

PRESS RELEASE

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Research Award of Fraunhofer ENAS 2016 for Linking Printing Technologies and Micro/Nano Technologies

Already the sixth time, the Fraunhofer Institute for Electronic Nano Systems ENAS awarded the Fraunhofer ENAS Research Award to a scientist for his excellent scientific research results in microelectronics and/or micro system technologies. On December 20th, 2016, the engineer and scientist Frank Roscher has been awarded. Focus of his work is the deposition of nanoparticle inks on different materials by aerosoljet printing.

So, a new 3D integration approach based on printed multilayers and through polymer vias has been developed for the secure envelope and to enable vertical and horizontal integration of components, different in shape, size, material, process and function combining multi functionalities in one package and miniaturizing smart systems. Therefore, a parylene thin film is insulating conductive multilayers with interconnect vias opened by a fine-tuned laser ablation process. For conductive multilayer fabrication entirely basing on aerosol jet printing (AJP) technique, Fraunhofer ENAS has explored the printing of a commercially available silver nanoparticle ink on a CVD parylene dielectric coating and via filling. Moreover this technology allows to print conductive lines even via substrate or passivation edges.



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Research Award ceremony of the Fraunhofer ENAS in Chemnitz on December 20, 2016. Prof. Dr. Thomas Otto (right), acting director of Fraunhofer ENAS, awarded the prize Frank Roscher (2nd right). The chair women of the research award board, Prof. Dr. Karla Hiller (left), presented the ceremony. Also the head of the department „System Packaging“ at Fraunhofer ENAS, Dr. Maik Wiemer (2nd left), congratulated the awardee for his excellent scientific work.

Editorial notes

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FRAUNHOFER INSTITUTE FOR ELECTRONIC NANO SYSTEMS ENAS

In the honorific speech, Dr. Neumann from InfraTec GmbH Dresden spoke about the possibility to apply this technology also in industry. Currently scientists from University of Technology Chemnitz, Fraunhofer ENAS and InfraTec GmbH work together on additive deposition technologies of new materials for modern infrared sensors in a common project.

To the person Frank Roscher

Frank Roscher is head of the group “Materials for System Packaging” at the Fraunhofer ENAS, an expert for the printing technologies aerosol jet and screen printing. In various public funded projects and industrial projects, he develops new low-temperature wafer bonding technologies based on nanoparticles, on 3 dimensional interconnects as substitutes of common wire bonds and on deposition of special nano materials for optical applications.

He studied microtechnology / mechatronics engineering at the Chemnitz University of Technology and wrote his diploma thesis about deposition of metallic glasses during a research visit at the Tohoku University in Sendai, Japan. he started his career as a researcher at the Center for Microtechnologies of the TU Chemnitz. His scientific results about nanotechnologies for packaging and additive manufacturing technologies are published in papers and on international conferences.



Frank Roscher works as scientist and head of the group „Materials for System Packaging” at the Fraunhofer ENAS and develops printing technologies for deposition of nanoparticle suspensions on substrates for microsystems technologies.

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