

Elevating Biomaterials for Packaging

Julie A. Willoughby, PhD, Chief Technology Officer

Caleb Meredith, Chloe Andreasen, Jacob Faherty, Alex Troutman, and Amine Yahi

TerraSafe Materials, Inc.

200 Innovation Blvd

State College, Pennsylvania, USA

julie@terrasafematerials.com

TerraSafe Materials is dedicated to mitigating the detrimental effects of traditional packaging materials by creating biomaterial platforms. By harnessing the natural abundance of polysaccharides, electrolytes, and amino acids, we are creating biodegradable alternatives that do not compromise on performance. Our advanced use of colloid chemistry allows us to engineer composites, films, and coatings with specific barrier and mechanical properties, ensuring that food remains protected while significantly reducing environmental impact.

As we move towards commercialization, our patented technologies promise to revolutionize the food packaging landscape. However, several challenges remain. These include scaling production to meet industry demands, ensuring cost-effectiveness to compete with traditional materials, and gaining regulatory approvals to ensure safety and compliance. Addressing these challenges will require ongoing research, collaboration with industry partners, and strategic investment.

Transitioning from reliance on fossil fuels to embracing a new bioeconomy requires a holistic approach, focusing on circular and regenerative models to replace linear ones. Our aim is to showcase the recent progress in our projects and integrate design-led engineering to drive systemic transformation.