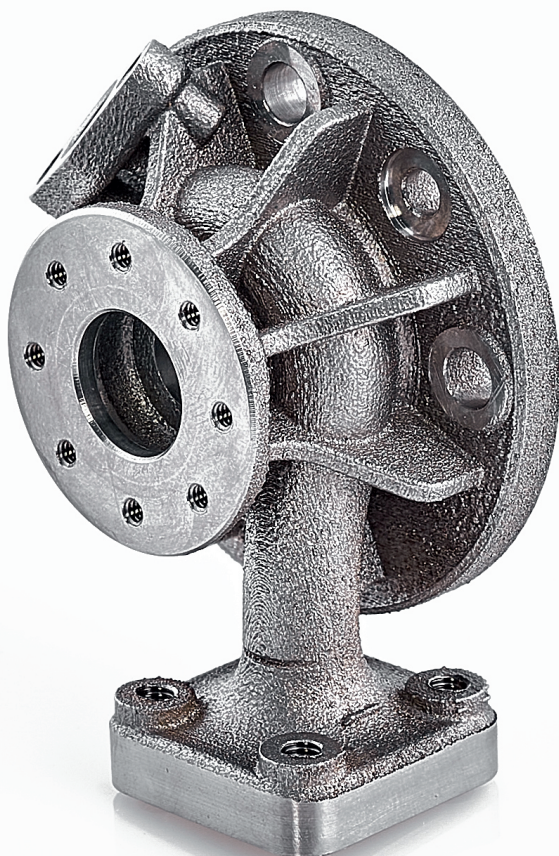




Łukasiewicz
Institute
of Aviation

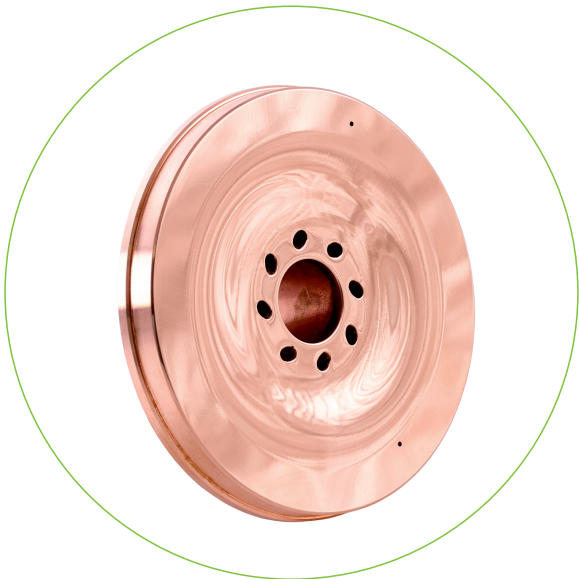


Institute offers
an integrated end-to-end
additive manufacturing capability
for a range of industries

3D METAL

CHARACTERISTICS

Łukasiewicz – Institute of Aviation offers comprehensive metal additive manufacturing services based on powder bed fusion technologies. Advanced manufacturing capabilities enable the manufacturing of high-precision functional components with complex geometries while ensuring excellent quality and process repeatability. A **one-stop-shop** approach provides support throughout the entire project lifecycle, from requirements analysis and solution development to the delivery of ready-to-use components.



Available Materials:

- **CuCr1Zr [2.1293 / C18150]**
Copper alloy – capability to manufacture combustion chambers in compliance with ECSS-Q-ST-70-80C requirements, up to 250 × 250 × 300 mm.
- **316L [1.4401]**
Stainless steel – high corrosion resistance, suitable for applications involving exposure to high concentrations of hydrogen.
- **CoCrMo**
Cobalt alloy – capability to produce highly precise components with channel diameters starting from 0.3 mm.

SCOPE OF SERVICES

Manufacturing process planning		Material testing [NDT. DT]			
Implementation assessment	3D modeling	Additive manufacturing	Thermal treatment	Surface treatment	Quality control
- Technical condition assessment - R&D for internal and commercial projects - Technology capability matching	- Design – 3D modeling	- Metal powder handling - Manufacturing procedures - Quality assurance standards	Achieving the required mechanical and physical properties: - Residual stress relief - Age hardening - Solution heat treatment	- Cleaning - CNC machining - Polishing - Chemical etching - Passivation - Electrical Discharge Machining [EDM]	- Geometrical validation [CMM, 3D Scanning] - Mechanical testing [static, dynamic, fatigue, XRD] - Material testing [NDT, XCT, SEM] - Environmental testing



The Łukasiewicz Research Network – Institute of Aviation offers a wide range of specialized research, engineering services and products. We provide comprehensive solutions, ranging from dedicated analyzes, simulations, engineering design, through the selection, testing and certification of materials and structures, to rapid prototyping and additive manufacturing.

al. Krakowska 110/114, 02-256 Warsaw, Poland
e-mail: info@ilot.lukasiewicz.gov.pl / www.ilot.lukasiewicz.gov.pl