DED on Fiber

Enabling Industries Through New Material Pairings

Motivation and Relevance

- Transformation of the energy supply chain and energy system for the future widespread use of hydrogen
- Lightweight pipes for hydrogen transport and storage made from a new material composition of coated fiber-reinforced polymers

Approach

- Weaving of a tube made of fiber-reinforced polymer
- Coating of exterior and interior surfaces of the FRP by the HS-DED-LB Process with Aluminum and ZnMg alloys
- Preparation for future internal coating during the weaving process

Results

- Successful exterior coating of an FRP with Aluminum
- More sintered particles than molten ones
- Stable coating by clinging the metal layer in the surface of the FRP pipe

Research Area

- Light weighting
- Hydrogen
- Materials

Partners

PPS PIPELINE SYSTEMS – EIN UNTERNEHMEN DER HABAU GROUP

ITA Institut für Textiltechnik und Lehrstuhl für Textilmaschinenbau

oerlikon metco

HARALD DICKLER SONDEROPTIKEN FÜR DIE LASERTECHNIK HD

KÜMPERS fiber-based materials

VOSS

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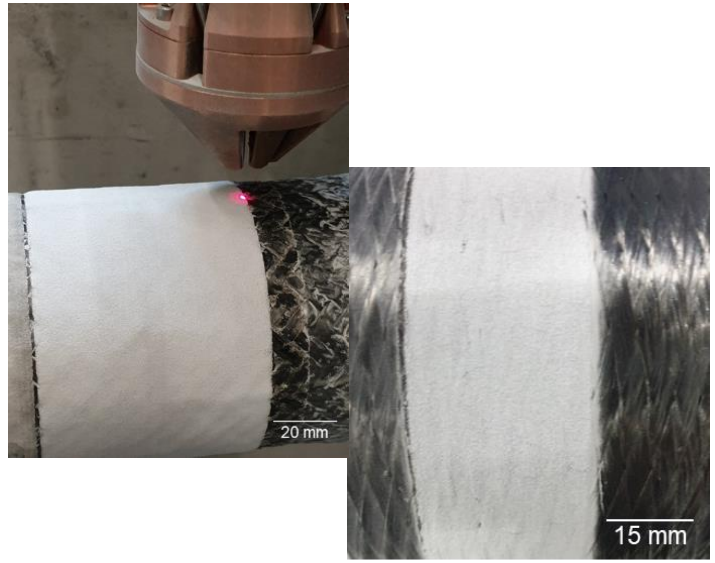
Picture



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