Abstract

As our society is trending toward a circular economy, there is a growing need to develop environmentally sustainable polymers that provide performance and functionality equivalent to or better than today’s petroleum-derived materials. There are many diverse applications for renewably sourced polymers, ranging from fibers to plastics, inks to coatings, construction materials to packaging, cosmetics to pharmaceuticals, and bio-medicals to healthcare. The development of bio-based materials is driven by renewability, low carbon footprint, environmental friendliness and in some cases bio-degradability (or bio-compostability). This presentation will provide an overview of recent advances in bio-based materials and the importance of material properties in the design and development of high-value products. I will share recent examples of successful commercialized product offerings from the bio-based materials platform. I will also highlight our recent attempts to use waste streams as a feedstock to produce high value polymers.
Joe Kurian Bio:

Joe received a Ph.D. in Polymer Science from the University of Akron, working under the guidance of Professor J. P. Kennedy. He worked for several large corporations for 27 years in various technology and leadership roles (DuPont, Gore, RPM & GE) before joining Newlight Technologies. At DuPont, Joe led the Sorona® Polymer Team. Sorona® Polymer, a renewably sourced material, became a major commercial success finding applications in textiles, floor coverings, automotive components and engineering plastics. He is an innovator with over 80 filed US patents and over 50 journal publications, including a book chapter on Sorona®. Joe has received several awards and recognition for his Sorona® polymer and renewably sourced materials work, including the Bolton-Carothers Innovative Science Award, Corporate Sustainability Award and Corporate Marketing Excellence Award. He is an active member of several professional and engineering societies and organized several symposiums in renewably sourced materials. He is a passionate supporter of science activities for students and mentor’s students for various STEM related events. Joe and family reside in Hockessin, Delaware, USA.