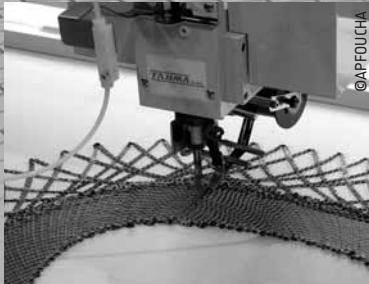


# AUTOMATION FORUM

WEDNESDAY, MARCH 25 2009

2:30 AM – 5:00 PM

## TOWARDS THE AUTOMATION OF THE COMPOSITE MARKET



### Moderator

● **CFK Valley Stade. Jens Kühl,**  
Head of Operations & Development  
Composite Technology Center Stade

Studied automotive design engineering at the University of Applied Sciences in Hamburg with main focus on interior design engineering. COO for Business of the Composite Technology Centres in June 2008. Manager in charge for three Airbus A380s. Head of Versions within the Airbus Centre of Excellence Cabin & Cargo Customization



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## TABLE OF CONTENTS

### HIGH-VOLUME COMPOSITE PRODUCTION

#### 1 Integrated Thermoforming Process for Mass Production of CFRP Parts 3

● **Faserinstitut Bremen e.V. (Fibre). Christian Peters, M.Sc. Dipl.-Ing.**

- An automated process line with one minute cycle time
- Integrated automated quality systems: non-destructive testing with laser-ultrasonic and non-destructive inspection with digital image analysis
- Integrated automated final cutting process
- Producing thermoplastic CFRP and GFRP parts with a high level of automation by constant high-quality and low production prices

#### 2 Handling in High-Volume Production of Endless-Fibre Reinforced High-End Products 11

● **Fraunhofer IPT. Martin Steyer, Dipl.-Ing.**

- Trends for fibre-reinforced plastics in industrial applications and current manufacturing processes
- Automation of handling processes for the placement of fibre-reinforced textiles and preforms

#### 3 Continuous Manufacture of Curved Reinforced Profiles from Endless Fibres and Webbing 21

● **Thomas GmbH + Co. Technik + Innovation KG. Dr.-Ing. Jansen Klaus,**

General Manager. Head of R&D

- A new pultrusion process to create every type of bow or curve as simply as a straight profile
- A real series production process
- Applications ranging from structural elements in architecture to elastic elements in machine engineering

### AUTOMATED CUTTING AND PLACEMENT

#### 4 Cost-Controlled 3D Engineering of Composite Elements 29

● **Lectra. Michaël Kopecky, Technical Textiles Consultant**

- A complete 3D digital chain
- Save time and cost from product development to virtual prototyping
- Manage your costs thanks to pattern measurement and nesting before prototyping
- Increase the quality of your end-products thanks to pattern feasibility analysis
- Speed up the decision-making process, ease collaboration and speed time to market thanks to realistic end product simulations

#### 5 Laser-Assisted Tape Laying of Thermoplastics 37

● **Fraunhofer Institute for Production Technology. Markus Dubratz, IPT. Dipl.-Ing.**

- Trends for fibre-reinforced plastics in industrial applications and current manufacturing processes
- Automation and process: competence of the Fraunhofer IPT
- Process of diode-laser-assisted thermoplastic tape laying
- Development of tape laying systems at the Fraunhofer IPT

#### 6 Machine-Independent Automated Fibre Placement Programming & Simulation 47

● **CGTech. Bill Hasenjaeger, Product Marketing Manager**

- Introducing the key components of machine independent off-line programming software
- Advantages and challenges with this approach in the industry today
- Machine-independent software in future technology development

### DIELECTRIC MONITORING

#### 7 Dielectric Monitoring and Control of Reactive Thermoplastic Composites Processing 59

● **The European Association of Innovating SMEs.**

**Pera Innovation. Nicholas McCarthy, Technologist**

**Inasco Hellas Co. G.M.Maistros, Research Director**

- Dynamic: a three-year, 'Framework Six' funded project
- Durable, high-temperature dielectric sensors
- Used in a wide range of reactive systems or with any process