

The image features a blue-toned collage background. At the top left, a white commercial airplane is shown in flight against a backdrop of a globe. In the center, a woman wearing glasses and large headphones looks upwards with her arms raised. Below her, a control room with multiple computer monitors is visible. The overall theme is aviation technology and innovation.

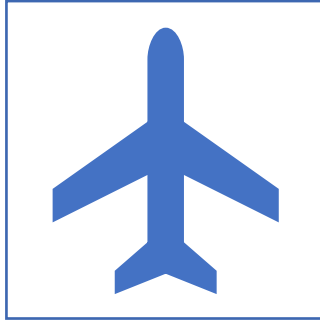
AERInnova

Descarbonización en la
industria aeronáutica – estado
de tecnologías en desarrollo

Tecnologías del avión

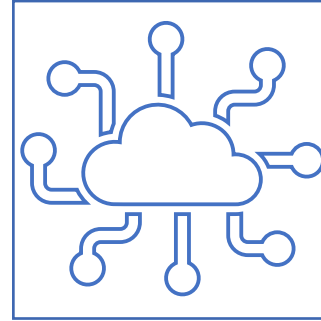
16 enero 2024, Madrid
Dr. Miguel Ángel Castillo Acero
Vicepresidente de Desarrollo
Tecnológico AerInnova

INTRODUCCIÓN



Tecnologías de Avión Incrementales

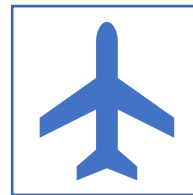
Tecnologías para Aviones Más
Eficientes



Tecnologías de Avión Disruptivas

Sistemas Energéticos e Impacto
en Tecnologías de Avión

AAM como Fuente de Innovación
Tecnológica



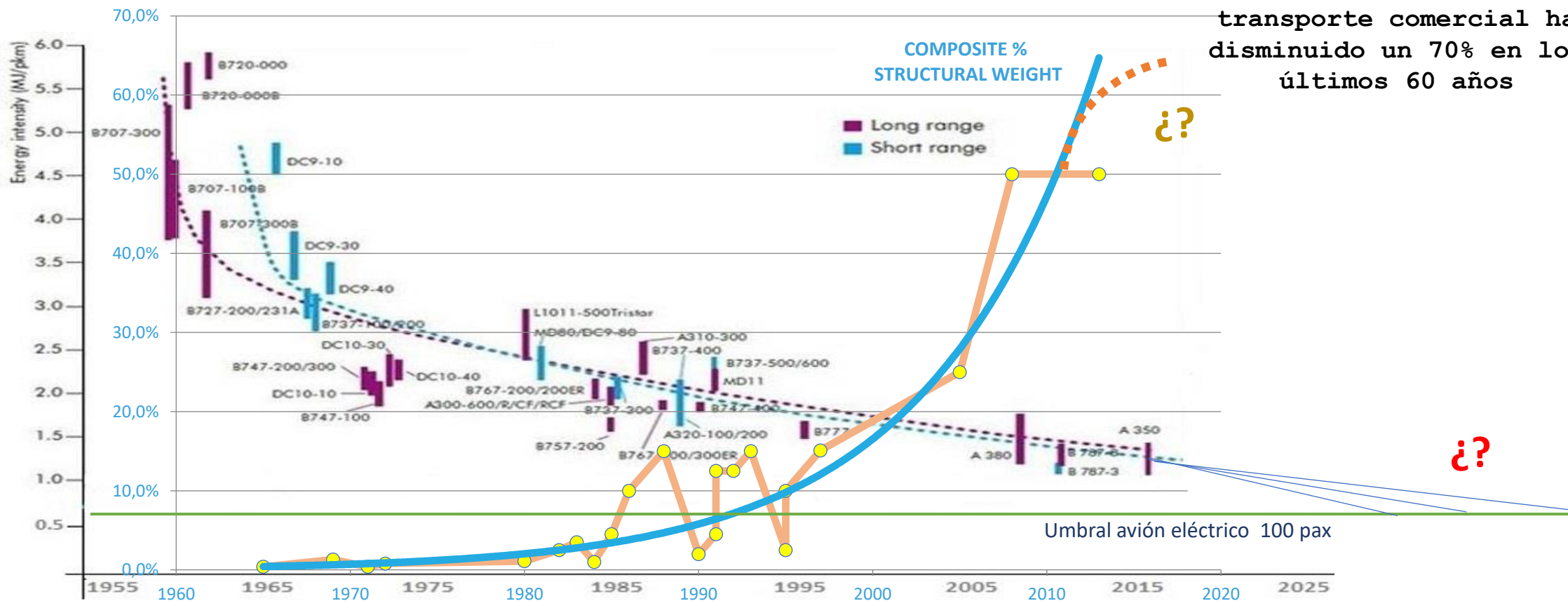
$$R = v/SFC \cdot (C_L/C_D) \cdot \ln(W_{\text{initial}}/W_{\text{final}})$$

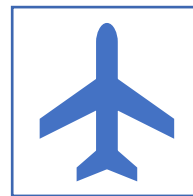
motor

aerodinámica

estructura

Gracias a los avances en motores más eficientes, mejor aerodinámica y menor peso estructural la demanda energética de los aviones de transporte comercial ha disminuido un 70% en los últimos 60 años





Estructuras ligeras y máxima eficiencia aerodinámica

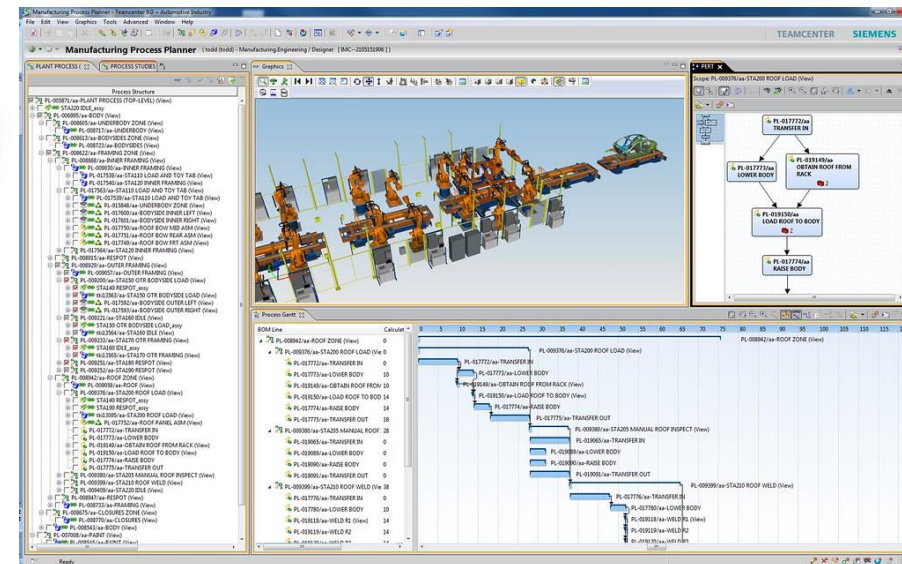
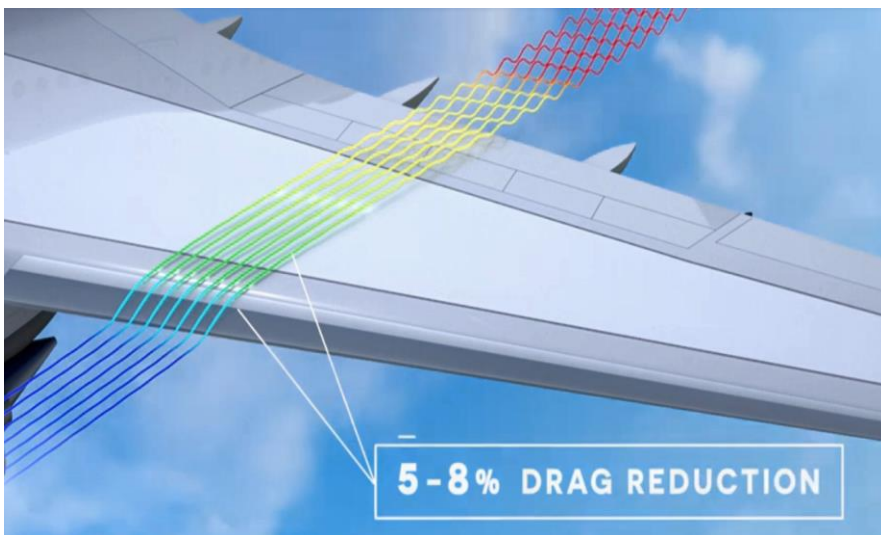
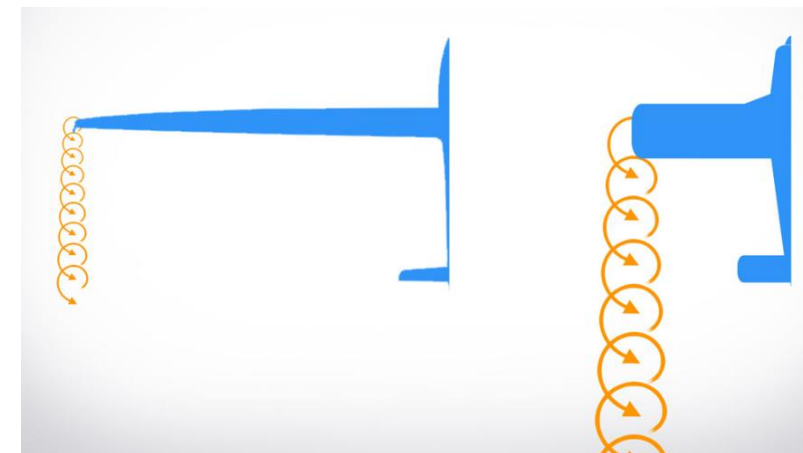
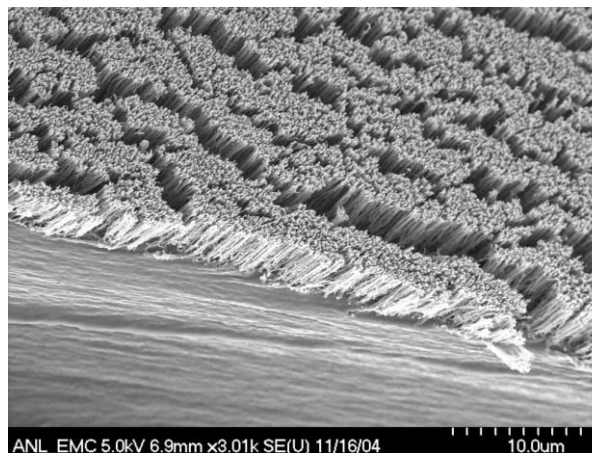
Nuevos Materiales.

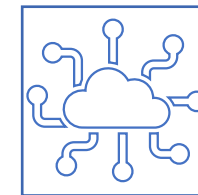
Estructuras alares esbeltas de alta relación de aspecto.

Flujo laminar.

Control activo de flujo.

Nuevos procesos productivos, alta cadencia, productividad, competitividad, flexibles, digitalización y sostenibilidad





H2

World Energy and Gulfstream Make History with 100% Sustainable Aviation Fuel Transatlantic Flight

<https://theogm.com/2024/01/10/world-energy-and-gulfstream-make-history-with-100-sustainable-aviation-fuel-transatlantic-flight/>



SAF

ALFAFUELS, un proyecto europeo enfocado en el desarrollo de combustibles sostenibles para la aviación

11/01/2024 en Industria



Initiative to develop hydrogen aviation in the Baltic Sea region

In the newly launched "BSR HyAirport" project, 16 partners are working to create the conditions for flights with hydrogen aircraft and enable the first demonstration flights in the Baltic Sea region before the end of this decade. Hamburg Airport is playing a central role.



By Carla Westerhoide
10.01.2024 - 13:21

- Hamburg Airport
- Baltic Sea Region Project
- Fuel Cell



World's first liquid-hydrogen eVTOL aircraft promises 1,150-mile range

By Loz Blain
January 10, 2024



Sirius promises enormous range figures based on the energy density of liquid hydrogen. Sirius Aviation AG. <https://newatlas.com/aircraft/sirius-jet-hydrogen-vtol/>

VIEW GALLERY - 6 IMAGES

The Sirius Jet will fly up to 1,150 miles (1,851 km) at speeds up to 323 mph (520 km/h) on a clean liquid-hydrogen powertrain. It'll rise vertically off a pad thanks to a deflected vectored thrust system using 20 smallish electric ducted fans.

Avión Eléctrico

<https://aviationweek.com/aerospace/emerging-technologies/dutch-startup-elysian-pursues-large-battery-electric-airliner>

Dutch Startup Elysian Pursues Large Battery-Electric Airliner

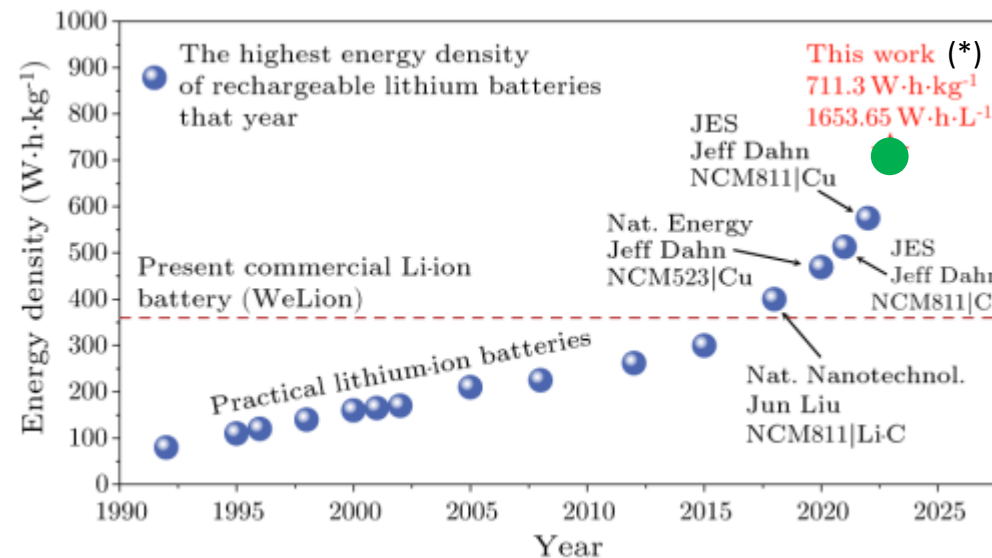
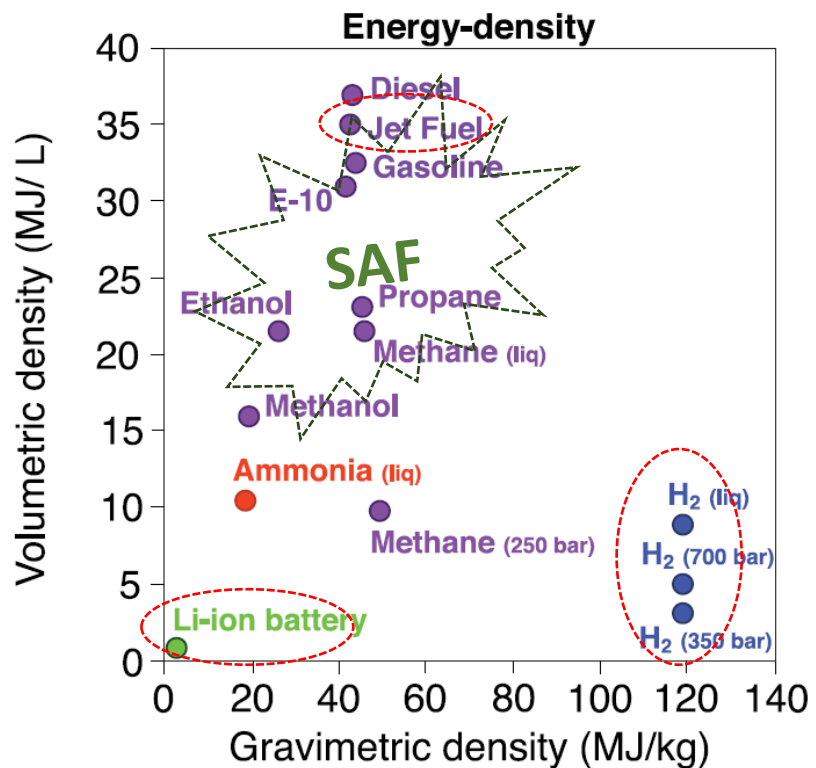
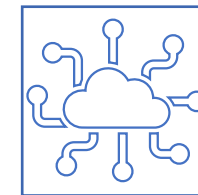
Graham Warwick January 10, 2024



Elysian's E9X concept uses battery-powered distributed electric propulsion with a turbogenerator for reserves.

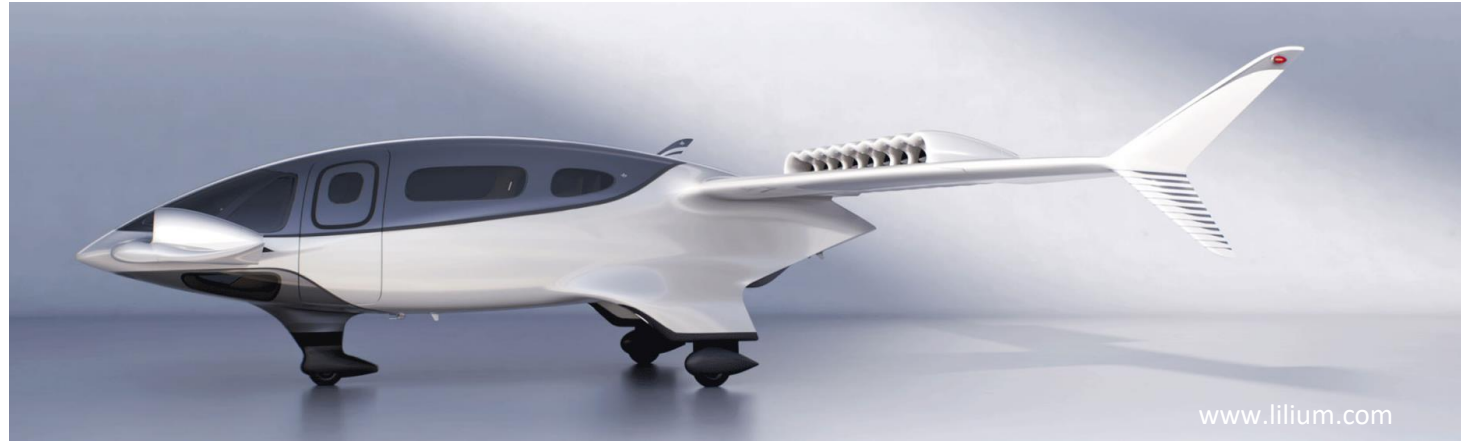
Credit: Elysian

AAM



Quan Li et al. (2023) "A 700 Wh kg⁻¹ Rechargeable Pouch Type Lithium Battery" *Chinese Phys. Lett.* doi: [10.1088/0256-307X/40/4/048201](https://doi.org/10.1088/0256-307X/40/4/048201)

Ref. Net-zero emissions energy Systems, a review. Davis et. Al. Science 360, 1419 (2018)



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Gracias por su atención.

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