Organocatalyzed Atom Transfer Radical Polymerization

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Synthetic polymers have become indispensable to modern society. The development of living and controlled polymerization methodologies has enabled the synthesis of precise macromolecular architectures with tailored polymer properties for integration in diverse applications. This presentation will discuss the design and synthesis of strongly reducing visible-light organic photoredox catalysts for organocatalyzed atom transfer radical polymerization. Development of catalyst design principles as well as their implications in the polymerization mechanism to synthesize well-defined macromolecules will be presented.