Novel processes for obtaining high-value products based on feedstocks from renewable and recycled materials are very important, as they allow the use of sustainable resources and support a circular economy. The goal is to reduce carbon footprint and also to open new pathways to platform chemicals and drop-in fuels.

High throughput experimentation (HTE) has proven the most efficient tool to accelerate the development of new catalytic processes and to ensure a short time to market for renewable products.

**OUR SOLUTIONS**

- Processing and screening of various feedstocks gained from renewable & recyclable materials
- Supporting process optimization and feedstock evaluation (e.g. co-processing)
- Upscaling from batch to continuous process
- Catalyst synthesis and characterization from powder to commercial shapes
- Offline and online analytics, including method development and separation techniques

**YOUR BENEFITS**

- Short time to market for new products and processes
- Evaluate processability of new feedstocks
- Testing support for industrial operation (e.g. troubleshooting)
- Independent and customized R&D services with excellent track record in catalyst synthesis and testing
SUCCESS STORIES FROM OUR PROJECTS

FROM BIOMASS TO “GREEN” NYLON

In this project, C5/C6 polyols derived from biomass intermediates were converted into high-value 1,6-hexanediol using a new catalytic process; a key monomer for polyamide 6.6 known as nylon. The entire process was successfully developed at hte. It includes:

• Synthesis and screening of 500 catalysts
• 26 test runs with 16-fold HTE unit
• Upscaling of 44 catalyst formulations
• Screening of 30 feed blends in 8-fold bench scale unit

HYDROTREATED VEGETABLE OIL AS DROP-IN FUEL

Feedstock, such as vegetable oil, can be upgraded by catalytic hydrogenation. In this catalytic process, the feedstock is converted into long-chain hydrocarbons, which can be used as drop-in fuels and kerosene.

In this project, a test system with 16 parallel reactors and small amounts of catalyst were successfully applied for testing a commercial hydrotreating process for converting rapeseed oil into drop-in fuel.

Our hte technologies have an excellent track record for processing 1st, 2nd and 3rd generation bio-oils.