DLR INSTITUTE OF SPACE PROPULSION

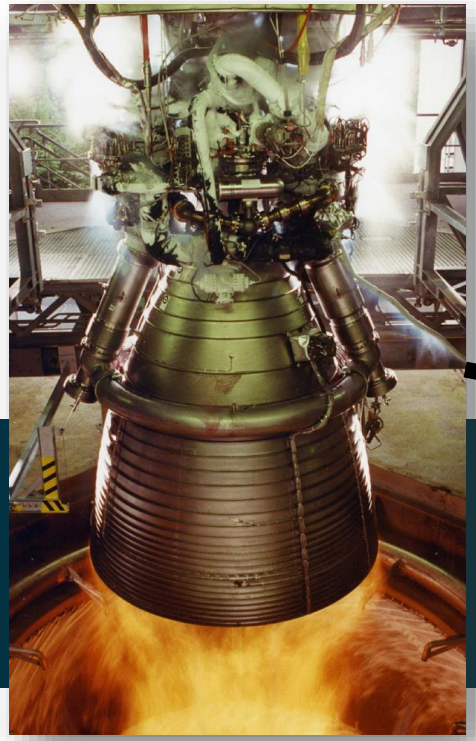
German-Australian Chamber of Industry and Commerce | AHK Space Webinar

Justin Hardi, 7 Mar 2024

DLR German Aerospace Center




- German national research institution for aeronautics, astronautics, energy, transport
- Space agency
- Project management agency
- More than 10,000 employees
- 55 Institutes on 30 sites
- 4 international offices



Institute of Space Propulsion
- Lampoldshausen site
- Est. 1959
- 330 employees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September 1st 2023
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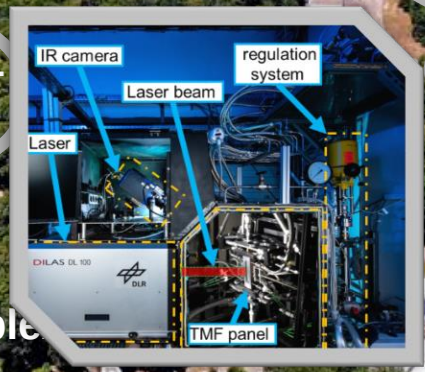

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Test complex M11

M3 test comple

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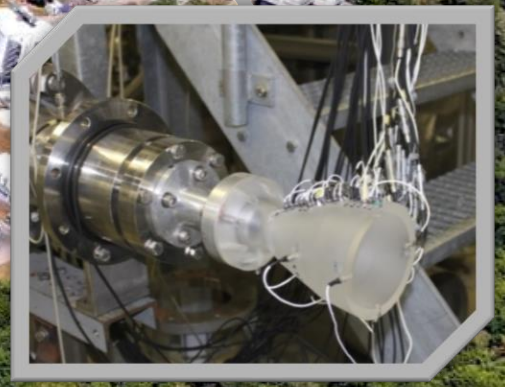

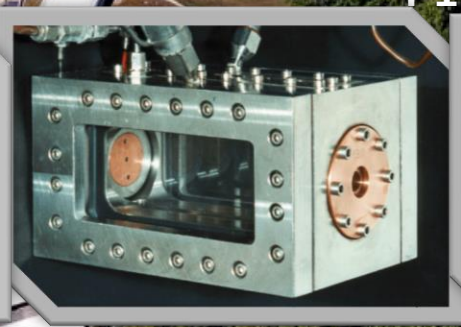

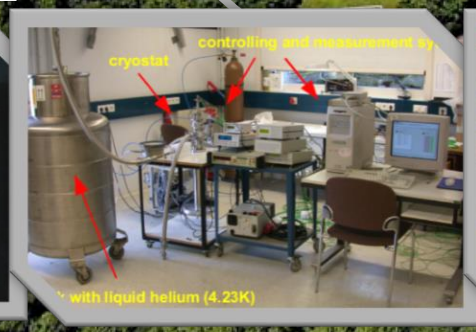

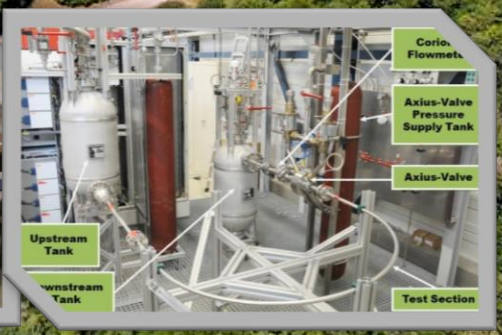

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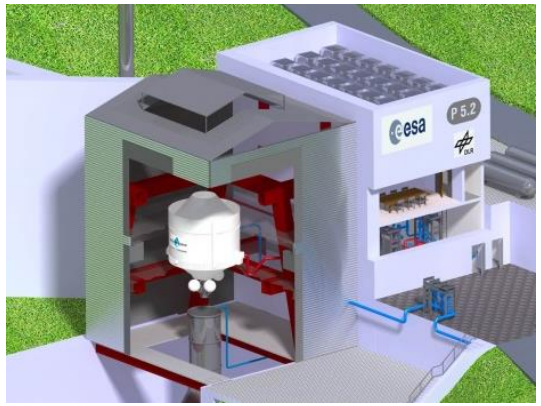
Test Facilities

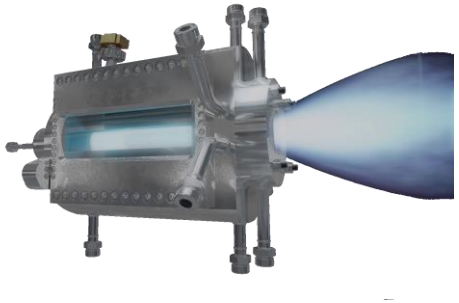
Test Bench Technology



Safety and Facility Management

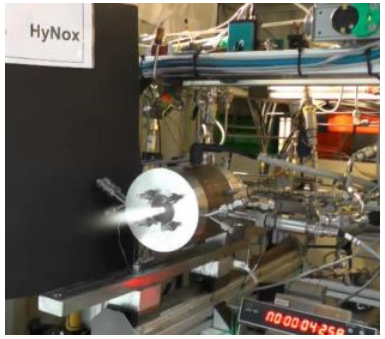
Quality Assurance

Rocket Propulsion Technology



Rocket Propulsion Systems

Satellite and Orbital Propulsion



Chemical Propellant Technology

Applied Hydrogen Technology

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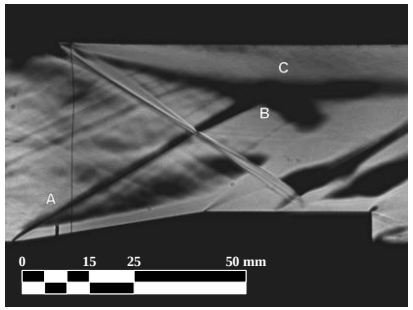
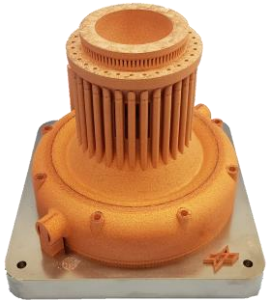
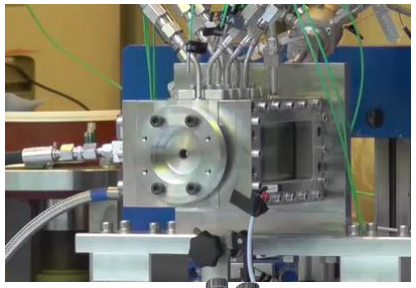
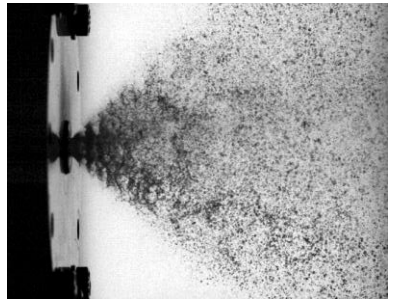
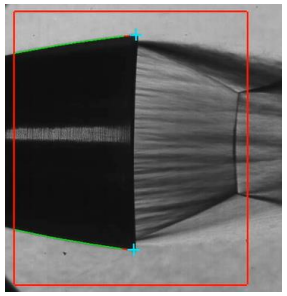
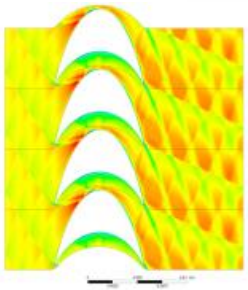
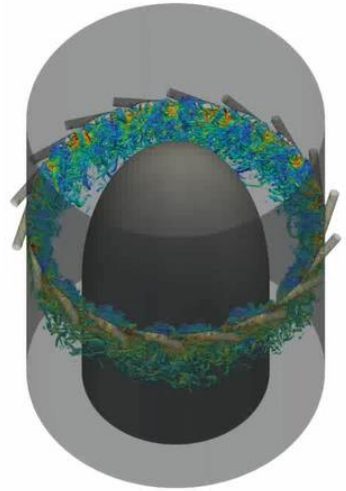
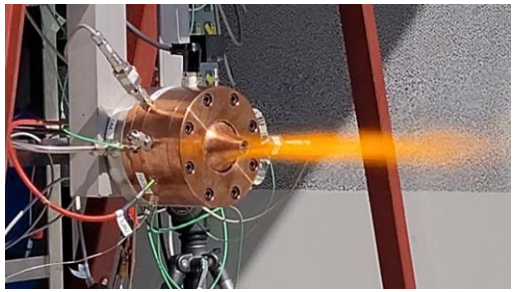
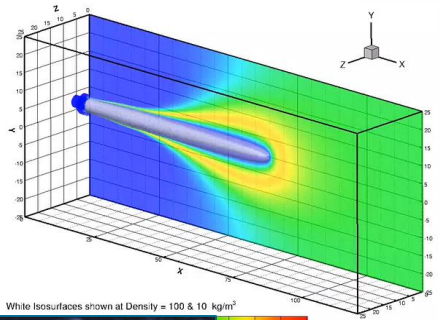
Applied research portfolio

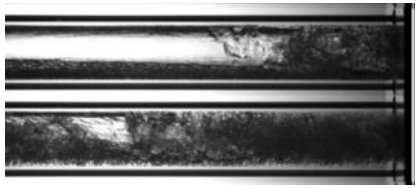



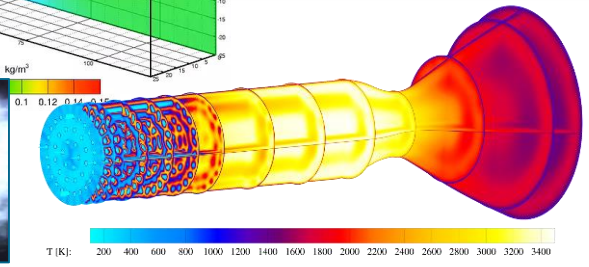


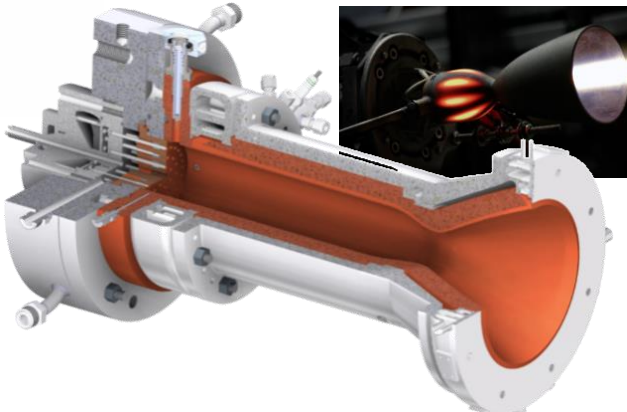








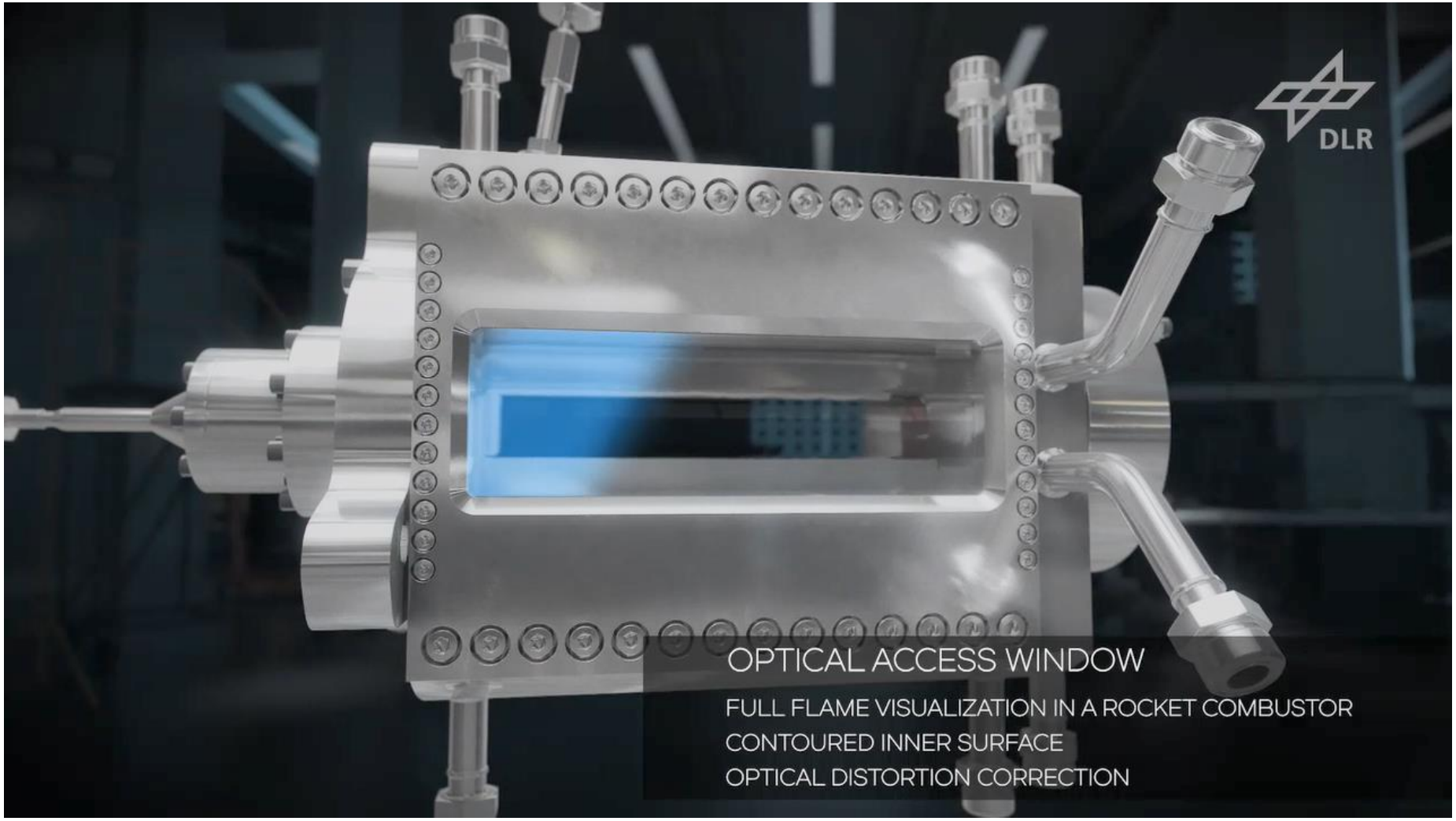






Combustion dynamics research

Research combustor BKN



BKN Teaser-Video: https://www.dlr.de/content/de/artikel/news/2021/01/20210311_blick-ins-feuer.html

Deutsches Zentrum
für Luft- und Raumfahrt
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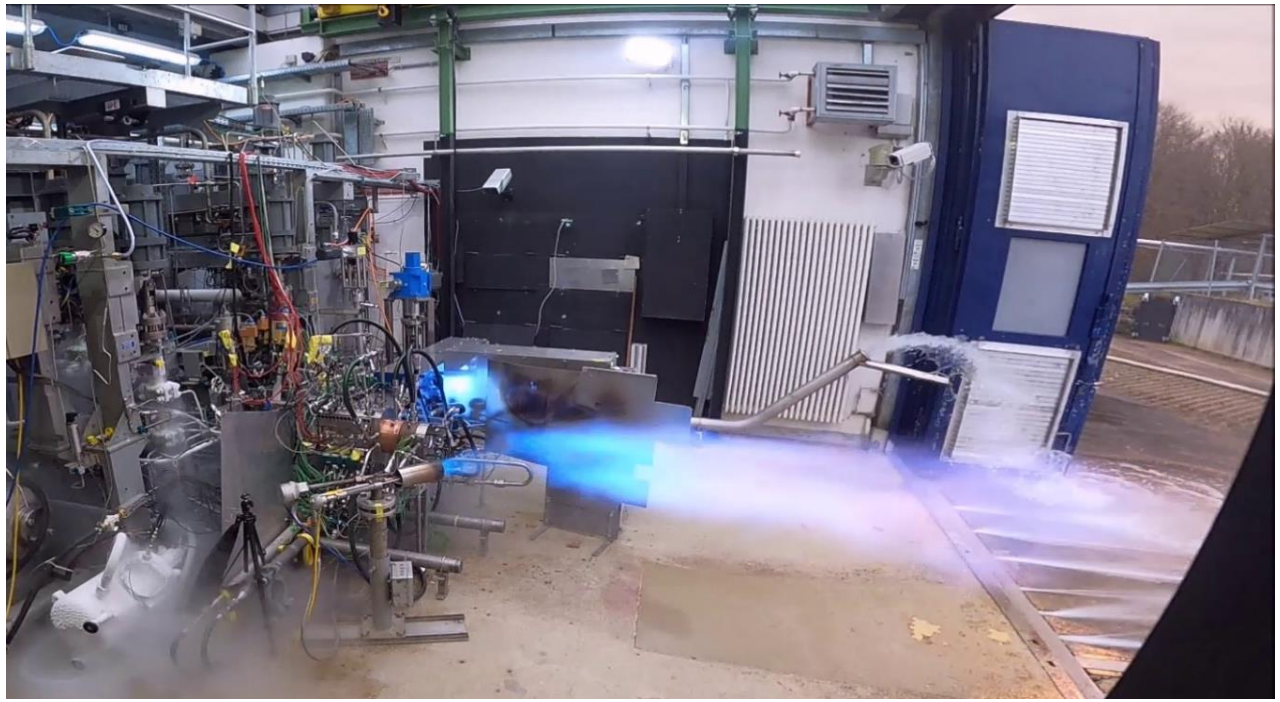

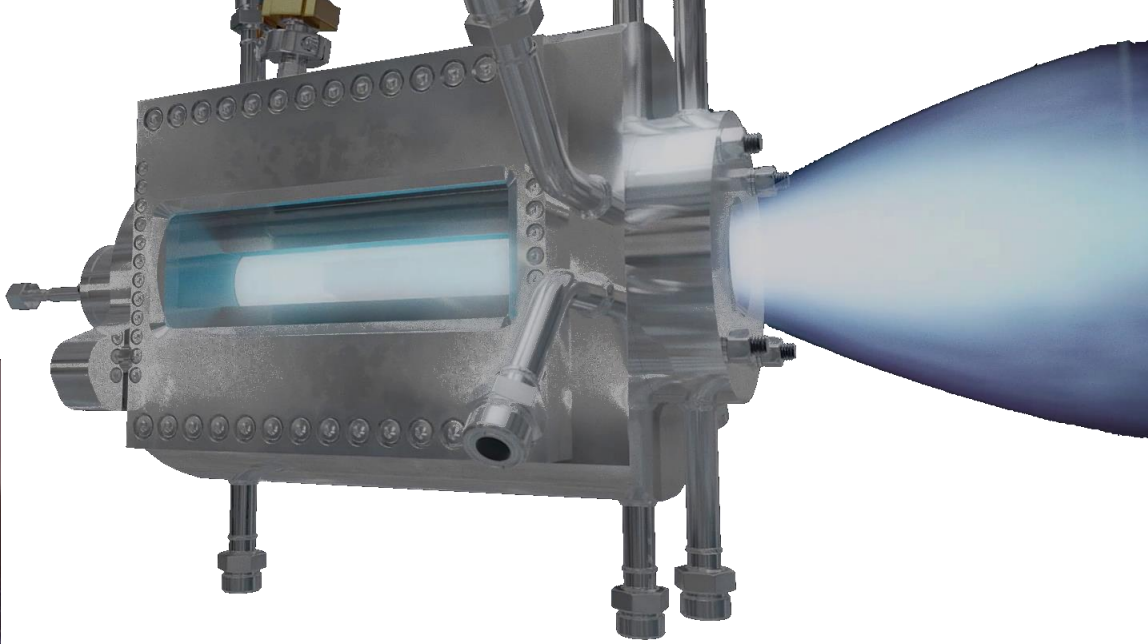

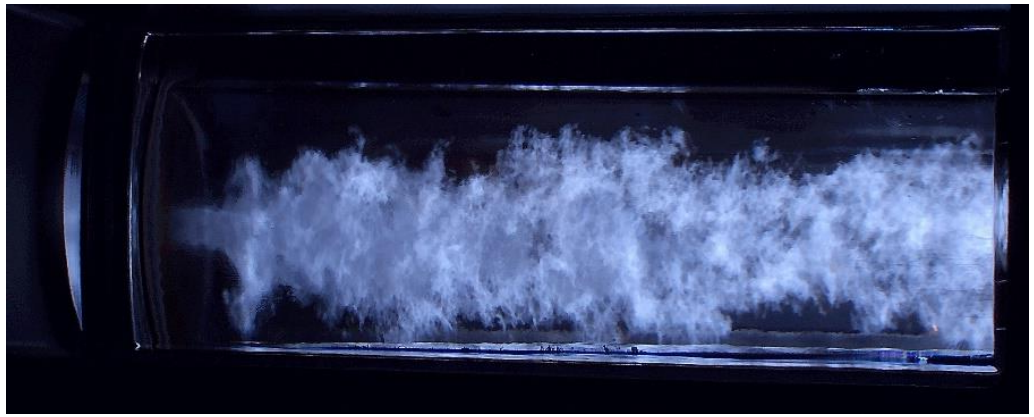

- Visualisation of combustion processes under relevant conditions
- Cryogenic bipropellants LOX-Hydrogen, LOX-Methane
- Injector screening, ignition strategies, combustion stability, validation data for numerical modelling

BKN Teaser-Video: https://www.dlr.de/content/de/artikel/news/2021/01/20210311_blick-ins-feuer.html

Combustion dynamics research

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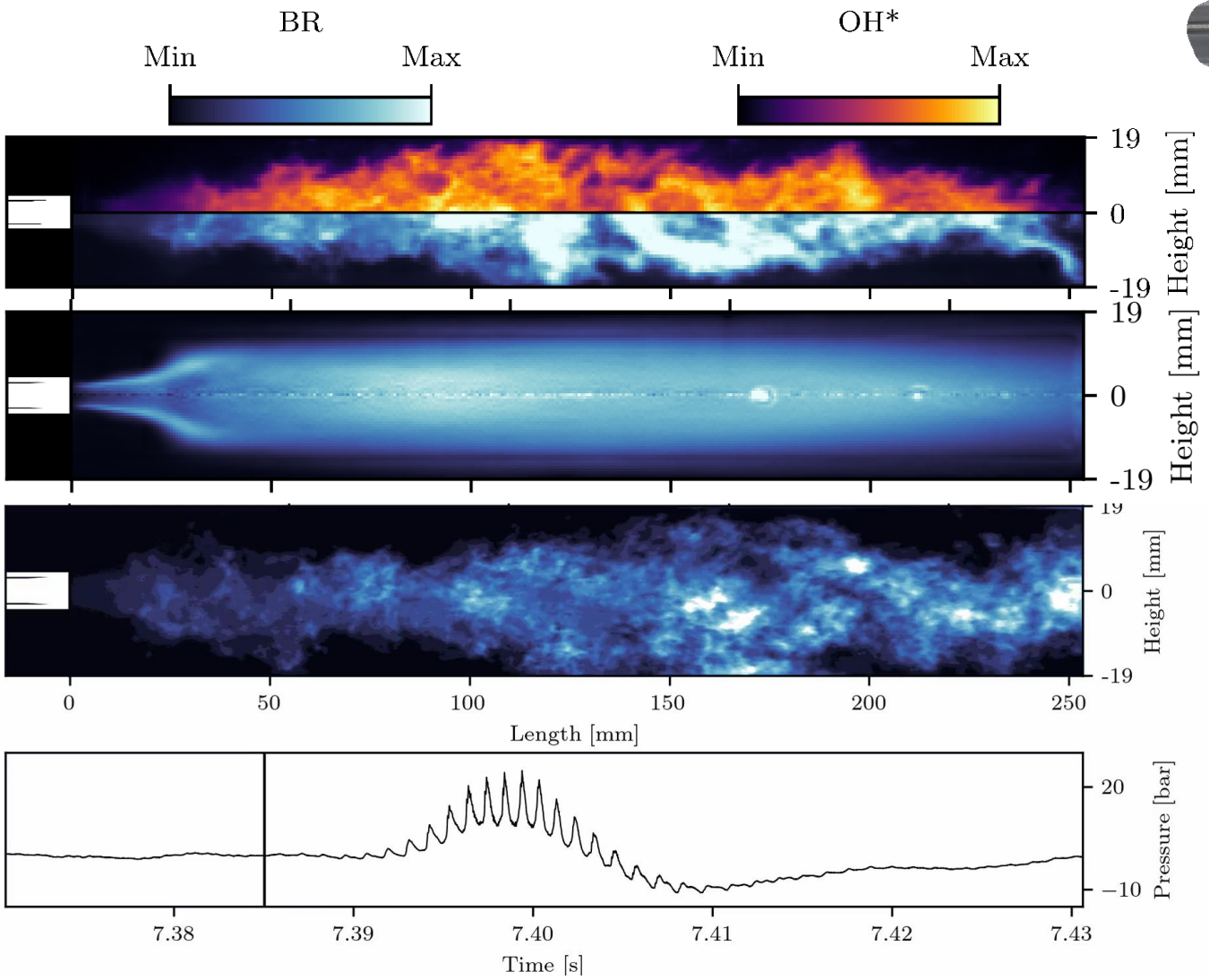
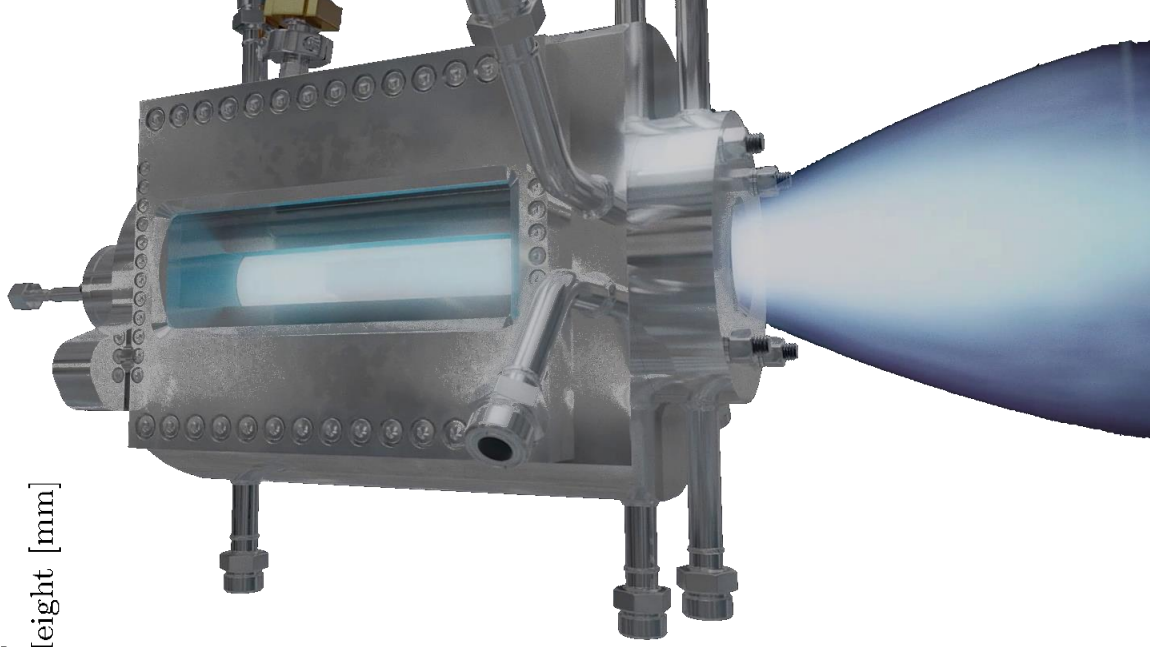
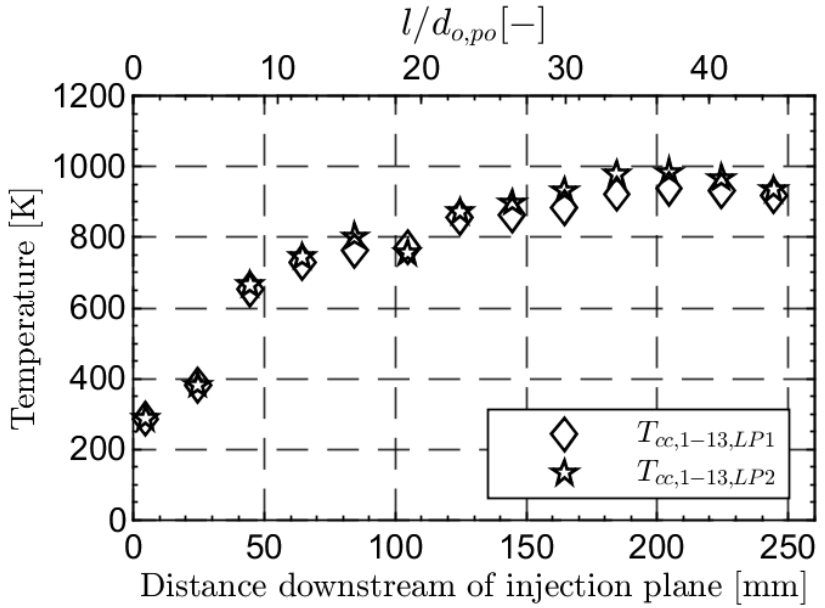
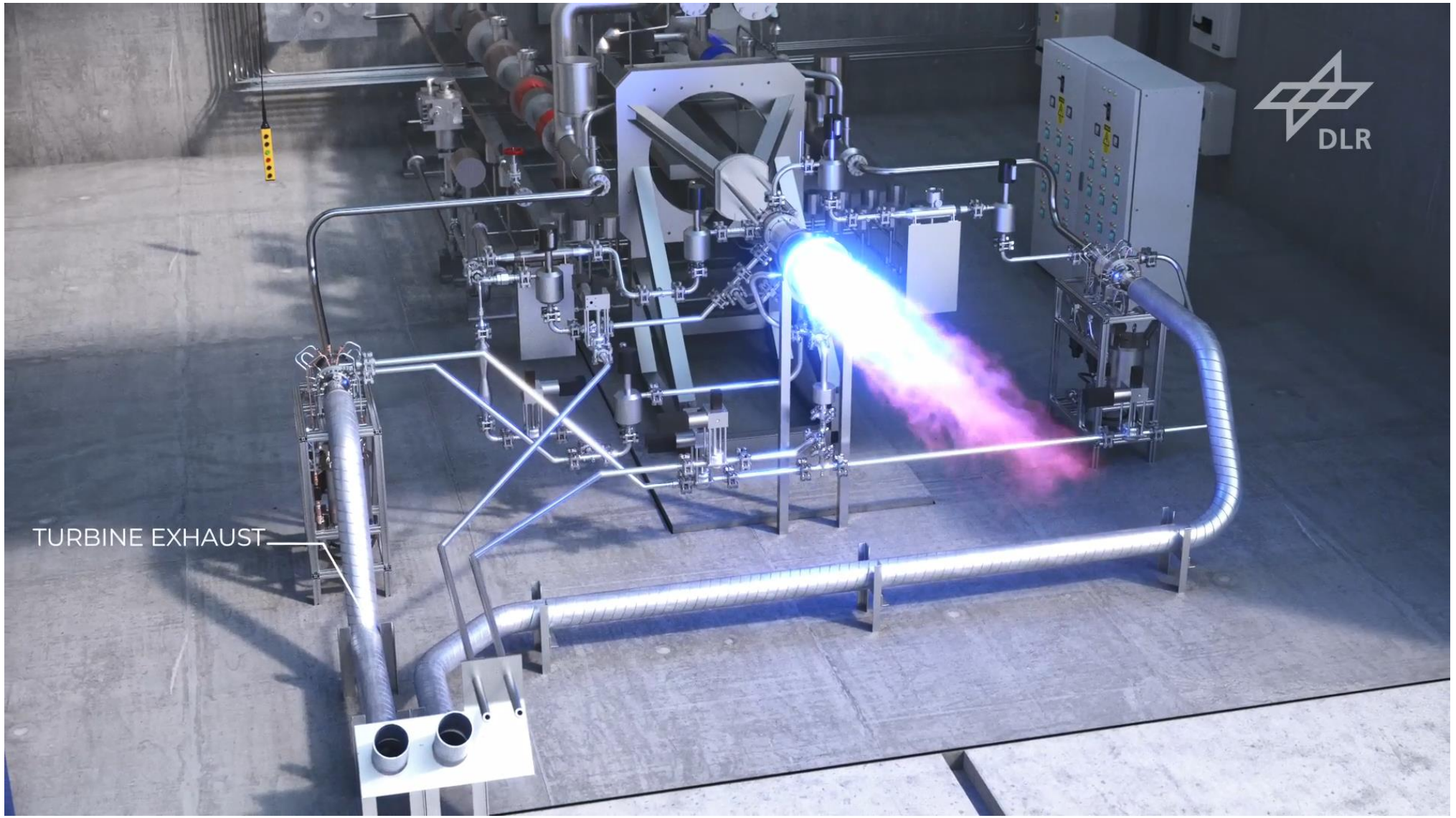




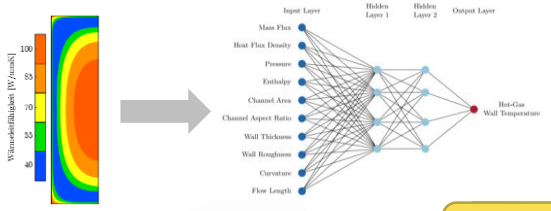


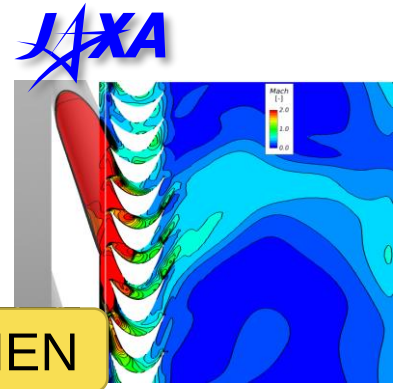
(Martin et al. 2021 Case Studies in Thermal Engineering)

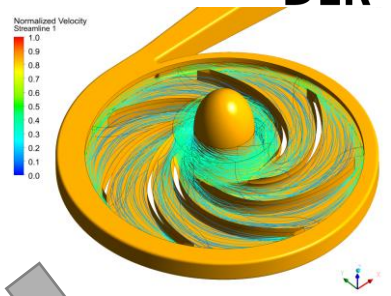
LUMEN: 25 kN LOX/LNG demonstrator engine



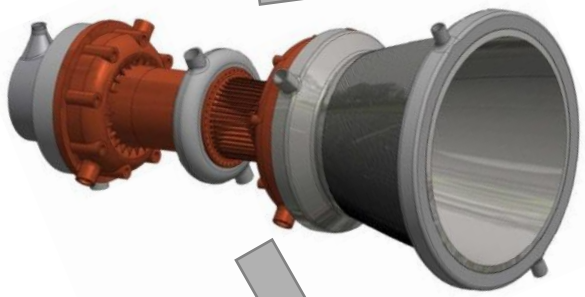
LUMEN demonstrator engine development

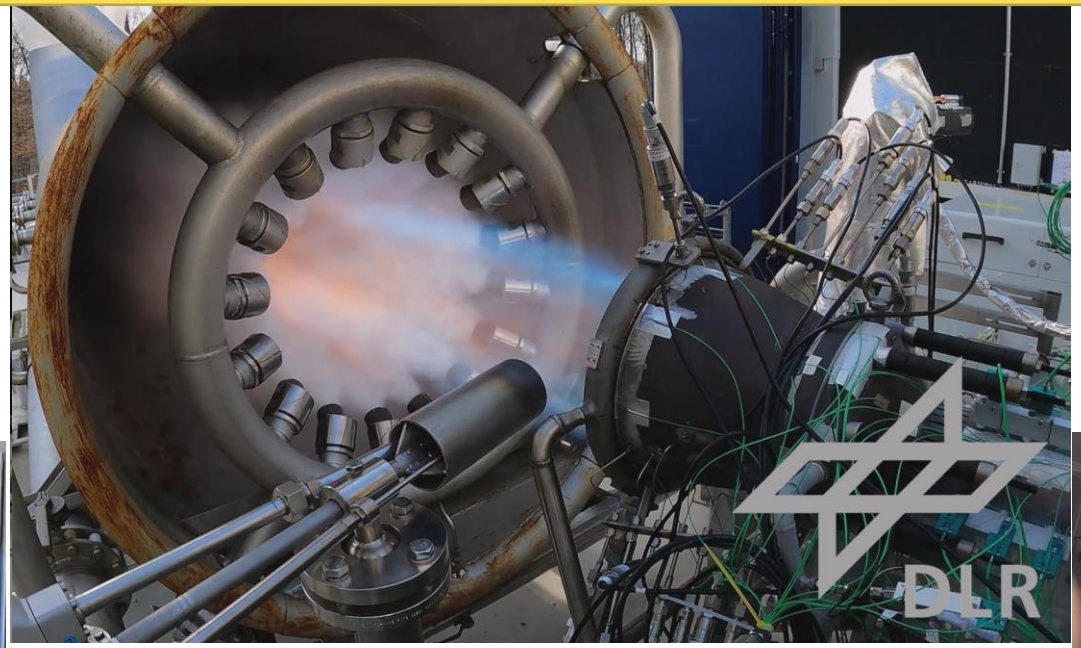


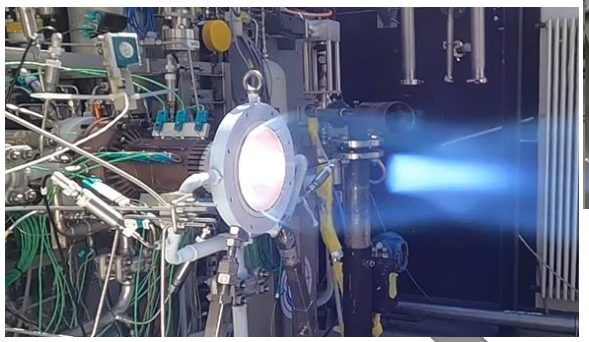




28.02.2024: 1st successful ignition of LUMEN







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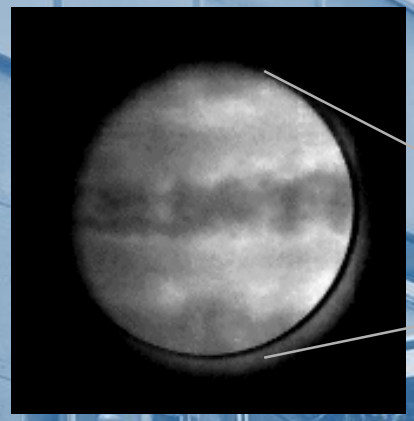

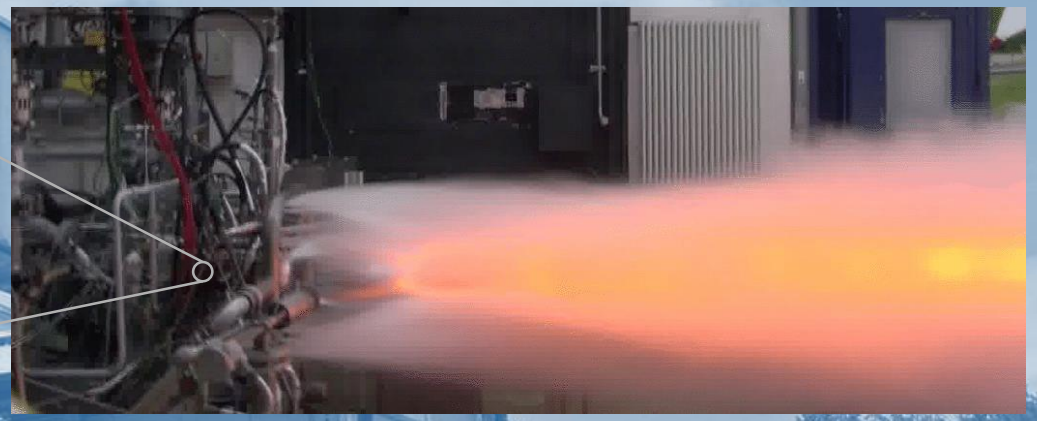

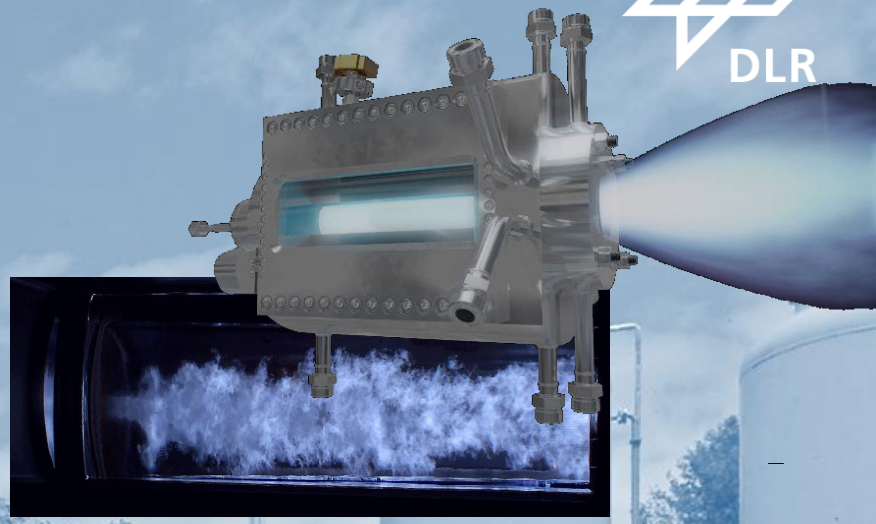

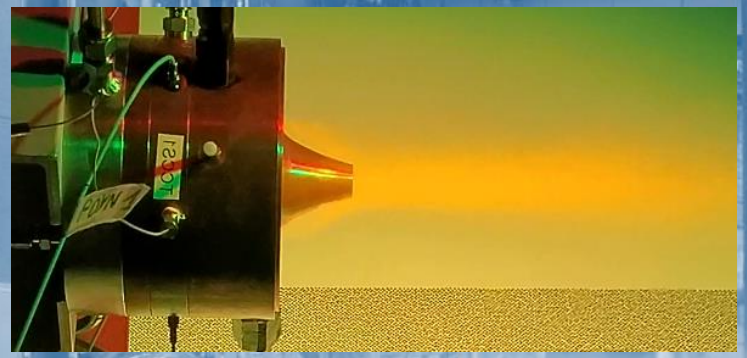

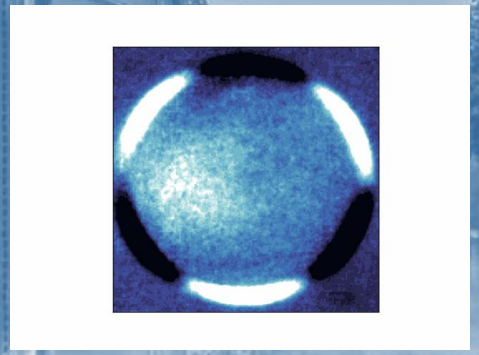

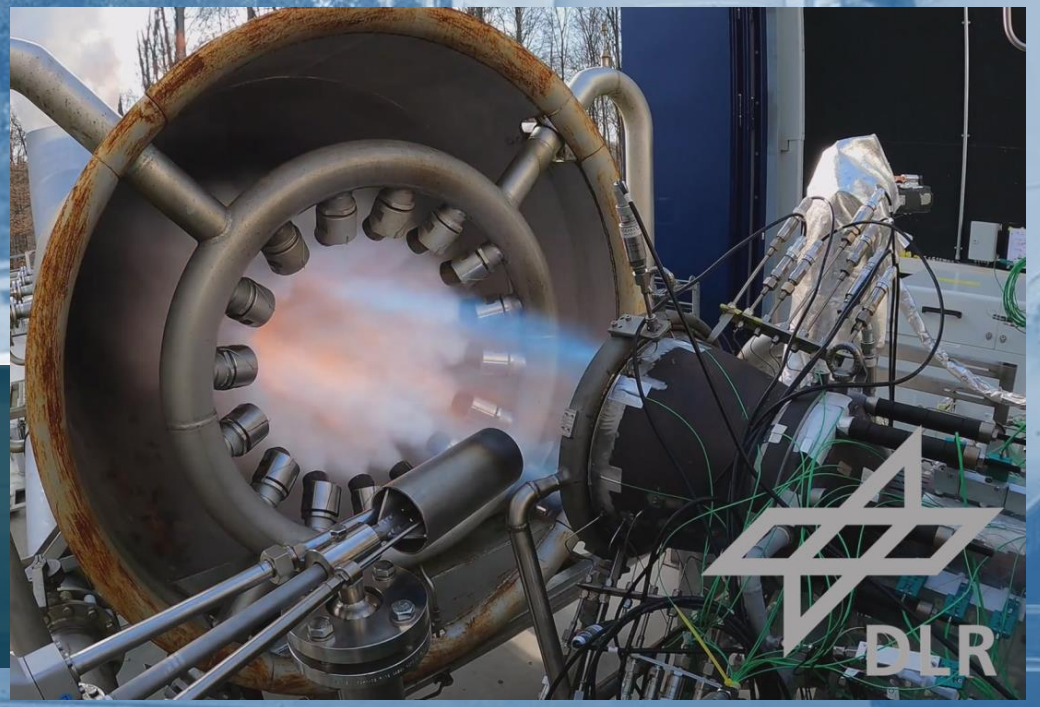

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