









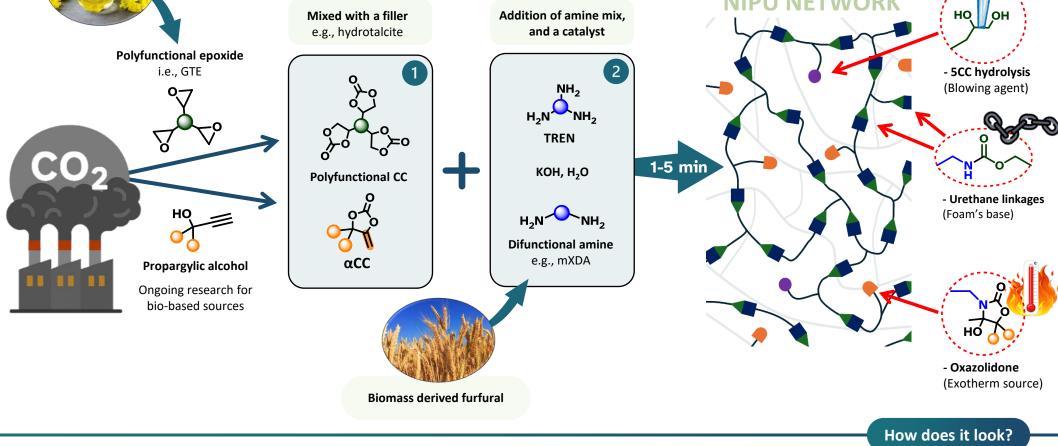


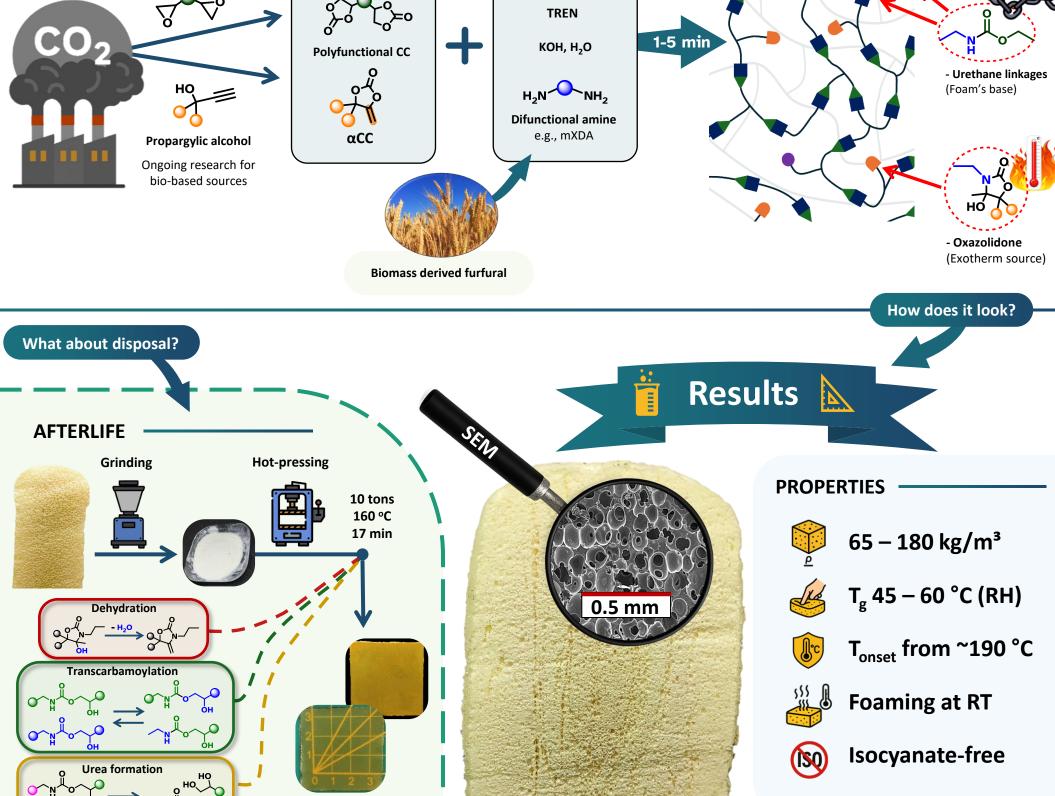
Rapid room-temperature synthesis of non-isocyanate polyurethane foams via exo-vinylene cyclic carbonate-amine chemistry

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WHAT ARE POLYURETHANE FOAMS? Classic pathway **Attractive alternative** αCCs aminolysis PUFs are lightweight, durable materials widely used in insulation, cushioning, and packaging. Their versatility stems from the reaction between polyols and poly(isocyanate)s. Nowadays, growing regulatory and health concerns over toxic isocyanates are driving the search for safer alternatives. Non-isocyanate polyurethane foams (NIPUFs), produced via cyclic carbonate (5CC) aminolysis, offer a promising and more sustainable pathway to achieve a similar product. However, 5CCs show limited reactivity with amines at room temperature (RT). In contrast, activated cyclic carbonates (αCCs) readily react with amines at RT, releasing heat and forming cyclic urethanes (oxazolidone moieties). How to make NIPUFs at RT? Plant oil derived glycerol **Our Solution** NIPU NETWORK Mixed with a filler Addition of amine mix, and a catalyst e.g., hydrotalcite Polyfunctional epoxide i.e., GTE









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