

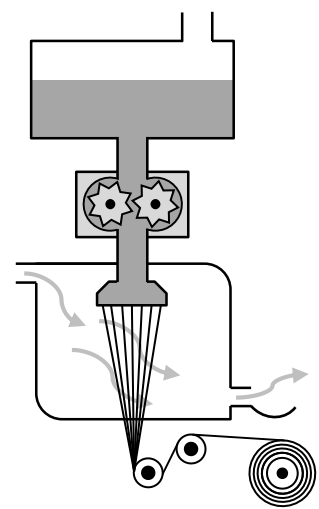
# CO<sub>2</sub>TEX: CO<sub>2</sub>-CONTAINING THERMOPLASTICS IN TEXTILES

LUKASZ DEBICKI, JAN THIEL, HENNING LÖCKEN, THOMAS GRIES

INSTITUT FÜR TEXTILTECHNIK DER RWTH AACHEN UNIVERSITY, [CONTACT: LUKASZ.DEBICKI@ITA.RWTH-AACHEN.DE](mailto:LUKASZ.DEBICKI@ITA.RWTH-AACHEN.DE)

## State of the Art

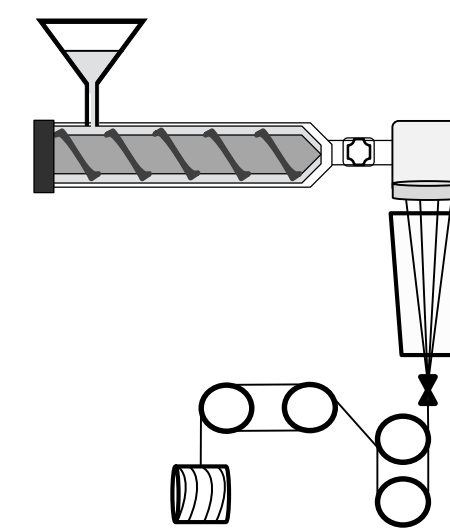
Dry Spinning  
> 99 % of all  
PU-Filaments,  
CAGR: ~ 8 %,  
2020: 1.22 MT



max. 1,000 m/min  
Costs for Solvents  
(~ 2 €/kg DMF)  
Solvent Recovery

## Target of CO<sub>2</sub>Tex

Melt Spinning



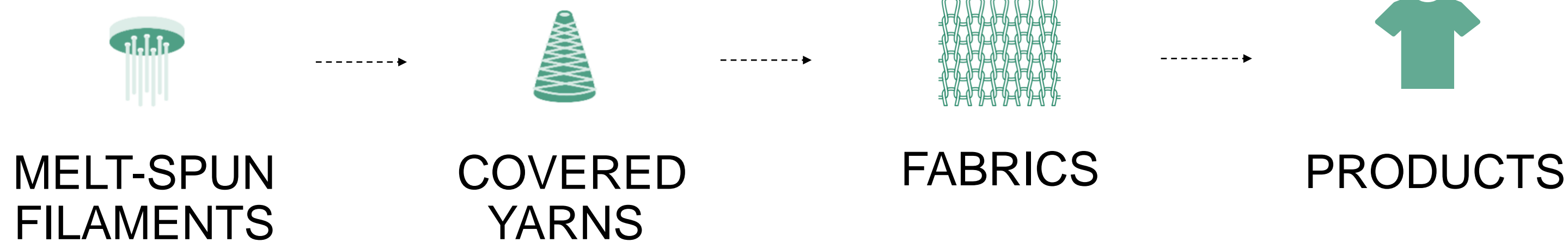
min. 2,500 m/min  
No Costs for Solvents  
No Solvent Recovery

**MAIN DEFICIT:** HIGH TACKINESS OF YARNS HAMPERS FABRIC PRODUCTION

**APPROACH:** MODIFICATION OF MELT SPINNING PLANTS AND PROCESSES

**PROJECT COURSE:**

**ALONG THE  
PROCESS CHAIN:**



**RESULT:** CONCEPT FOR A MELT SPINNING PLANT ON TRL 8 TO 9



CO<sub>2</sub>-TPU Yarn by ITA

**Melt-Spinning of  
CO<sub>2</sub>-containing  
TPU Successful**

**Development of  
First Yarns,  
Medical and  
Sports Textiles  
Successful**



CO<sub>2</sub>-TPU Yarn Containing Textile Fabric  
by adidas



SPONSORED BY THE

