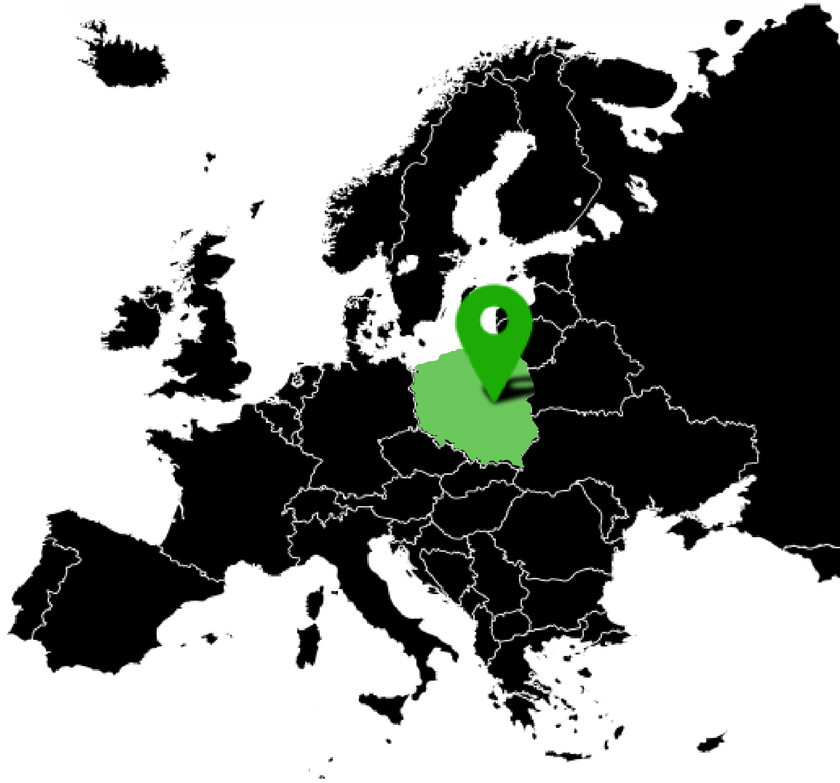
ŁUKASIEWICZ – INSTITUTE OF AVIATION

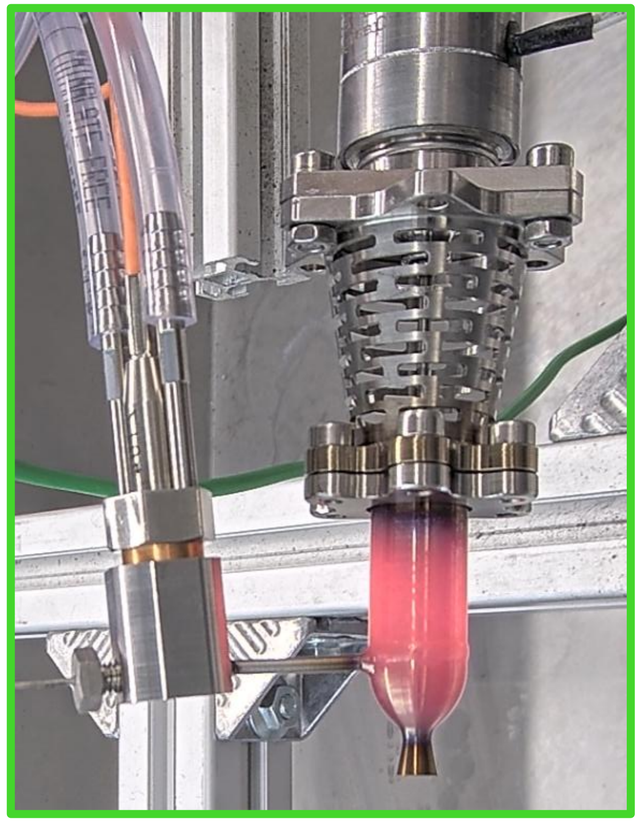
Łukasiewicz
Institute of Aviation

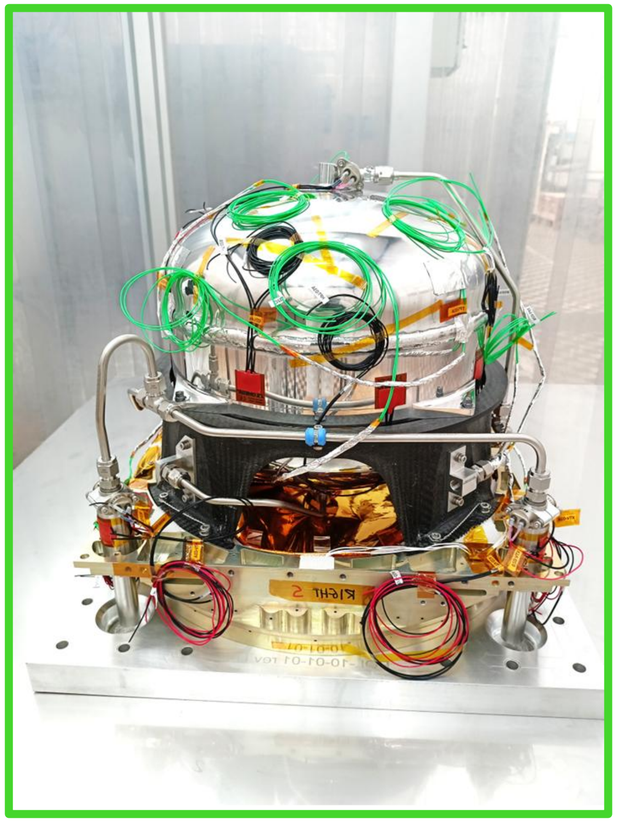
- Largest R&D public entity in aerospace in Poland, **focus on industry (the majority of revenues!)**
- Over **1500 employees, 150 engineers in space technology** and over 98 years of R&D
- Portfolio including **space flight hardware (50 year anniversary in 2023!)**
- **Green Space Propulsion** among strategic fields of investment
- **Space Transportation**, **environmental testing**, **composite technologies** and **avionics** among other fields of activity
- Work with all major **European space technology primes**

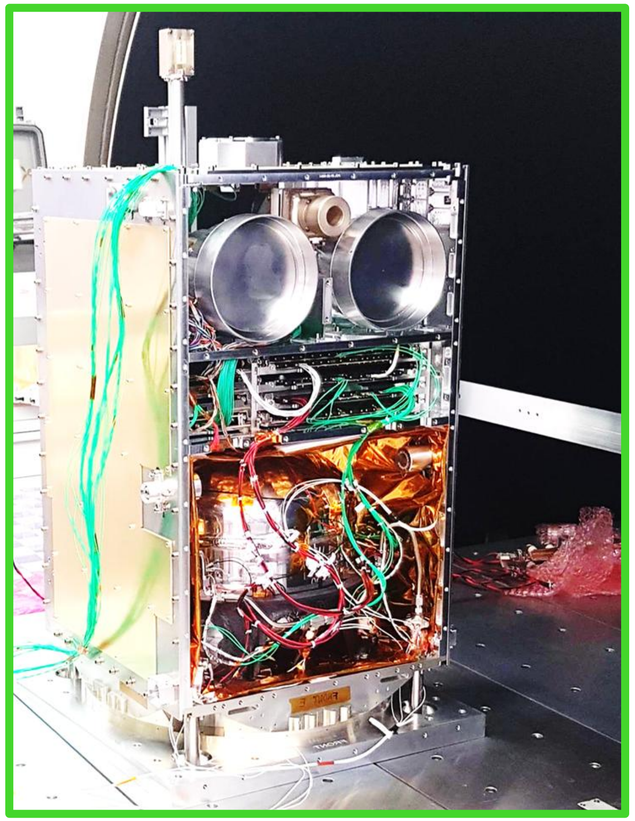


150

FROM COMPONENTS TO SYSTEMS







SUSTAINABLE TECHNOLOGIES

NEW NICHES

EUROPEAN NEEDS

ITAR-FREE

From component level up to integration of propulsion modules with satellite platforms.

creotech

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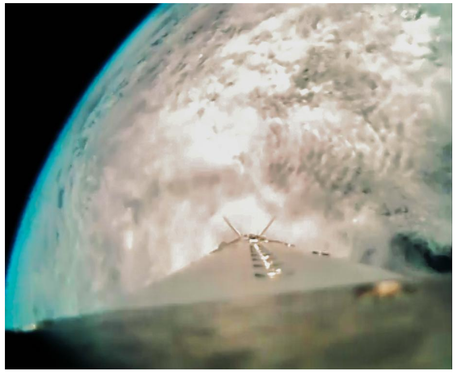
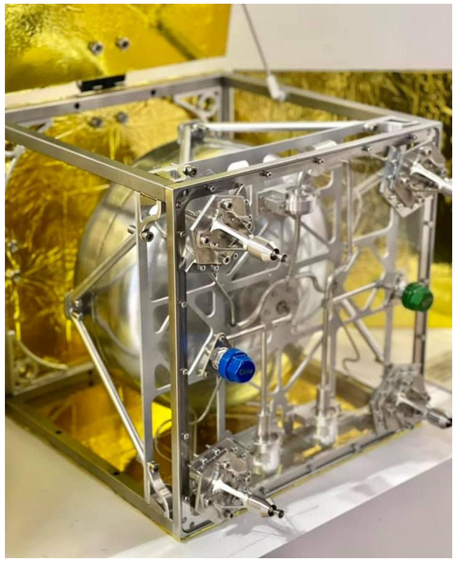
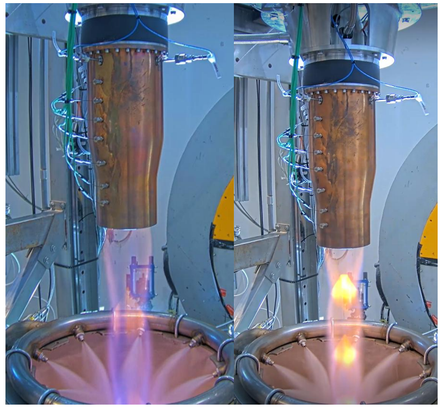
KEY ACHIEVEMENTS IN SPACE PROPULSION



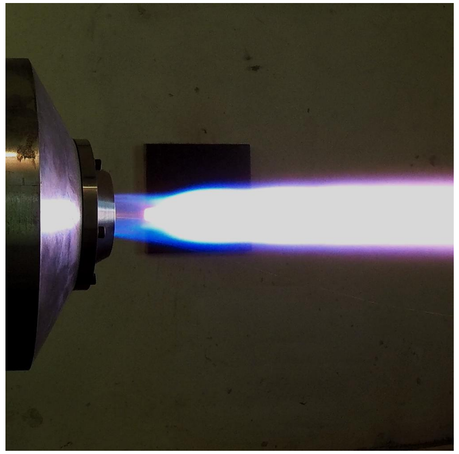
98% HTP HYBRID ROCKET FLIGHT ABOVE THE VON KARMAN LINE: ILR-33 AMBER 2K SUBORBITAL ROCKET
FIRST IN THE WORLD IN-FLIGHT UTILISATION OF 98% HTP



DEVELOPMENT OF GREEN SPACECRAFT PROPULSION SYSTEMS USING 98% HTP (MONO- AND BIPROPELLANT)
ALLOWING UTILISATION OF 99.99% HTP FOR ENHANCED STORABILITY, HIPERGOLICS



BIPROPELLANT ROCKET ENGINES USING 98% HTP FOR KICK-STAGES, REUSABLE VEHCILES AND LANDERS
FIRST GREEN, STORABLE, REIGNITABLE, DEEP-THROTTLEABLE EUROPEAN ENGINE TECHNOLOGY



SOLID ROCKET MOTOR FOR DEORBITING SPACECRAFT (PRE-QUALIFED ALUMINIUM-FREE HIGH PERFORMANCE LOW-BURN-RATE PROPELLANT)
FIRST IN THE WORLD TO MEET ESA CLEANSPACE REQUIREMENTS

IN-FLIGHT DEMONSTRATION OF A ROCKET DETONATION ENGINE USING LIQUID PROPELLANTS
FIRST IN THE WORLD ROCKET POWERED ONLY BY A RDE

WHY INSTITUTE OF AVIATION?

Number 1 entity in Poland in terms of certified laboratories for aerospace and defense located at one site
- over 65 000 sqm of facilities

The only Polish entity successfully testing **in-flight** solid, hybrid and liquid propellant propulsion systems and rockets

The only Polish entity with experience with development of rocket systems using both: space (ECSS) and military standards and coordinating over 500 suppliers for **system integration**