Renewable Materials Conference 2026

IFF Submission

Presenter: TBD

Title:

Designed Enzymatic Biomaterials (DEB™) a versatile technology capable of providing functional performance coupled with advanced renewable carbon

Abstract:

Polysaccharides are a class of biobased polymers that deserve a renewed focus given their large design space and rich functionality combined with intrinsic sustainability. Yet, being mostly extracted from plant-based feedstock, current industrial polysaccharides such as cellulose and starch lack the intrinsic purity and molecular design precision found in synthetic polymers. Alternatively enzymatic polymerization of polysaccharides is one technology that can address some of the current limitations, allowing synthetic polymerization approaches. DEB technology enables polysaccharide development with higher purity and polymer structure precision as well as the synthesis of hard to extract polysaccharides such as alpha-1,3-glucans. Moreover, the bottom-up assembly of insoluble polysaccharide polymers from soluble monomers allows the design of novel and rich colloidal features which, in turn, enable many industrial applications.

Sustainability continues to be a key driver for innovative product differentiation. Corporations around the world are setting specific sustainability metrics on new products. With a renewed emphasis on high performance biobased polymeric materials with the intrinsic design flexibility DEB is offering functional performance to support novel solutions across a range of applications including coatings, flexible packaging, agriculture and fibers.