

# **Renewable Highly Bio-based Polybenzoxazine Thermosets**

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Polybenzoxazines possess unique advantages such as low melt viscosity of the precursors, curing without a strong catalyst and nonvolatile release together with near-zero volumetric change during curing. The cured polybenzoxazines are characterized by high glass transition temperatures ( $T_g$ ), low water absorption, high char yield, and excellent thermal and electrical properties. The rising worldwide fossil crisis and current health and environmental issues are the major challenges for the polybenzoxazines applications in terms of supply and costs. Furthermore, petroleum does not easily afford a variety of chemical structures or functionality. To overcome the limitations of petroleum derived building blocks, this study is employed an approach to develop the renewable benzoxazines monomers and polymers inspired by nature that utilizes the variety of building blocks found in renewable plant biomass.