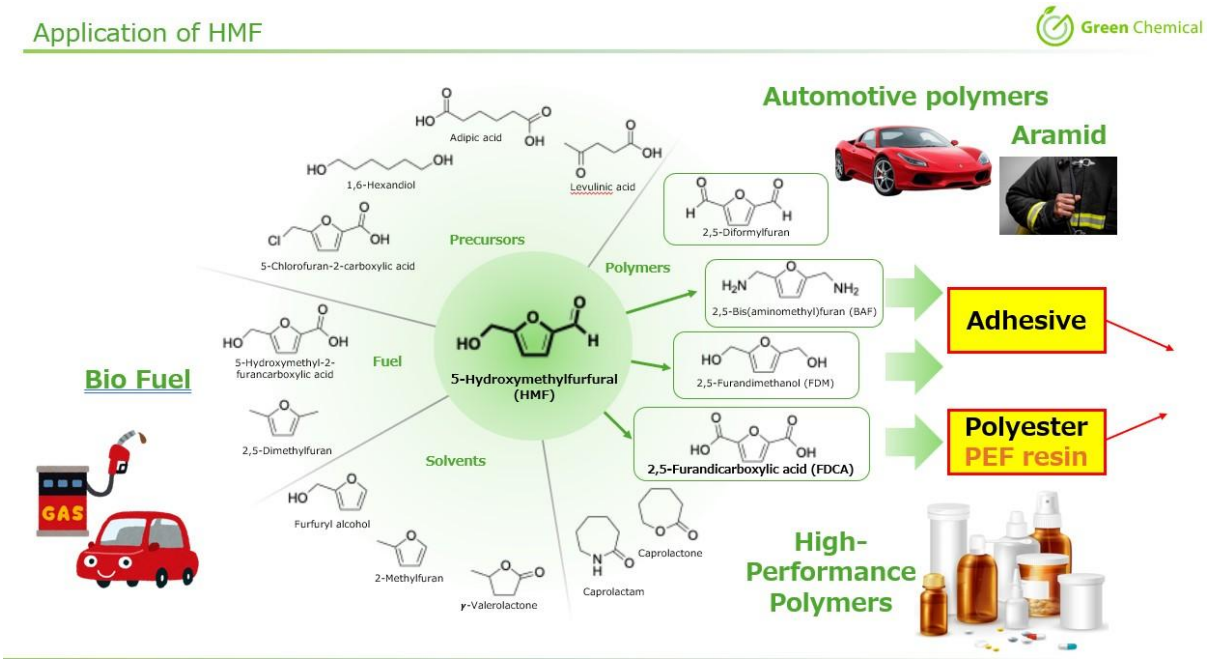
Green Chemical unveils low-cost route to high-purity HMF for bio-based adhesives and tape substrates

Tokyo, Japan — Green Chemical, a venture originating from the Tokyo Institute of Technology (now the Institute of Science Tokyo) and Tohoku University, has announced a technological breakthrough enabling the **low-cost production of high-purity HMF** (hydroxy-methyl-furfural ~99.9%) **from renewable biomass** such as glucose.

The company's proprietary process employs a solid Lewis acid catalyst and operates under milder, more sustainable conditions (in the early 100°C range and at atmospheric pressure). The technology can be retrofitted into standard industrial equipment, reducing barriers to commercial adoption and lowering capital expenditure.

Next-generation building blocks for bio-based adhesives, tape substrates and more

Green Chemical is positioning HMF and its derivatives as next-generation building blocks for **bio-based adhesives, including epoxy, acrylic and urethane formulations**. These materials could serve as renewable alternatives to conventional petrochemical components such as formalin or resorcinol. The company is also advancing opportunities in **bio-based carrier films and tape substrates**, supported by materials such as PEF (polyethylene furanate), a bioplastic positioned as a replacement for PET.



Founded in 2018, **Green Chemical** has received financial backing from the Japanese Ministry of the Environment and the NEDO-GX Project, and has so far raised $2.57 million across a seed and pre-Series A round. The company is now actively seeking licensing partners, with commercial-scale deployment targeted for the 2028–2030 timeframe. More details are available on Green Chemical's official website: https://green-chem.jp/en/home-english/