

10 Nations again met at KIT to visit the "Thin Film Technology Forum" in Karlsruhe.

June 8, 2018: Numerous guests from Europe, America and Asia attended the 3rd Thin Film Technology Forum on June 7 and 8, 2018. In three thematic blocks, the participants and experts presented and discussed the latest developments in thin-film technology in the field of printed electronics, battery and smart coatings.

The participants were welcomed by the Head of the Division at KIT - Professor Doris Wedlich - and the organizers of this series of events. The opening speech on Printed Electronics was given by Ir. Ike de Vries from Holst Centre in Eindhoven, one of Europe's leading institutions in this field. He presented recent developments of printed electronics with regard to resource scarcity and the growing global demand for energy, but also concerning their special properties: De Vries presented the current state of research in structured stripe and intermittent slot die coating. Lisa Merklein from KIT showed the latest results in the field of multilayer deposition and the consequences of layer inter-mixing using examples of printed electronics as well as the state of the art and strategies for investigating and avoiding them. Prof. Fritz Bircher, Director of the iPrint Institute in Fribourg (CH), presented the latest developments in digital printing and inkjet technologies. Impressive examples of large-area printing on three-dimensional surfaces were shown. Prof. Tobias Kraus - Leibniz Institute for New Materials - presented the production of functional layers of hybrid metal-polymer inks and transparent printed lattices by structuring ultra-thin metal wires in the session.

The morning of the second day of the TFT Forum focused on particulate thin-film systems for lithium-ion battery electrodes and separators. Professor Stefano Passerini from the Helmholtz Institute in Ulm gave an insight into the state of the art in lithium-ion batteries. His outlook to future trends in post-lithium battery systems shows the enormous potential of the new technologies, which go beyond the current state of the art, especially with regard to future availability and worldwide shortage of electrode materials. Dr. Armin Modlinger from Volkswagen AG presented the current technological developments in process technology for the manufacture of batteries. The PhD student Ralf Diehm from the TFT group at KIT presented new findings in the field of coating of lithium-ion battery electrodes and a technology that has set a world record in the field of intermittent high-speed electrode coating. Jana Kumberg - also KIT - presented the latest research results on the drying of high-capacity multilayer electrodes. Topics on simulation and basics in the field of drying of particulate layers were previously dealt with by Prof. Wilhelm Schabel in the Short Course and deepened in the forum by Professor Günter Brenn of TU Graz (AU) based on current research.

Finally, representatives from industry presented current research challenges in the field of thin films. Dr. Marcel Schmitt from BASF SE gave a detailed insight into problems and solution strategies from industry. Dr. Wegener from Schaeffler AG presents the research of Schaeffler AG in the field of coating technology. Dr. Kampioti - CNRS Bordeaux (FR) - presented interesting new findings in the production of electrically conductive inks based on graphene suspensions.

The 3rd Thin Film Technology Forum was once again an excellent opportunity to report on current topics in thin film technology from an academic and industrial perspective and to establish contacts with experts from all over the world.

Again the event will take place in Karlsruhe on May 16 and 17, 2019. In addition to general topics on "Functional Films and Smart Coatings", the focus will be on functional 3D printed multilayers and battery coatings.

At the request of the participants from industry, it will also be possible to present their own research and developments in this area at a short poster session in the foyer together with the exhibitors. It provides starting points for technical discussions and a broader spectrum of research in the field of "Advances in Coating and Drying of Thin Films".



Picture: Opening of the third 'Thin Film Technology Forum' in Karlsruhe

Further information, comments and feedback from participants on the TFT Forum 2018 at www.thin-film-technology.de.