

## **The Department of Metals and Hybrid Materials at the German Aerospace Centre: current activities and trends**

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DLR is the German aeronautics and space research centre. Its extensive research and development work in aeronautics, space, energy, transport and security is integrated into national and international cooperative ventures. DLR has approximately 8000 employees at 16 locations in Germany and has offices in Brussels, Paris, Tokyo and Washington D.C. The activities at the department of Metals and Hybrid Materials of the DLR focus on the research and development of lightweight and high strength metal-based structural materials for aeronautics and space applications. The relationships between internal architecture and mechanical behaviour of light alloys and fibre-metal laminates are investigated experimentally and numerically to achieve knowledge-based design of high performance structural materials. The aim of this talk is the presentation of some of the research projects being carried out at the department and the consequent trends inferred from the scientific results obtained. Particularly, the topics addressed will encompass the damage tolerance of Al-based fuselage structures, additive manufacturing of Ti alloys, interface engineering of metal-polymer interfaces and the characterization of metals using 3D-imaging and in situ diffraction synchrotron methods.