SAMPE Europe Symposium 2012 (SEMAT 12)

“Symposium on Automation of Advanced Composites and its Technology”

Munich, Germany
24-25 May 2012

Editors:

Mark A. Erath

ISBN: 978-1-62276-266-8
PROGRAMME on Tuesday, May 24th, 2012

09.00 – 09.30h OPENING AND KEY-NOTE PRESENTATION

Opening
Welcome address by Prof. Klaus Drechsler, TU Munich, Past-President SAMPE Europe

Key-Note Paper 13 Status of Automation for Advanced Composite and Outlook for complementary developments
Speaker & Author Otto Kellenberger, KUKA Roboter, Augsburg

09.30 – 10.00h COFFEE BREAK

10.00 – 12.00h SESSION 1: AUTOMATION TECHNOLOGY FOR CAR INDUSTRY
Chairman: K. Drechsler, TU Munich

Paper 06 Artificial Intelligence in high-volume Composite Manufacturing
Speaker Christian Sorg, BMW Group, Landshut
Authors M. Kühberger, C. Sorg, K. Drechsler, BMW Group, Landshut

Paper 01 Light Weight Production Technology
Speaker & Author Karl-Otto Strömberg, FlexProp AB., S-302 41 Halmstad

Paper 05 Tailored Fibre Placement - an Option for High Volume Preform Production
Speaker & Author Stefan Carosella, Universität Stuttgart, IFB-Institut, Stuttgart

Paper 28 Fibre reinforced plastics (FRP): application in automation
Speaker & Author Ben Haugk, TRUMPF GmbH & Co. KG., D-71254 Ditzingen

12.00 -13.00h LUNCH

13.00 – 15.00h SESSION 2: FIBREPLACEMENT & PREFORM APPLICATION
Chairman: U. Ebert

Paper 02 Dry-Fiber-Placement with a Standard Articulating Robot System
Speaker Timo Dierssen, BROETJE-Automation GmbH
Authors T. Dierssen, BROETJE-Automation GmbH & C. Weimer, F. Dorn, Eurocopter Deutschland GmbH

Paper 12 Automated Manufacturing of Carbon Fibre Preforms using the Braiding Technique
Speaker Felix Fröhlich, Technical University Munich, Garching
Authors O. Rüger, F. Fröhlich, K. Drechsler, Technical University Munich, Garching

Paper 15 Overcoming the challenges of automated preforming of semi-finished Textiles
Speaker Daniel Brabandt, Karlsruher Institut für Technologie (KIT), Karlsruhe
Authors J. Fleischer, G. Lanza, H. Wagner, D. Brabanat, KIT Karlsruhe
**Paper 11** Automated Process Chain for the Manufacturing of Fiber Reinforced Plastics (FRP)

**Speaker** Andreas Glück, iwb Anwendungszentrum Augsburg, Geschäftsfeld Montagetechnik, Technical University Munich, Garching

**Authors** G. Reinhart, C. Ehinger, A. Glück, iwb Anwendungs-Zentrum, Augsburg

**15.00 – 15.30h** COFFEE BREAK

**15.30- 17.00h** SESSION 3: ADVANCEMENTS IN ROBOTIC

**Chairman:** U. Ebert

**Paper 10** Overall Cost Reduction by selection of the right Fiber Placement Equipment

**Speaker & Author** Michael Muser, Ingersoll Machine Tools Inc., USA

**Paper 17** 3D Application for technical Textiles

**Speaker** Guido Jaeger, KSL Sondermaschinenbau, D-64653 Lorsch

**Authors** R. Keilmann, G. Jaeger, KSL Sondermaschinenbau, Lorsch

**Paper 18** Recent advances in robotic automated deposition of different materials

**Speaker** Johannes W.G. Treiber, Coriolis Composites GmbH., D-86159 Augsburg

**Authors** N. Naumann, J.W.G. Treiber, Coriolis Composites GmbH., D-86159 Augsburg & D.D.R. Cartlé, A. Hamlyn, Coriolis Composites SAS., F-56530 Quèven

**Paper 27** A Composite Manufacturer’s perspective on automation: Low-Cost, Product-Dedicated and in house developed

**Speaker** Anders Brodsjo, AIRBORNE Technology, NL-2497 GB Den Haag

**Authors** M. Verkade, M. Kremers, A. Brodsjo, AIRBORNE Technology, Den Haag

**17.30 – 22.30h** SEMAT DINNER integrated at AUTOMATICA BAVERIAN Evening at the AUTOMATICA ICM – Foyer 1 – next to the Entrance Gate West

**PROGRAMME on Friday, May 25th 2012**

**08.30 – 10.00h** SESSION 4: AUTOMATION TECHNOLOGY FOR AEROSPACE INDUSTRY

**Chairman:** K. Drechsler, TU Munich

**Paper 07** Automated Assembly and Bonding Technologies for Advanced Helicopter Structures

**Speaker** Andreas Strobl, EUROCOPTER Deutschland GmbH., Labor – Materialien – Prozesse, D – 81663 München

**Authors** C. Weimer, H. Wehlan, A. Strobl, EUROCOPTER Deutschland GmbH., Labor – Materialien – Prozesse, D – 81663 München

**Paper 03** Implementing Knowledge based Engineering in Industry: Automated Electrical Wire Harness Design in Aircraft

**Speaker** Stefan van der Elst, KE-works BV., NL-2629 JD, Delft

**Authors** J. Berends, J. Wildemast, S. van der Elst, KE-works BV
I Innovations for the manufacturing of Composite Helicopter Structures
Speaker: Florian Dorn, Eurocopter Deutschland, Ottobrunn
Authors: U. Eberth, A. Rack, Eurocopter Deutschland, Ottobrunn

10.00 – 10.30h COFFEE BREAK

10.30 – 12.30h SESSION 5: MATERIAL & MODELING ASPECTS
Chairman: R. Ziegmann

Paper 23 Modeling Material Kinematics Behaviour during Manufacturing Layup Processes
Speaker: Massimiliano Moruzzi, Magestic Systems Inc., Westwood, N.J. 07675
Authors: D. MacLean, R. Blackburn, CYTEC Engineered Materials & M. Moruzzi, Magestic Systems Inc., Westwood, N.J. 07675

Paper 16 Development of an automated production with integrated Quality Assurance - Trends, needs and approach in Composite production
Speaker: Michael Kupke, DLR
Author: M. Kupke, T. Schmidt, DLR

Paper 26 Metering Technology – The Way to automated Composite Production
Speaker: Olaf Leonhardt, Schucker GmbH & Co. KG., D-75015 Bretten
Authors: T. Schmidt, O. Leonhardt, Schucker GmbH & Co. KG.

Paper 24 Material Advances for Automation in Resin Infusion
Speaker & Author: Samuel Hill, CYTEC UK

12.30 – 14.00h LUNCH

14.00 – 15.30h SESSION 6: NOVEL ASPECTS FOR AUTOMATION
Chairman: M. Erath, ACMC Consulting

Paper 20 Fiber Patch Preforming highly efficient Process for Preform Production
Speaker: Martin Steyer, Manz Tübingen GmbH., Tübingen
Authors: M. Steyer, Manz Tübingen GmbH., Tübingen & C. Breu, EADS Innovation Works

Paper 22 Vision based Sensors enabling automated production of Composite Material
Speaker: Stefan Thumfart, Profactor GmbH., A-4407 Steyr-Gleink
Authors: W. Patfinger, C. Eitzinger, S. Thumfart, Profactor GmbH.

Paper 25 Resin Spray Transfer - A novel process for high quality composite body panels for automotive applications
Speaker: Jens Schlimbach, Quickstep Deutschland GmbH.
Authors: A. Di Pietro, Quickstep Technologies Pty Ltd., UK & J. Schlimbach, Quickstep Deutschland GmbH.

15.30 – 15.45h Closing SEMAT 12
Chairmen: K. Drechsler – M. Erath

15.45 – 16.15h COFFEE BREAK