

## SPEAKER



### NAME

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### BIOGRAPHY

2006–2009	Chemistry studies at Technical University of Dresden, Bachelor of Science
2009–2011	Chemistry studies at Technical University of Dresden, Master of Science
2011–2015	PhD in Organic Chemistry (Natural Product Synthesis) with Professor Peter Metz at Technical University of Dresden
2011–2014	Scientific assistant at Technical University of Dresden in the field of Organic Chemistry
2014-2017	Project Manager at Papiertechnische Stiftung with research focus on chemical modification of pulp fibres and development of mouldable paper materials
since 2017	Head of Department Composites & Modification at Papiertechnische Stiftung with focus on chemical modification of polysaccharides (particularly cellulose pulp) and natural fibre biocomposite materials

## LECTURE

Martin Zahel and Tiemo Arndt

Future paper properties by chemical and mechanical modification of pulps

Within the last years product development focuses more and more on sustainability in the sense of a circular and bio-based economy. Main tasks are the use of renewable feedstocks, ensuring recyclability, enabling cascade use and providing biodegradability in case of non-closed product cycles. This is most important particularly for short-term use applications such as packaging. Paper has been a sustainable material for this field for over a century. However, the increasing customer demands cause different requirements on the usage and processing properties of future paper materials, especially when competing with other packaging materials such as plastics or metals.

This talk will focus on pathways for enhancing the material immanent properties of cellulosic pulps via chemical and mechanical modification and will show what may be possible with paper-based materials in a sustainable future. Intriguing features that are unknown from today's paper such as thermoplasticity, high barrier or highest strength will be accessible utilizing the right modification strategy. Thereby the arc is stretched from the generation of new structures to suitable processing methods.