

# coating

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**10<sup>th</sup> ANNIVERSARY AND THIN FILM TECHNOLOGY EVENT.** Numerous guests from ten nations in Europe, America and Asia attended the 4<sup>th</sup> Thin Film Technology Forum on 16-17 May 2019 at the Karlsruhe Institute of Technology, Germany. Experts in the field of printed electronics, battery and smart coatings presented the latest developments. Following a welcome address by Prof. Knebel, Head of the Division Mechanical and Electrical Engineering at KIT, the organizers Prof. Schabel and Dr Scharfer gave a speech on the 10<sup>th</sup> anniversary of Thin Film Technology (TFT) with an overview of facts and achievements from the last 10 years at KIT. In 2009 the University of Karlsruhe (TH) and the Karlsruhe Research Centre merged to KIT and new professorships were founded within the «KIT Elite Future Concept I». The «Thin Film Technology» Professorship appointed in 2009 was supported by the industrial partners BASF; Bayer and Roche. In the last ten years, the TFT group received 25 national and international research awards for highlights achieved by the group. The 4<sup>th</sup> TFT Forum started with PhD students (TFT group) presenting their research highlights. An overview speech on Printed Electronics was given by Ir. Ike de Vries from Holst Centre Eindhoven, one of Europe's leading institutions in this field. He described recent developments of printed electronics concerning the growing global demand for energy and gave a current state of research on roll-to-roll printing at Holst Centre. Professor Fritz Bircher, Director of the iPrint Institute in Fribourg (CH), highlighted the latest developments in digital direct printing and inkjet technologies. Impressive examples of large-area printing on three-dimensional surfaces were shown and an outlook on future applications of digital direct printing was given. The evening get-together with tapas and cocktails was another highlight of the day. On the second day of the TFT Forum, the focus was on lithium-ion battery electrodes. Professor Arno Kwade, director of the Institute of Particle Technology

(IPAT) at TU Braunschweig presented challenges and advances in the processing of battery cells. He presented an overview of the cell production process at the Braunschweig Battery lab. Towards industrial challenges and perspectives, Dr Armin Modlinger from Volkswagen AG gave a talk about lithium-ion battery research at Volkswagen AG and the next steps at VW already announced in news. Prof. Nirschl from KIT showed fundamental research results on simulation approaches in the mixing of battery slurries. Diehm and Kumberg (TFT group) presented the latest results on the coating and drying of multi-layer Li-ion battery electrodes. This new multi-layer approach is a promising method to optimize binder distribution over the film height. Prof. Kleine Jäger, head of the solids processing department at BASF, started the session on smart coatings and presented research highlights of the Coating and Film Processing group and the research demand on smart coatings at BASF. Prof. Tropea from TU Darmstadt gave an impressive, fundamental talk on wetting phenomena of interfaces focusing on experiments and numerical simulations on dynamic wetting. Prof. Wang from National Taiwan University (NTU) presented microfluidic and coating technology for biomedical applications with a new pattern printing technology. Schabel and Scharfer gave the closing remarks to the TFT Forum 2019 and this 10<sup>th</sup> -anniversary event and announced the European Coating Symposium (ECS) in Heidelberg in September 2019, which will be chaired by the group. Next year, the TFT Forum will again take place in Karlsruhe and in addition to general topics on «Functional Films» and «Battery Coatings» the focus will be on functional 3D printed multilayer structures. ↩

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