

**Engineered Polysaccharides:
Enzymatic polymerization as novel industrial biotransformation
and selected application examples**

**Christian Lenges
DuPont Nutrition and Biosciences**

Polysaccharides are important biopolymers with a wide range of industrial and consumer product applications. For example, cellulose and starch are broadly utilized as industrial materials across many end use markets. Overall, momentum is building for the selection of inherently sustainable material choices manufactured in more benign processes but at the same time without compromising established product performance. Additional drivers are shaping material and process innovation to enable green-house gas avoidance, and providing circular end of life compatible, potentially biodegradable product solutions.

DuPont Nutrition and Biosciences has developed a family of engineered polysaccharides through the selective polymerization of sucrose to provide materials ranging in molecular weights, polymer architecture and particle morphology. The underlying enzymatic polymerization process offers the opportunity to design unique polysaccharide structures which provide numerous performance advances in many formulated products.

This presentation will focus on this new catalytic bioprocess and the potential material innovation opportunities as well as the highly attractive associated lifecycle associated with this process.