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Christoph Wittmann

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## **VALORIZATION OF RENEWABLES INTO BIO-BASED CHEMICALS USING METABOLICALLY ENGINEERED MICROBES**

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Superior microorganisms that produce chemicals, materials, and fuels from renewables are major drivers of the developing bio-based economy. Meanwhile, systems metabolic engineering can breed synthetic strains with novel properties at industrial performance. Of particular importance towards a sustainable green chemistry are next generation raw materials: more than simply sugar. Lignin is one of the most abundant renewable resources on earth and is readily produced as a sidestream during biomass fractioning. So far, these large quantities of lignin have been severely underutilized, thereby wasting this valuable renewable. The lecture will highlight recent technological advances in lignin recovery, breakdown, and conversion which drive sustainable value chains to take advantage of lignin. Microbial cell factories, inspired by nature's miscellaneous set of lignin-degrading microbes, are at the heart of these novel processes. These success stories in which the enzymes and pathways of these microbes were harnessed for biobased production from lignin hold great promise for a sustainable upgrading of this renewable polymer into value-added compounds.