Special Events

Congress Venue
The conference will take place at the Congress Centrum in Würzburg. The airports of Frankfurt a. M. and Nuremberg are reachable within about an hour by train or car. From the main station, you can reach the Congress Centrum either by tram (tramway 2, towards Zellerau, Stop ‘Congress Centrum’), by taxi (about 1 km) or on foot (through the ‘Klingerau’ bridge).

Congress Language
The congress language is English. A simultaneous translation will not be provided.

Opening Hours of the Conference Office
Monday, September 24th: 1:30 p.m. – 8:00 p.m.
Tuesday, September 25th: 8:30 a.m. – 6:00 p.m.
Wednesday, September 26th: 9:00 a.m. – 4:00 p.m.

Registration
After registering via the online registration tool, the participation can take place. The registration tool can be found at www.3dmid.de in the menu item CONGRESS MID / Registration.

Participation Fees and Service
The participant fee has to be paid on receipt of the invoice to the account as indicated. It includes the attendance at the congress and the exhibition, the conference proceedings as well as the lunches, beverages during breaks and the evening event. If the payment of the congress fee is not received before the beginning of the congress, a copy of the bank transfer is required.

Registration until July 31st: 800, – €
after July 31st, 2018: 1000, – €
Members 3-D MID e. V.: 600, – €
Speakers and University Members: 350, – €
Exempt from VAT according to §4, Nr. 22a UStG

Cancellations can be accepted in written form. The following processing fees will be charged:
• until July 31st, 2018: 30% of the conference fee will be refunded.
• after July 31st, 2018: total fee, the conference proceedings will be sent.

Organization Committee
Prof. J. Franke – University of Erlangen-Nuremberg, FAPS, DE
Dr. I. Kreßlitzsch – Research Association 3-D MID e. V., DE
Dr. C. Gocht – Cordt Temic microelectronic GmbH, DE
Dr. A. Pöllinger – 2E mechatronic GmbH & Co. KG, DE
P. Bräuer – Research Association 3-D MID e. V., DE
A. Stöckigt – Research Association 3-D MID e. V., DE

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General Information

Exhibition
In the course of the congress, an exhibition will take place in the centrally situated Franconia Foyer of the Congress Centrum Würzburg, accompanying to the lecture program. Congress participants obtain the opportunity to present their products, manufacturing solutions, and range of services in the field of the technology MID to the international expert audience of manufacturers and users. For the necessary application (until August 10th, 2018) and further information, please contact the 3-D MID’s office.

General Meeting
In advance of the Congress a general meeting of the Research Association 3-D MID e. V. takes place on Monday the 24th from 2.00 p.m. to 6.00 p.m. After the general meeting an Evening Reception for the participants and the speakers of the congress is offered starting 6.30 p.m. in the Congress Centrum Würzburg. Further information will be provided soon.

MID Advancement Award 2018 / Best Paper Award
To award an outstanding development work in the area of the MID technology, the Research Association 3-D MID e. V. confers the MID Advancement Award 2018 in the framework of the congress. Additionally, the best scientific congress contribution will be honored with the Best Paper Award.

Evening Event
Following the lecture program, a boat trip (including dinner) takes place in the evening of September 25th, 2018. While the restaurant ship ‘Alte Liebe’ floats down the Main, a buffet and drinks are offered. Meanwhile, Liebe floats down the Main, a buffet and drinks are offered. Meanwhile, the beautiful scenery of the vineyards, the medieval buildings along the Main and the sunset can be admired.

Technical Tour
In extension to the conference program, a Technical Tour to hoch.rein GmbH at the INNOPARK GmbH in Kitzingen is offered on Wednesday evening, September 26th, 2018. Multiple companies of the sectors Energy and Future, Technology and Innovation show their innovative technical solutions. Congress participants obtain the opportunity to present their products, manufacturing solutions, and range of services in the field of the technology MID to the international expert audience of manufacturers and users. For the necessary application (until August 10th, 2018) and further information, please contact the 3-D MID’s office.

Functional Integration by MID
Due to a direct application of conductor tracks and functional structures on randomly shaped substrates, the technology MID (Molded Interconnect Devices / Mechatronic Integrated Devices) enables the production of highly integrated mechatronic products. The varied possibilities for combining electrical / electronical, mechanical, optical, thermal and fluidic functions in one unit offer enormous potential to meet the increasing requirements regarding miniaturization and function density, reliability and costs in the various fields of application.

MID Technology ready for the future
With the Internet of Things (IoT) and growing demand for digitalization and networking everywhere the world of technology faces new challenges. Electronic needs to be integrated in nearly every device - small, flexible, smart and reliable. MID redefined as Mechatronic Integrated Device reflects the market requirement. Breaking the boundaries to offer an holistic technology approach is the aim of MID in the future. With printing and flexible technologies in production and application new solutions will be made possible with MID. The MID-Congress 2018 is the starting point for a new understanding. Be part of this experience.

Latest Technology Developments from both an Industrial and a Scientific Perspective
Advanced mechatronic systems are characterized by the intelligent integration of different functions in miniaturized installation space and use the latest developments in materials, manufacturing processes as well as production technology. The extensive conference program provides an excellent overview of the current state of the art by target-group-oriented sessions:
• Potentials through MID for various fields of application
• Presentations of innovative MID applications
• New application potentials through printed electronics
• Latest developments in the field of MID-materials
• Additive manufacturing and MID prototyping
• Methodology of development and testing

MID 2018: Platform for Experts and Beginners
The international conference has established itself as a worldwide recognized forum for the MID technology:
• Lectures from manufacturers, users and research institutes
• Intensive exchange of information and experience
• Direct information at the accompanying exhibition
• Attractive social program for informal contacting
• Technical Tour to hoch.rein GmbH
Session 1: Industrial Applications
(Dr. C. Goth, Cerc Temic microelectronics GmbH)
11:15 Thirty Years of MID Technology and ASEP (Application Specific Electronics Package) the “Next Generation MID”, V. Zading, Molec, Inc., US
11:40 MID in communication systems, J. B. Obermaier, Huawei Technologies, DE
12:05 3D Miniature Low Frequency Active Antenna for Firemen Pagers by LDS Technology, Dr. M. Moguesdel, S2P - Small Plastic Products, FR
12:30 Lunch Break

Session 2a: Innovative Materials
(Dr. J. Hayer, hoyerconsulting)
13:45 Rapid Prototyping Made Easy through 3D-Printed Xantar LDS Materials, M. Beirn, MEP Europe B.V., NL
14:10 Epoxy Molding Compounds for Use in MID, H.F. Buchmann, Darusco GmbH, CH
14:35 Electroless Copper Deposits Providing High Ductility and Adhesion for Advanced MID Applications, R. Ratalick, MaxDaniel Ethnco, Inc., US

Session 2b: Ceramics
(T. Stoll, University of Erlangen-Nuremberg, FAPS)
13:45 Limits of Ceramics in the 3D-MID with Additively Produced Aluminum Substrate, E. Götzke, KIT – vkt, DE
14:10 Innovative Ceramics for 3D-MID Applications, L. Wang, University of Erlangen-Nuremberg, FAPS, DE
14:35 Laser-Induced Selective Metallization of 3D Ceramic Interconnect Devices, E. Emainrat, University of Stuttgart, DE
15:00 Coffee Break

Session 3a: Printed Electronics – Applications and Potentials
(W. Miquet, MITWach)
15:30 3D Mechatronic Systems via Printed Electronics, Dr. M. Hedges, Neotech AMT GmbH, DE
15:55 OPV – Enabler for the Digital Era, Dr. R. Pätzold, OPVUS GmbH, DE
16:20 Generation of 3D Functional Structures for High-Frequency Applications by Printing Technologies, M. Ankenbrand, University of Erlangen-Nuremberg, DE
16:45 Influences of Manufacturing Sequences for the Application of Printed Electronics on Aircraft Interior Components, N. Ischloch, Fraunhofer IAP, DE

Session 3b: Alternative Manufacturing Processes
(H. Rohde, Robert Bosch GmbH)
15:30 Flexible Aluminum Circuits in 3D MID Applications, M. Blies, Plasma Innovations GmbH, AT
15:55 Optimized Thermoforming Process for Conformable Electronics, C. Kalmayer, Fraunhofer IZM, DE
16:20 Laser-Assisted Selectional Metallization of Polymers and Glass, K. Ratafias, Center for Physical Sciences and Technology, LT
16:45 New Standards for Three-Dimensional UserInterfaces Manufactured by a Film-Insert-Molding-Process, A. Wimmer, Hochschule Hof, DE
17:10 End of Sessions
18:30 Evening Event: Boat Trip on the Main incl. Dinner

Wednesday, September 26th

Session 4a: Printed Electronics – Pre- and Postprocessing
(Prof. A. Zimmermann, Hahn-Schickard)
09:30 Pushing the Boundaries of 3D-MID: Pulse-Width Modulated Light Technology for Enhancing Surface Properties and Enabling Printed Electronics on FFP-Printed Structures, D. Grill, University of Erlangen-Nuremberg, FAPS, DE
09:55 Influence of Convection Sintering Parameters on Electrical Conductivity and Adhesion of Inkjet-Printed Silver Nanoparticle Inks on Flexible Substrates, J. Roudenko, TH Nuremberg, DE
10:20 Low-Temperature Sintering of Nanometal Inks on Polymer Substrates, Dr. J. Keck, Hahn-Schickard, DE

Session 4b: Materials Research
(Dr. A. Pojtinger, 2E mechatronic GmbH & Co. KG)
09:30 Effect of Talc on the Metal Adhesion of Laser-Structured Polymer Parts, A. J. Fischer, University of Erlangen-Nuremberg, UKT, DE
09:55 Experimental and Computational Study of Array Effects on LED Thermal Management on Molded Interconnect Devices, M. Sofiani, University of Stuttgart, DE
10:20 Investigation on the Influence of Injection Molding Parameters on High Frequency Permittivity up to 3 GHz on MID Thermoplastics and Reliability of Permittivity During Environmental Testing, M. Wolf, Hahn-Schickard, DE
10:45 Coffee Break

Session 5a: Development and Coating-based Functionalization
(Dr. R. Kräger, LPKF Laser & Electronics AG)
11:15 Low Threshold Entry using an MID Specific Layout Tool, H. Friedrich, Ingenieurbüro Friedrich / Beka Layout, DE
11:40 Functionalization of Additive Manufactured Components with Laser Direct Structurable Laccoper, T. Mayer, Fraunhofer IEM, DE
12:05 The Potential of 3D MID Technology for Omnidirectional Inductive Wireless Power Transfer, S. Kametas, S2P - Small Plastic Products, FR
12:30 Applications of Three Dimensional Laser Induced Metallization Technology with Polymer Coating, C. Yang, Industrial Technology Research Institute, TW

Session 5b: Additive Manufacturing
(Prof. K. Kuhlmann, Evonik Industries AG)
11:15 Design Toolchain, Slicing Process and Verification for the Integration of Electronics into FDM Printed Objects, F. Wassell, University of Hamburg, DE
11:40 Integration of Electronic Components in the Thermoplastic Processing Chain: Possibilities through Additive Manufacturing using Conductive Materials, M. Morais, Fraunhofer IKT, DE
12:05 Development of LB-LDS Combined Process and Material Eabling Simultaneous Activation During Additive Manufacturing Process, Prof. T. Nino, University of Tokyo, JP
12:30 Long Term Reliability of Mechatronic Integrated Devices Generated by Fused Deposition Modeling and Laser Assisted Sintering of Printed Structures, B. Niese, Bayerisches Laserzentrum – blz, DE
12:55 Lunch Break

Session 6: Functionalization via Conductive Pastes
(Dr. A. Reinhardt, Seho Systems GmbH)
14:00 Co-Paste for Molded Interconnect Devices (MID), Y. Fizl, Hachi Chemicals Co., Ltd, JP
14:25 Electrical and Mechanical Qualification of Selectively Dispensed Active Brazes, T. Stoll, University of Erlangen-Nuremberg, FAPS, DE
14:50 Reliability and Long-Term Behaviour of SMT Components Mounted on Printed Thick Film Pastes, J. Schirmer, Hahn-Schickard, DE
15:15 Closing Words: Prof. J. Franke, University of Erlangen-Nuremberg, FAPS / Chairman of the Research Association 3-D MID e. V., DE
15:30 End of Congress
15:45 Technical Tour to hoch.rein GmbH incl. Dinner and Transfer