

DED Coating of Tribological Contacts in Pumps and Bearings

Enabling Industries Through New Material Pairings



Motivation and Relevance

- Remove alloys and materials systems that consist lead
- Expanding the possible applications of AM and especially DED in the hydraulic field
- Testing of coated surfaces under the tribological loads in hydraulic systems

Approach

- Substitute the conventional alloy with lead by a coating processed by high-speed DED-LB
- Metal matrix composite of 316L and SiC as the new tribological system
- Testing of the coated plate within 1000h load test in application

Results

- Almost the same efficiency as the standard special brass control plate
- The Test showed the potential of an industrial use case in a fine-tuned series production

Operational efficiency ★★★★★

Operational behavior ★★★★★

Avoidance of lead ★★★★★

Research Area

- Wear resistant MMC coatings
- Components with high loads in pumps

Partners



Picture



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