

Company at a glance

Allovis is an engineering company founded in 2010 by Ing. Paolo PETACCIA and Ph.D. Valerio NOVARESI merging their previous working experiences.

Mission

Allovis is focused on engineering best practices and innovation. We are focused on problem solving approach combining different solution methodologies like numerical simulation, experimental testing, standards scouting, software development and so on. The main goal of the firm is the customer satisfaction and consultancy are provided in a comprehensive way. Our customers consider us as trusted plus value partner for their R&D projects.

Main projects

During last years Allovis on following main project:

- FEM static and dynamics analysis and technical reporting of Aermacchi M346 structures (composite, aluminum and titanium)
- FEM static and dynamics analysis and technical reporting of main rotor cover protection of AgustaWestland AW139 helicopter (composite)
- Development of fatigue software in according to EN 1993 for frame structures of railway equipment.
- Refrigerant gas concentration test in according to SAE 2772:2011
- Several VB & VBA development for aerospace design automation (example Joint & lug analysis)
- 3D design and CFD analysis of piping for pharmaceutical industry
- Methodology development of reliability evaluation of solder joints using explicit non-linear FEM code
- Preliminary summer climate-comfort test (like UNI EN 14750 TL1) of Metro Honolulu (Hawaii) MLA vehicle
- Development of multi-body software for specific production unit
- Summer UNI EN 14750 TL1 passenger compartment's pretest for DB Regio 633 train in Pesa (Poland)
- Development of fluid network simulation software
- Aerial parts characterization using massive CFD analysis and experimental characterization of production lines' air consuming using dedicated air flow meter designed and provided by Allovis
- Non-linear FEM analysis of pods' mould
- Multi body and FEM analysis of turn & repitch unit for production lines
- CFD development, prototype design and technical support for commissioning of new female care forming module
- Development and supply of testing equipment for climate-comfort application based on National Instruments technology
- CAE analysis of fuel-cell devices
- MB, FEM and fatigue analysis on rope planetary machine
- Commissioning and official UNI EN 14750/14813 – TL1 winter test of HVAC system for Metro Genova, Italy
- Support to official UNI EN 14750/14813 – TL1 winter test of HVAC system for Metro Copenhagen, Denmark
- Design and CFD analysis climate comfort system (ducts and air distribution) of High Speed Train HS2;
- Design and test bench assembly for food R&D project (FEM + experimental characterization of visco-plastic food material)
- Design and FEM analysis (non-linear static and vibrational analysis) of HVAC frame for military applications
- Design and FEM analysis of lifting machine for metalwork industry

Hardware and software for CAE activities

- Ansys® suite, OpenFOAM® for CFD analysis
- Femap® with NX Nastran, Altair suite for FEM analysis
- Recurdyn®, mbDyn® for multi bodies analysis
- SolidWorks® for 3D CAD
- In house developed tool for general design and optimization base on MS platform, Linux and Python
- 100 cores HPC on site

Instruments (Acquisition network)

- Up to 120 temperature probes RTD 1/10DIN class
- Up to 10 relative humidity probes (acc. 1.5%)
- Several differential pressure probes, for compartment pressurization and total blower head
- Up to 10 air speed sensors for turbulence measurement
- Power meter 3-phase AC
- Refrigerant gas concentration sensors and relative mass flow controllers for leak test simulation
- Electrical device remote controls

Instruments (Laboratory)

- References temperature and Humidity probe
- Class 1 sound meter with FFT
- Accelerometers, Dynamometers and strain gauges
- Climate chamber -25°C/+80°C
- 5000N motorized test bench for tensile & compressive test, with thermal conditioning, for numerical material characterization

Certifications

ISO 9001:2015