the Reflective Surface- MESREF- ctr. 4000130491/2020

CFRP composite support structure -antenna reflector with a reflective metal mesh surface, assuring dimensional stability and accuracy corresponding to the bandwidths L to Ka: mass reduction 25%, very small losses of the reflectivity index and reduced acoustic loads are considered.

Advanced composite Electronic housing Structure for microsatellites -STAR-ROSA ctr. 9/2012-2014

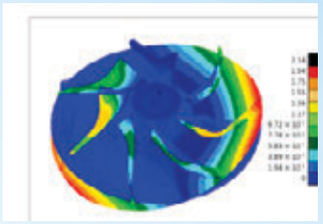
Advanced solar thermal propulsion system for increasing satellite operational life

CFRP composite mirror -Al coating for reflecting sun light /heat it up- N2 gas tank propulsion system

ENERGY field

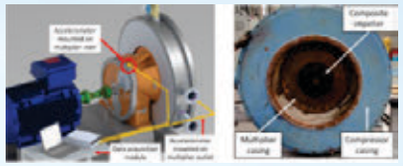
Development vertical axe 4.5 m wind turbine blades x3- C/GFRP composites

Lightweight carbon fiber compressor impeller/blade manufacturing study-ManuCFBladectr.7077/2012-2013



Optimized design: blades number from 17 to 7, x2 thickness, efficiency similar to the reference metallic impeller

CCAE 9-125 compressor



600% mass reduction vibration tests/11,353 rot/min

CFRP composite - Rotor assembly stage I-17-4PH