



Electrovalorisation of Waste Biomass: Sustainable Production of Renewable Plastic with Co-Produced Green Hydrogen

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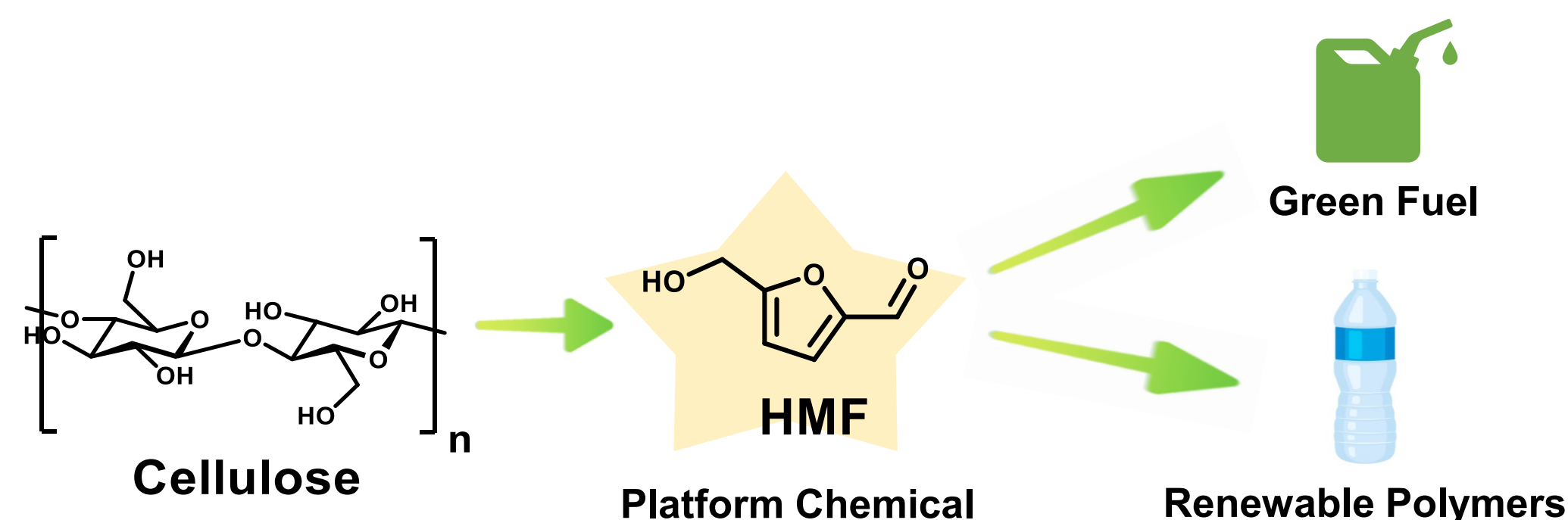
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1. A Replacement Source of Petrochemicals

To date over **9 billion** metric tons (MT) of plastics have been produced to date, less than **30%** of these have been recycled.

About **150 million MT** of biomass is produced every year by photosynthesis, yet only **3-4%** of this is used by humans for food and other uses.

Lignocellulosic waste biomass is abundant and can be dehydrated into **HMF** a platform chemical that can be converted into fuels/polymers.

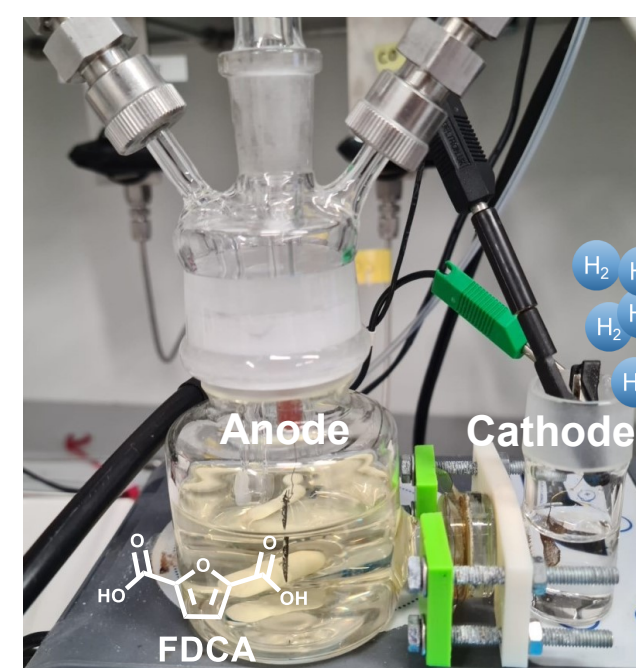


2. A Greener Source of PET

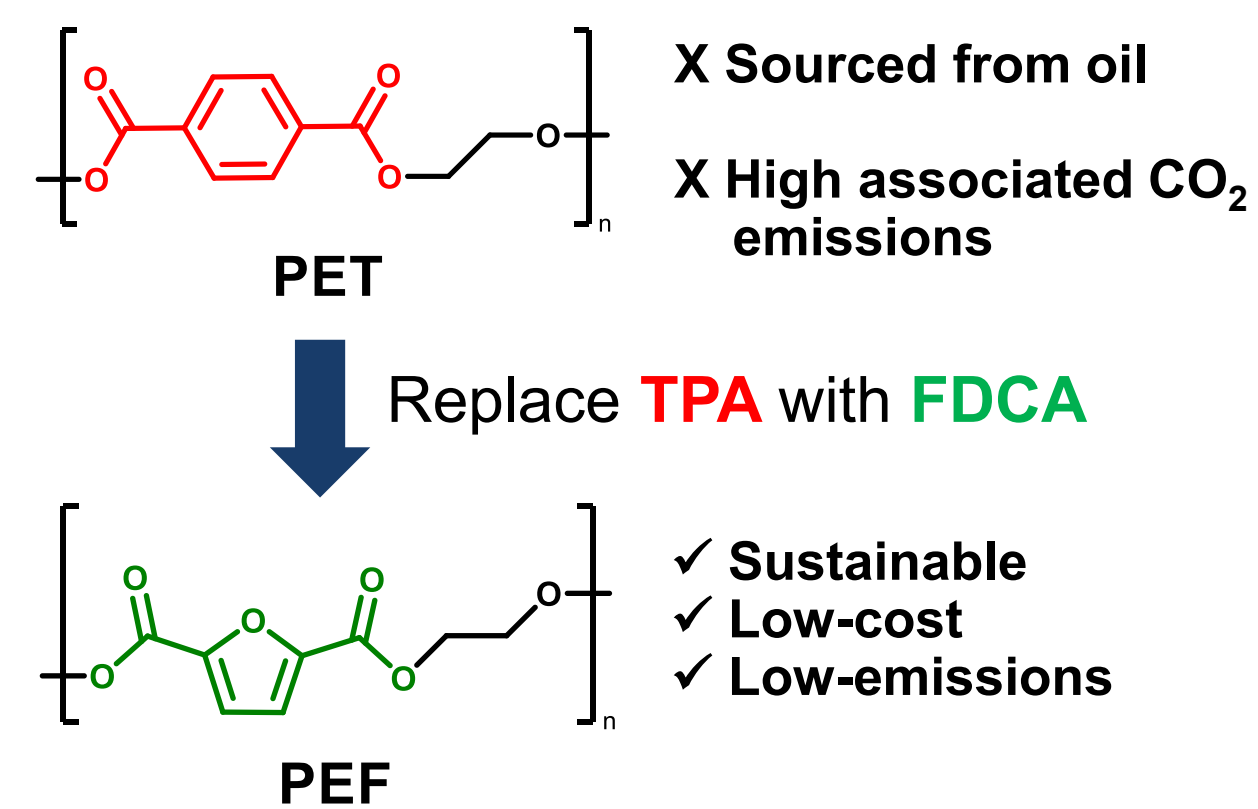
30 million MT of **PET** produced annually. **PEF** is a more attractive alternative which can be sourced **100% from waste biomass**.

FDCA was described as one of the **Top 10 most valuable chemicals** by the U.S Department of Energy.

Our technology produces **FDCA** from **HMF** powered by **green electricity**, whilst simultaneously producing **green hydrogen**.



Cell demonstrating electrosynthesis of FDCA from waste HMF with co-produced green Hydrogen

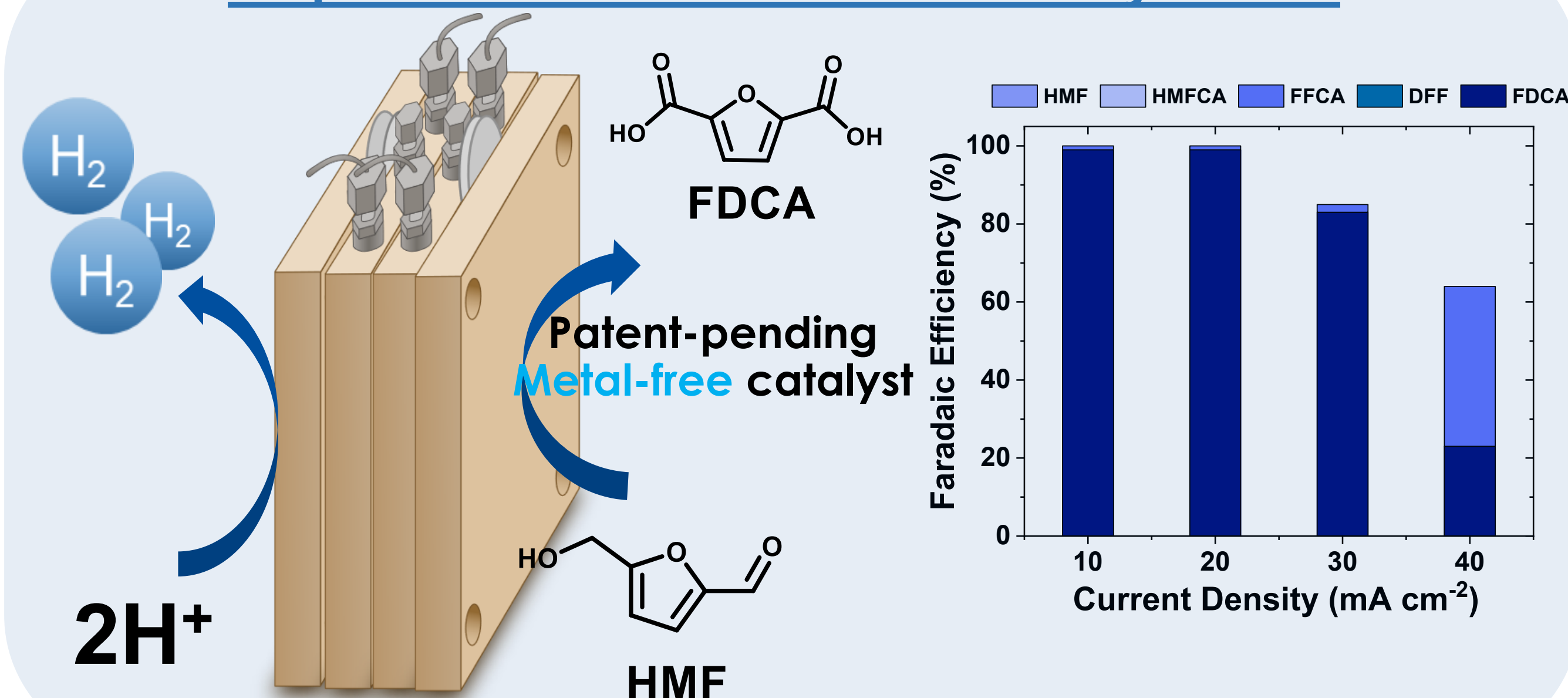


3. Patent-Pending ElectroSynth Technology

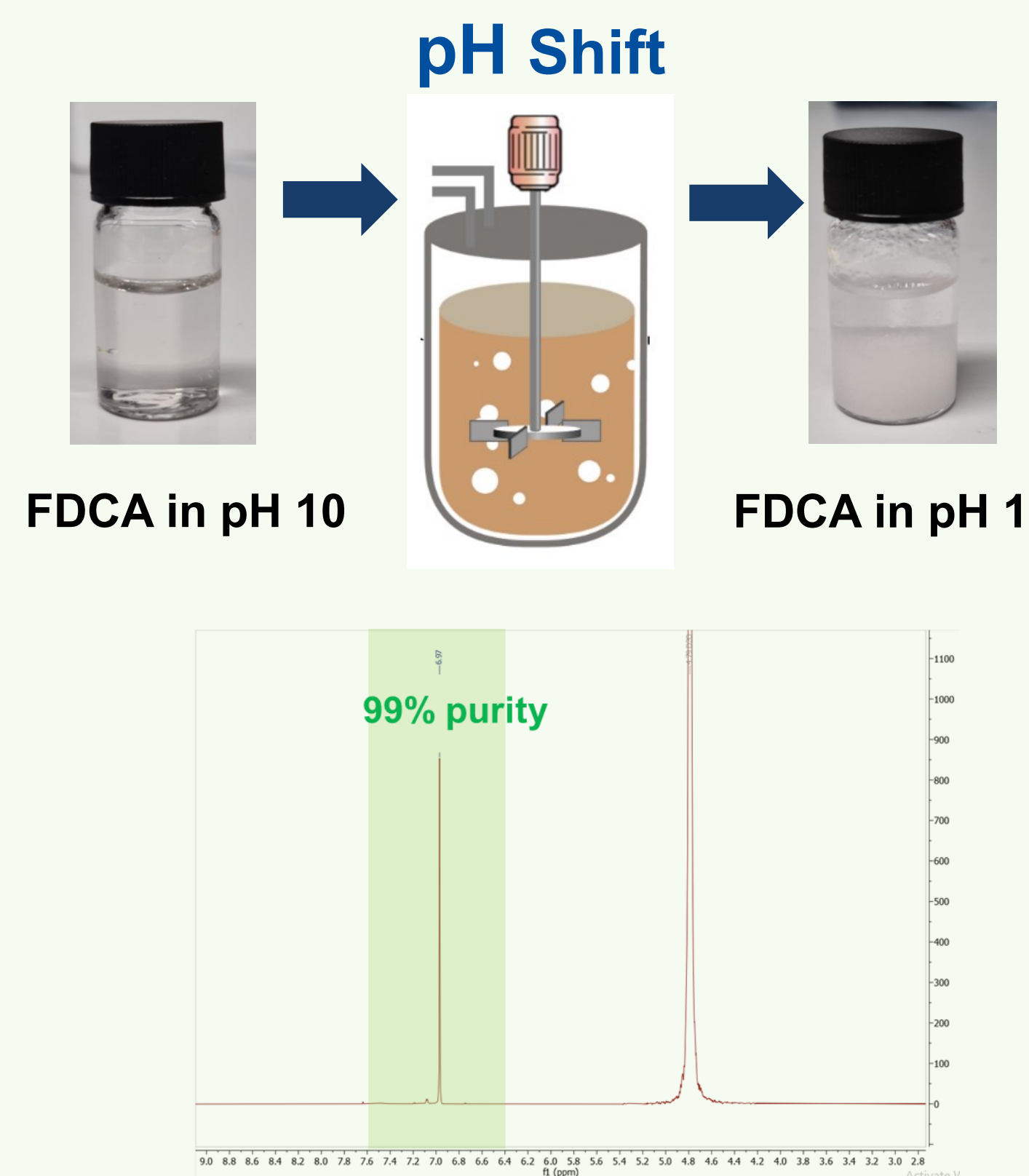
Selective FDCA production has been carried out using patent-pending catalyst, close to 100% Selectivity.

Startup company is currently at **TRL 4**, and we are searching for investments

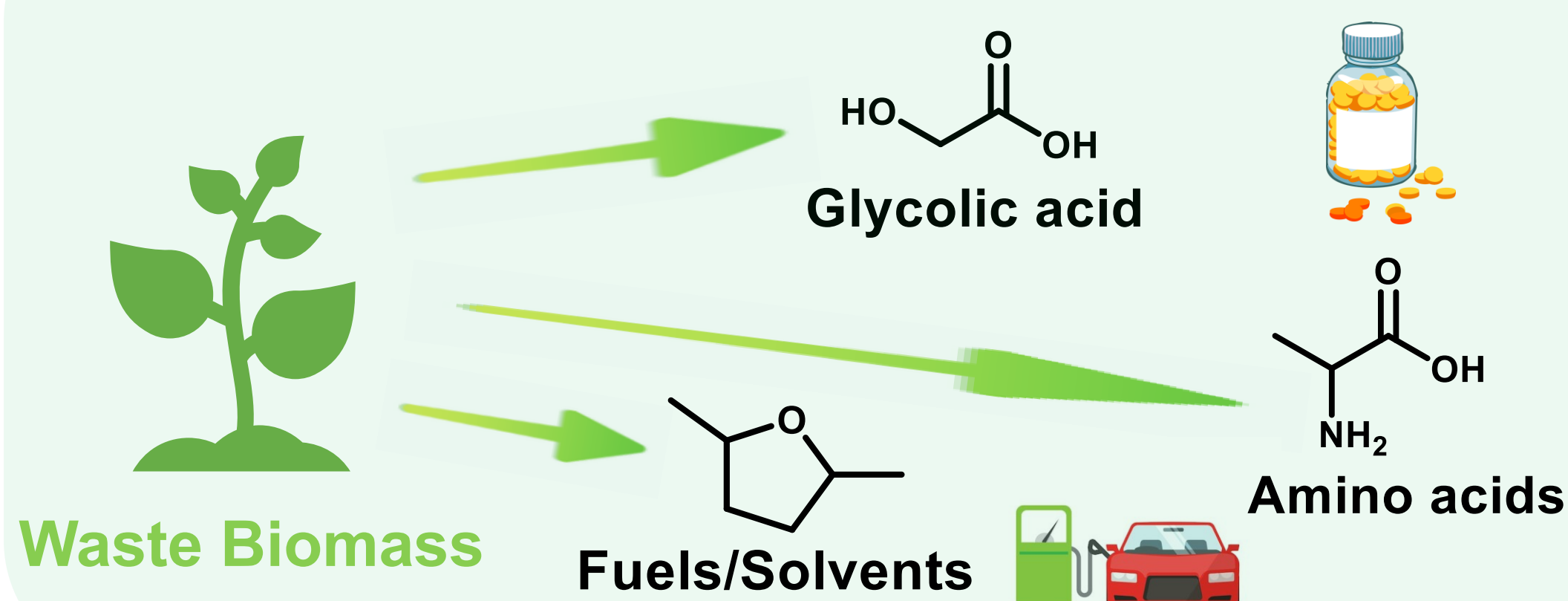
Step 1: Selective Electrochemical Synthesis



Step 2: Simple Product Extraction



Future Products: Electrochemical Synthesis



Spinout Plan



4. Acknowledgements

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