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Project Hybris - Winner of the 1st RAeS General Aviation Design Competition 2016

Hybris - A structural battery-based solution to enable future electric aircraft

**Andrea Bernasconi, Fabio Biondani, Luca Capoferri, Alberto Favier,
Carmen Velarde Lopez de Ayala**

Hybris is the name of the winning project presented by a team of students at the Politecnico di Milano to the "1st Annual General Aviation Design Competition: E-Conditions Fixed-Wing Aircraft Design Challenge" announced by the Royal Aeronautical Society (RAeS).

The aim of the design challenge was to "stimulate the interest in the use of 'E' Conditions for innovative aerospace design". 'E' Conditions are a set of rules recently adopted in the UK, conceived in order to promote the development of new airplanes and systems in light aviation.

Team Hybris, formed by students of the graduate course in Aircraft Design, presented the design of a four-seat airplane with hybrid-electric propulsion making wide use of structural batteries. These are innovative multifunctional composite elements that can store energy and sustain mechanical loads, currently under advanced development, especially for automotive applications, while no aeronautical applications are known in the literature to date.

For the airplane category targeted in the Hybris project, this approach led to a highly promising design offering competitive performance together with a drastic chemical and noise pollution reduction, when compared to both conventionally-powered and current hybrid-electric aircraft.

The project was recently presented in the RAeS General Aviation Conference "Advanced Design of Light Aircraft", receiving much praise.

The project led also to the submission of a patent in the field of electric aircraft applications.

<http://www.polimi.it/nc/it/storie-polimi/il-politecnico-vola-in-alto-grazie-al-team-hybris/>

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Sala Consiglio, 2nd Floor, Building B12, Campus Bovisa
Dip. di Scienze e Tecnologie Aerospaziali
Via La Masa, 34 - 20156 Milano