

触媒化学融合研究センター・特別講演セミナー

産総研触媒化学融合研究センターでは、様々な分野で活躍している大学、公的研究機関、企業等の方々をお招きして、講演会を開催することで分野の垣根を越えた連携の実現を目指しています。
多くの方々のご参加をお待ちしております。

日時: 2023年12月11日(月) 15:30~17:00

場所: 産総研つくば中央5群 第4会議室(6603室)

講演概要:

Prof. Dr. Brett Helms

(Lawrence Berkeley National Laboratory)



”Polymer Redesign for Recycling and the Circular Economy”

One of the goals of a circular economy is to design-out waste by re-orienting industry around materials that can be reused and recycled. For polymers used in plastics, elastomers, and thermosets, those in use today were never designed to be recycled. As a result, they have accumulated in both terrestrial and aquatic ecosystems throughout the world in such alarming quantities that a legally-binding global plastics treaty is under development, regulating future plastics use. If circularity is to be realized, new polymer chemistries are needed for deconstructing both simple and complex products, such that monomers, additives, fillers, and other materials may be reused without loss in performance or aesthetics. I will describe our efforts to address these challenges using polydiketoenamine resins (PDK), which undergo reversible polymerization using atom- and energy-efficient processes. PDK resins lay the groundwork for how to commodify polymers as highly valuable, renewable resources for a circular economy.