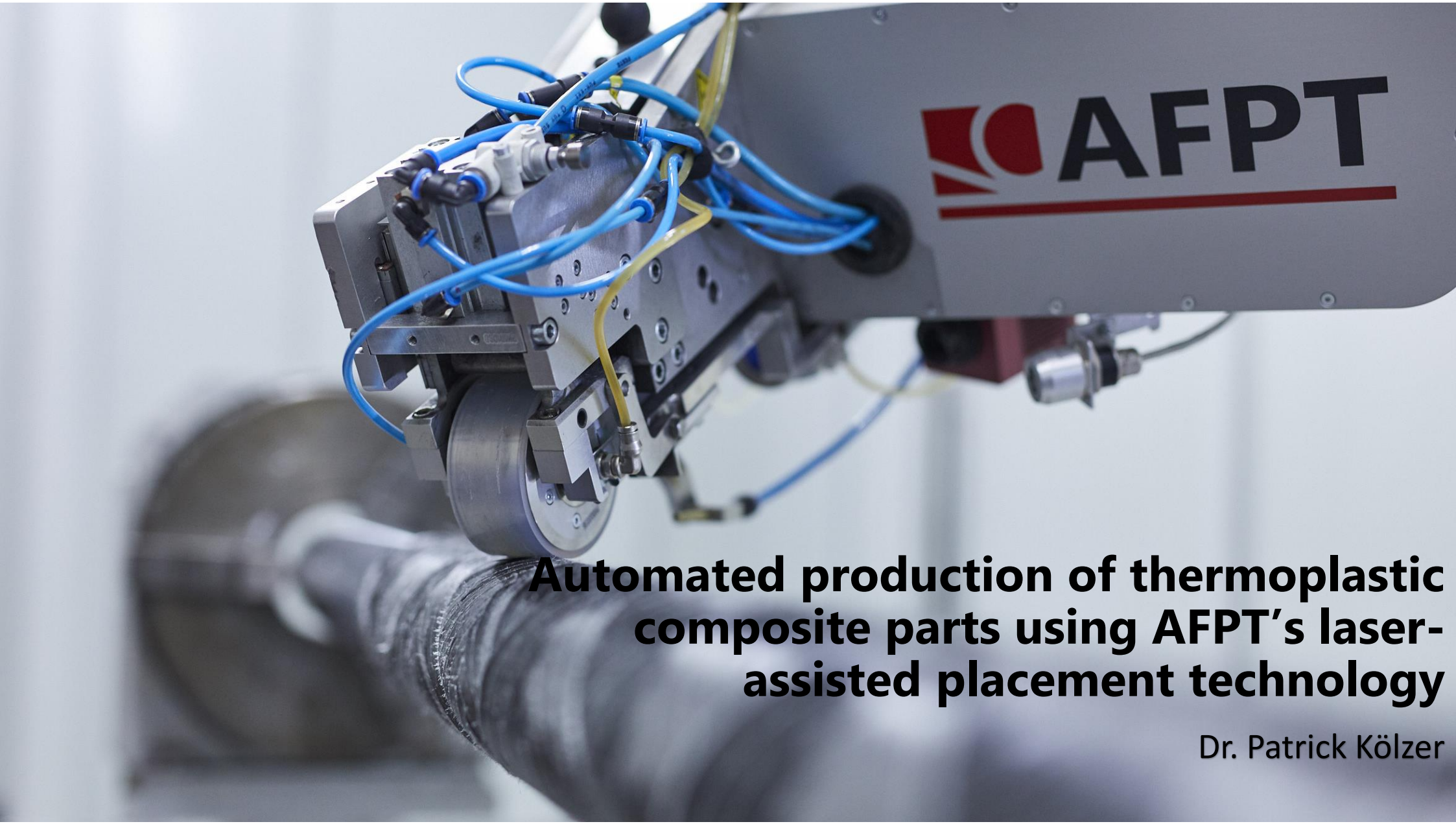
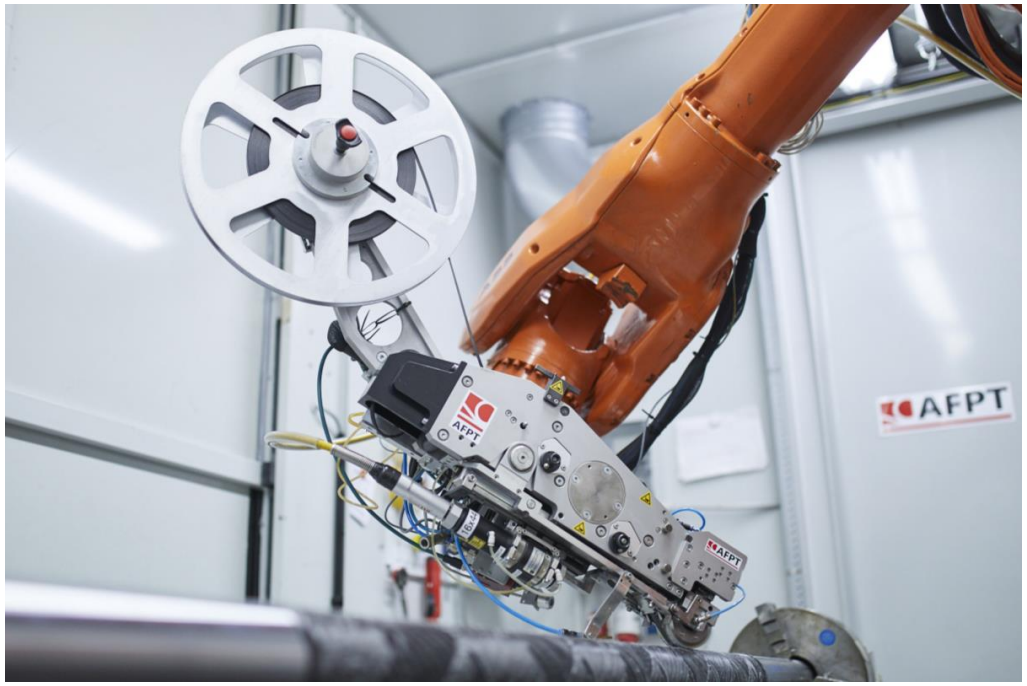
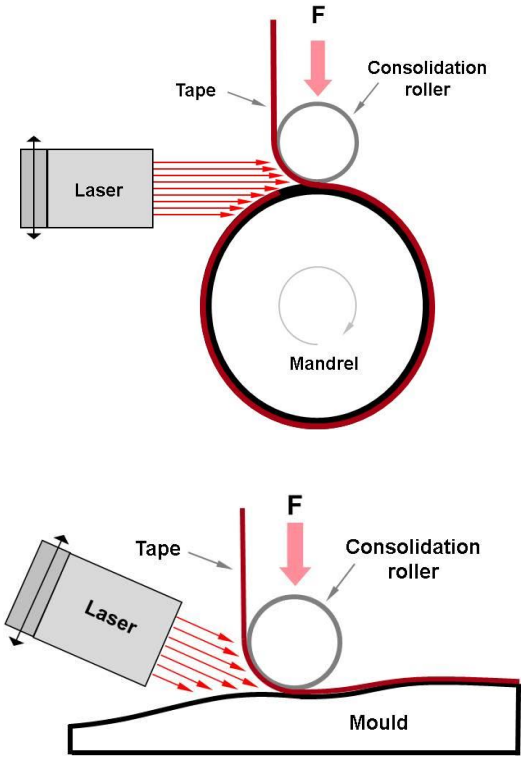


Automated production of thermoplastic composite parts using AFPT's laser-assisted placement technology

Dr. Patrick Kölzer

The Process Basics





Application Center

- Four different placement cells available
- Development of thermoplastic composite components together with the customer
- Production of composite components
- Small Serial Production
- Further development of the laser-assisted placement technology
- Commissioning of placement systems

R&D Systems

Research and development facilities with AFPT's laser-assisted placement technology in the market

- LCC in Munich / Germany
- IComp in Limerick / Ireland
- Cetim in Nantes / Ireland
- DLR in Stuttgart / Germany
- DLR in Augsburg / Germany
- ANU in Canberra / Australian
- Company (N.N.) / Japan

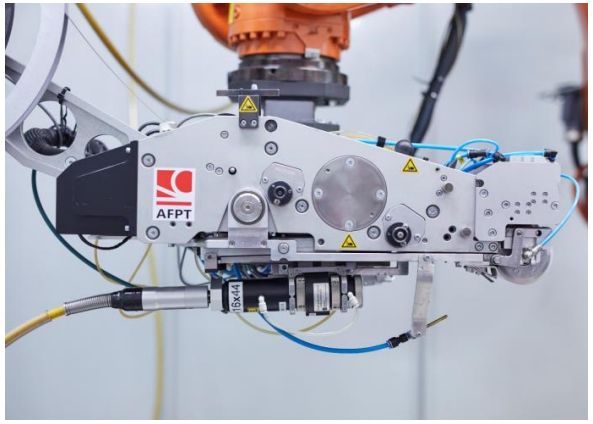
Industrial Systems

- 18 placement systems delivered to a customer in the offshore industry for the production of endless composites pipes
- 2 machines for the production of endless pipes
- 1 complete facilities for the serial production of 450.000 small tubes per year
- 2 complete facilities for the serial production of big tubes

Vision for the future

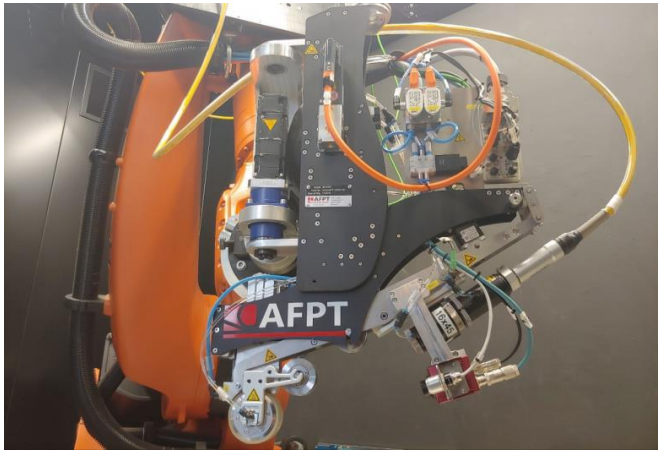
Fully automated production process for the manufacture of thermoplastic composite components using AFPT's laser-assisted placement technology

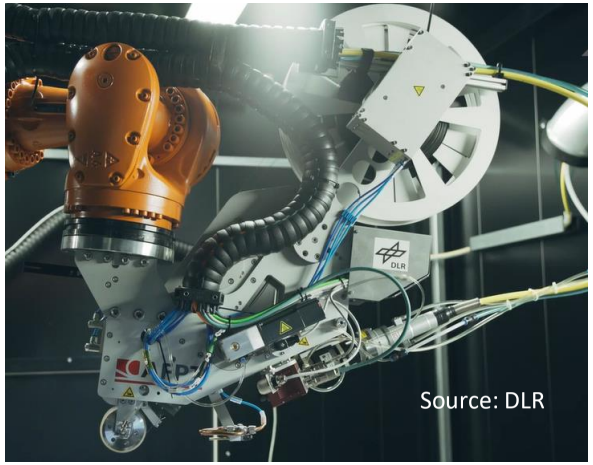
Placement Tools



Standard Winding

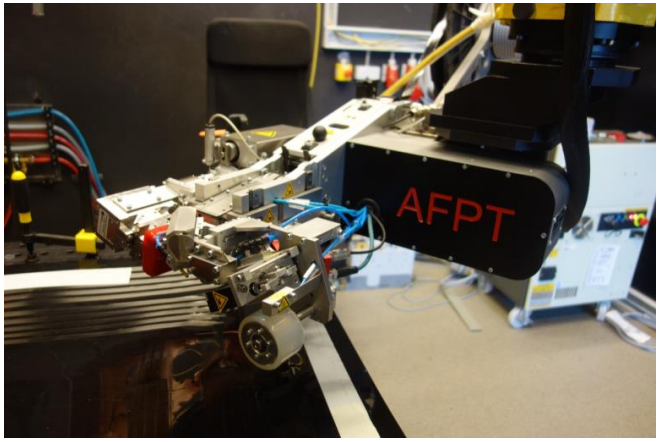
Vessel Winding





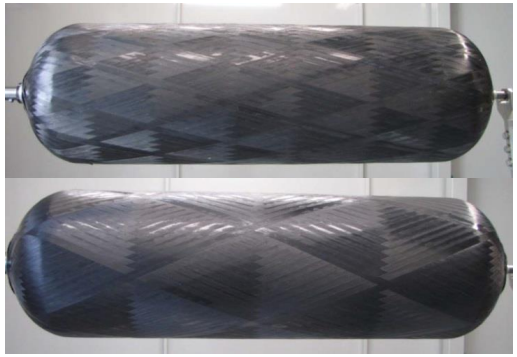
Placement and Reinforcement

Special Applications



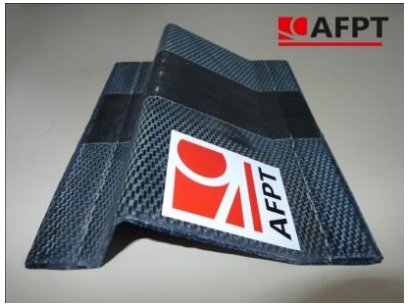
Market

vessel winding
pressure vessels, CNG and H_2



tube winding
seals, bearings, piping systems, structural elements

local reinforcement
plastic components, tailored blanks, metallic structures



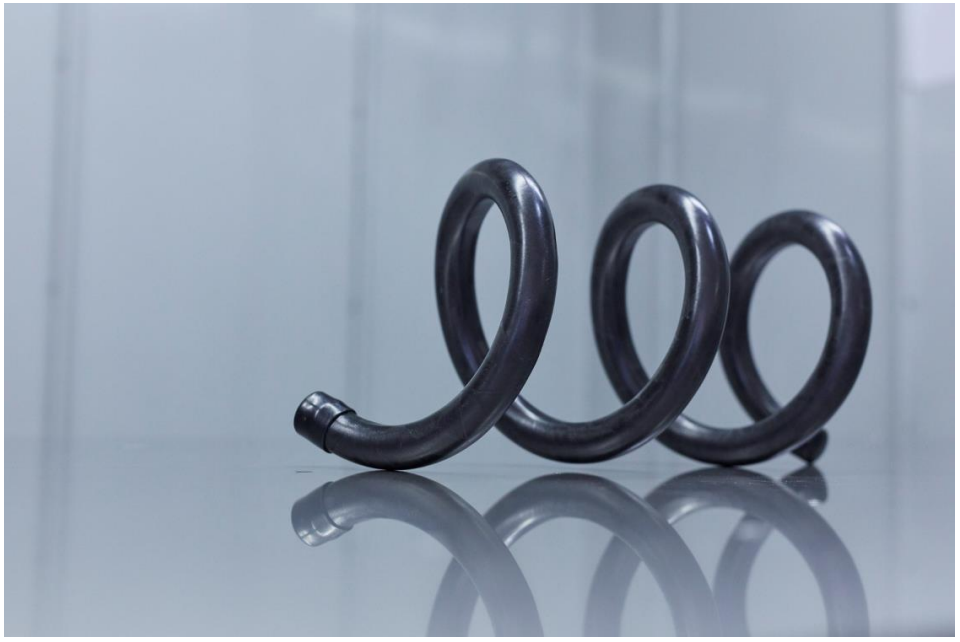
Source:
Ems Chemie

inlays for injection molding
Rings, beams, other structures

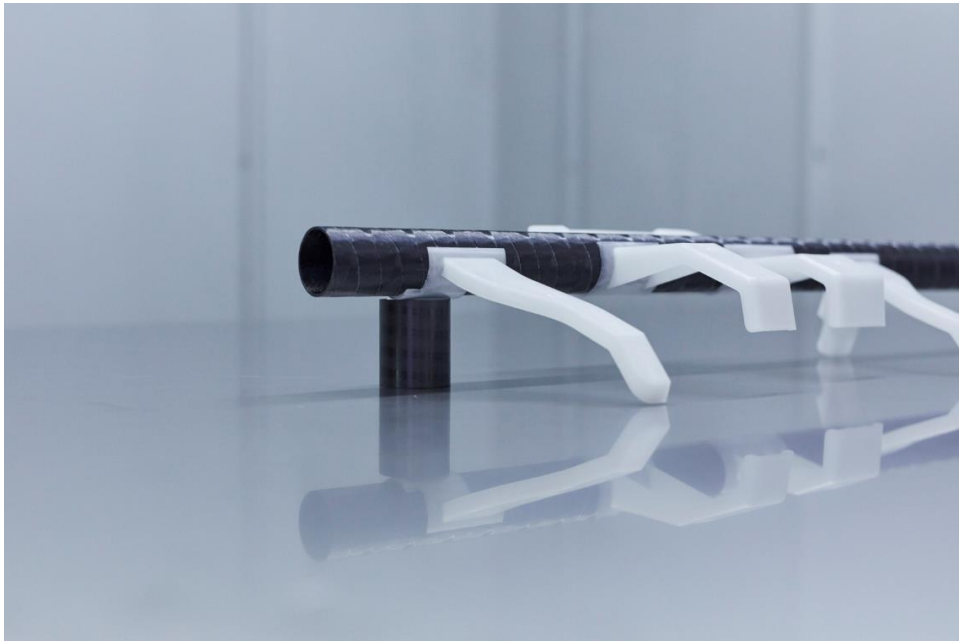
Serial Production

Further processing of fiber composite components

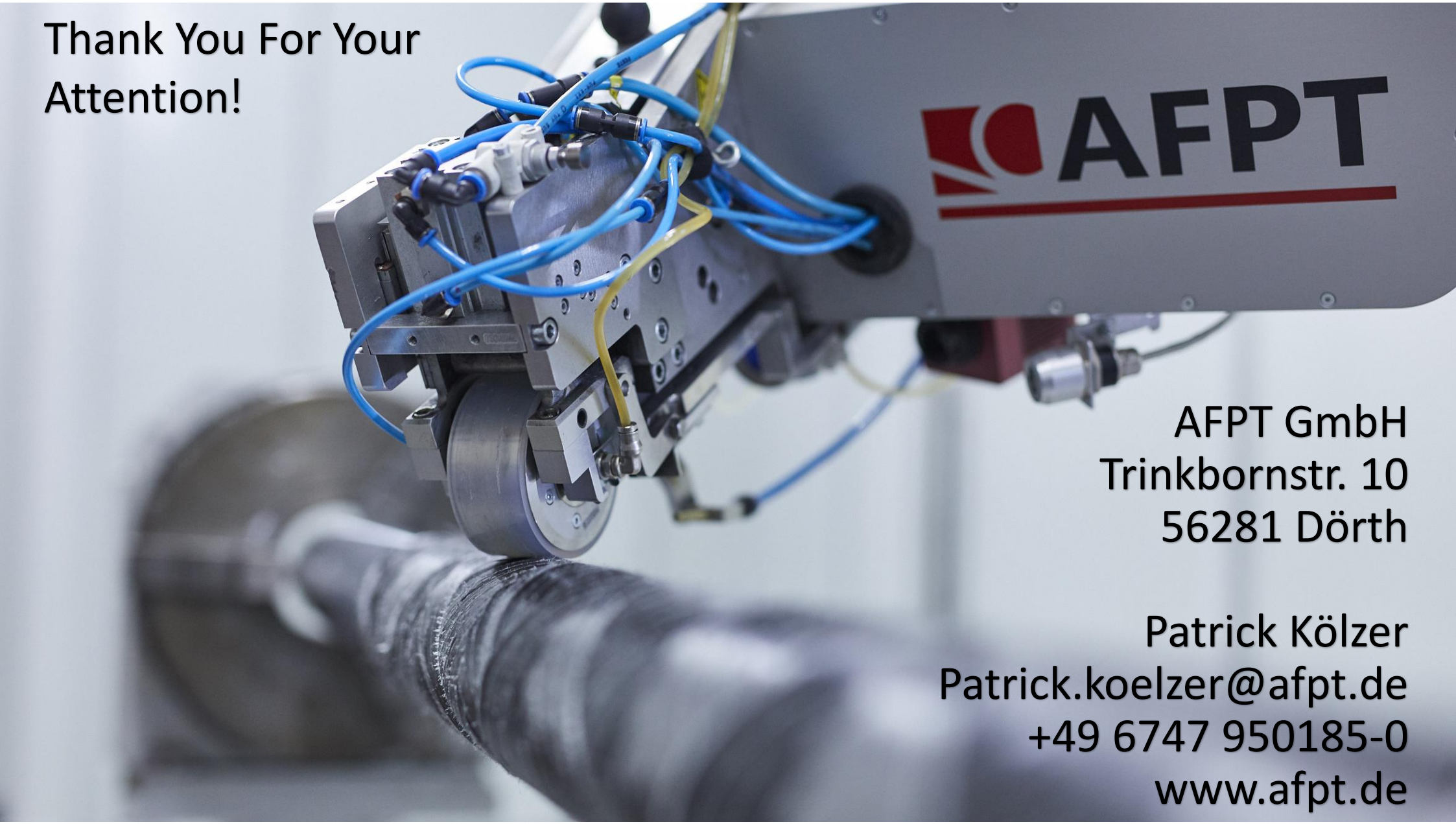
Reforming



Overmoulding



Source: Mitsui Chemicals



Thank You For Your Attention!

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