Institute for Materials Handling and Plastics

Chair of Conveying and Material Flow Technology FTM

About this organisation

Machine translation

This organisation has been machine-translated based on data provided in German.

The FTM is involved in the development of efficient materials handling systems and a wide range of research topics in the working groups: - Application engineering of renewable materials (AEW) - Textile machine elements (TM) - Plastic components and tribology - Assemblies and conveyor systems - Vibration conveyor technology and system dynamics - Safe mechatronic systems. Research fields related to lightweight construction are

AEW is involved in the realisation of technically efficient modular construction methods made from renewable materials with the aim of replacing energy-intensive metal materials and plastics. With the vision of establishing WOOD IN MACHINE CONSTRUCTION, AEW is making a contribution to green materials handling technology. Wood, as a naturally grown lightweight material, scores highly in moving applications and, in contrast to plastics, metals and FRP, has a favourable energy and CO2 balance. TM specialises in tensile and load-bearing materials for mechanical engineering based on textile products and their effective manufacture. Established steel wire ropes are currently reaching their technical limits. Moving masses and therefore energy and resource efficiency play a major role. High-strength fibres represent an alternative due to their favourable breaking force-to-mass ratio, good chemical/ corrosion resistance and flexibility.

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Organisation type
University or higher education institution

Sectors
Others: Textilindustrie, Fördertechnik, Transport- / Verarbeitungsmaschinenbau

Employees
10 up to 49

Turnover
n/a

Funding
n/a

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About this organisation

Main areas covered	Conveyor technology, Wood in mechanical engineering, Textile traction and load-bearing equipment, Testing technology, Tribology
Infrastructure	Textile production technology and testing, Test field, Universal test, Application testing, System analysis and monitoring
Certifications	
Keywords	Wood, renewable materials, textiles, rope
Memberships	German Logistics Association (BVL) e.V., Dr Friedrich Jungheinrich Foundation, Society for Tribology (GfT) e.V., OIPECC, WGTL

Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Offer			
Products Parts and components, Semi-finished parts, Machines and plants, Systems and end products	✓	✓	
Services & consulting Consulting, Testing and trials, Engineering, Prototyping, Validation, Simulation, Technology transfer	✓	✓	

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Field of technology			
Design & layout Hybrid structures, Lightweight material construction, Others (Lightweight structure)	✓	✓	
Functional integration Media conductivity, Sensor technology	✓	✓	
Measuring and testing technology Component and part analysis, Visual analysis (e.g. microscopy, metallography), System analysis, Materials analysis, Destructive analysis, Others (Analysing connection technology)	✓	✓	✓
Modelling and simulation Loads & stress			✓
Plant construction & automation Plant construction	✓	✓	
Recycling technologies Recycling	✓		

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Manufacturing process			
Additive manufacturing			
Coating (surface engineering) Others (Textile coating processes)	✓	✓	✓
Fibre composite technology			
Forming			
Joining Screwing, Welding, Others (Splicing, rope end connections, positive locking)	✓	✓	✓
Material property alteration Others (Thermofixing of fibre ropes, local compaction of wood-based materials)	✓	✓	✓
Primary forming			
Processing and separating			
Textile technology Braiding, Textile surface treatment and finishing, Weaving	✓	✓	✓

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Overview of lightweighting expertise

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	Research	Development	Manufacturing & Supply
Material			
Biogenic materials Bioplastics, Biocomposites, Wood	✓	✓	
Cellular materials (foam materials)			
Composites Natural fibre reinforced plastics (NFRP)	✓	✓	
Fibres Aramid fibres, Natural fibres, Others (High-performance fibres)	✓	✓	
Functional materials			
Metals			
Plastics Elastomers, Thermoplastics	✓	✓	
Structural ceramics			
(Technical) textiles Yarns, rovings, Meshes, Woven fabrics	✓	✓	

Contacts

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Contacts

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