

THE CONTEXT

The laboratory extends and integrates the activities of Transport Safety Lab (LaST) of Politecnico di Milano in the field of electric vehicle safety. The project is being developed within the EU-funded Sustainable Mobility Center (MOST).

THE SCOPE

The laboratory focuses on the structural integration, impact tolerance, and crashworthiness of electric energy storage systems in aerospace and automotive vehicles. The expertise of Department of Aerospace Science and Technology (DAER) in the field of innovative structures and advanced materials provides all the knowledge required to conceive, analyse, and test optimal structural solutions for the next generation of vehicles for sustainable mobility.



POLITECNICO DI MILANO



MOST Spoke 1 Air mobility

LAB FOR ELECTRIC AIRCRAFT
AND VEHICLES SAFETY

FOR FURTHER INFORMATION

on DAER facilities
www.aero.polimi.it

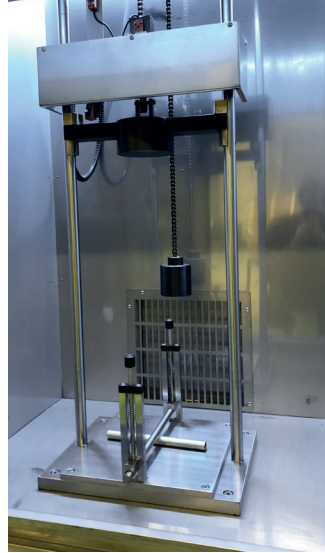
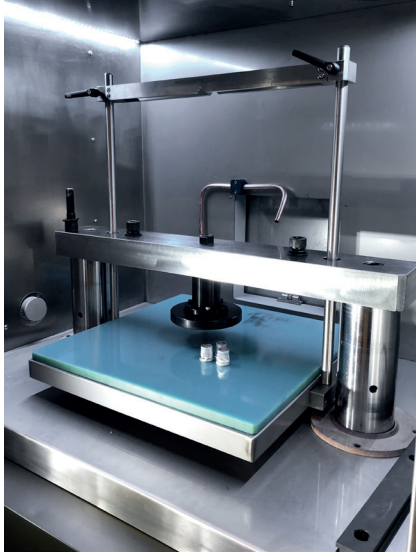
on research teams
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MOST
CENTRO NAZIONALE PER LA MOBILITÀ SOSTENIBILE



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ENVIRONMENTS

Three specific testing environments are available for electric energy storage systems:

- a customized battery nail penetration/crush tester
- a battery drop test chamber
- an external drop tower for drops up to 15 m

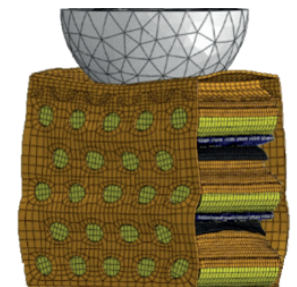
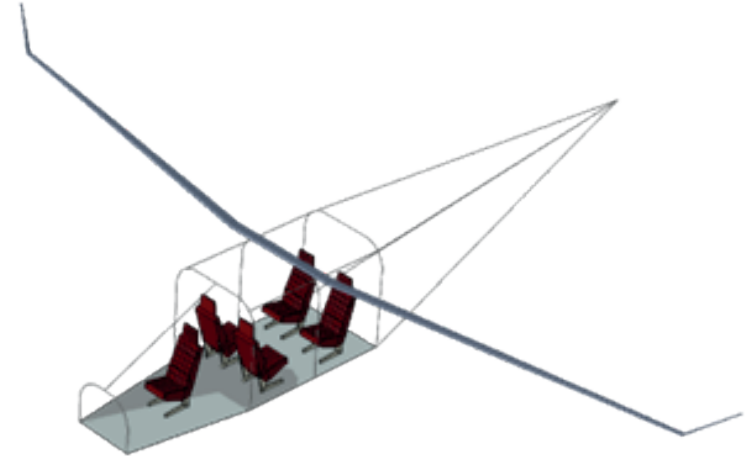
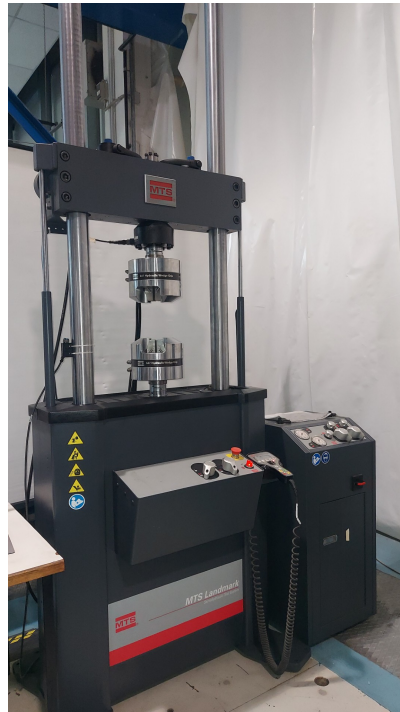
ACTIVITIES

Testing activities include:

- nail penetration tests up to 60 mm/s (tungsten needle Ø3 x 100 mm)
- quasi-static crush tests up to 900 mm/min on cells (13 kN – UN 38.3 T6) and on 500x500x500 mm³ items up to 35 kN
- customized battery nail penetration/crush test with 500x500x500 mm³ and 50 kN loading capability
- impact tests on cells with 9 kg mass, drop height 0.6 m on cells (UN 38.3 T6) and on small cell assemblies in protected chamber
- drop tests of items (mass > 150 kg – drop height 15 m) on different types of soil (MOC-2 SC-VTOL)
- drop tests on collapsable floor (mass > 150 kg) for UN 38.3 T4 shock tests (50÷150 g for 6÷11 ms)

CAPABILITIES

The facilities of the Experimental Lab of DAER, and the skills of SIAMS, AMATECH, and CRASHLab Scientific Teams integrate the project activity with technological, numerical and additional experimental capabilities.



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