



SUPERGEN Bioenergy Hub

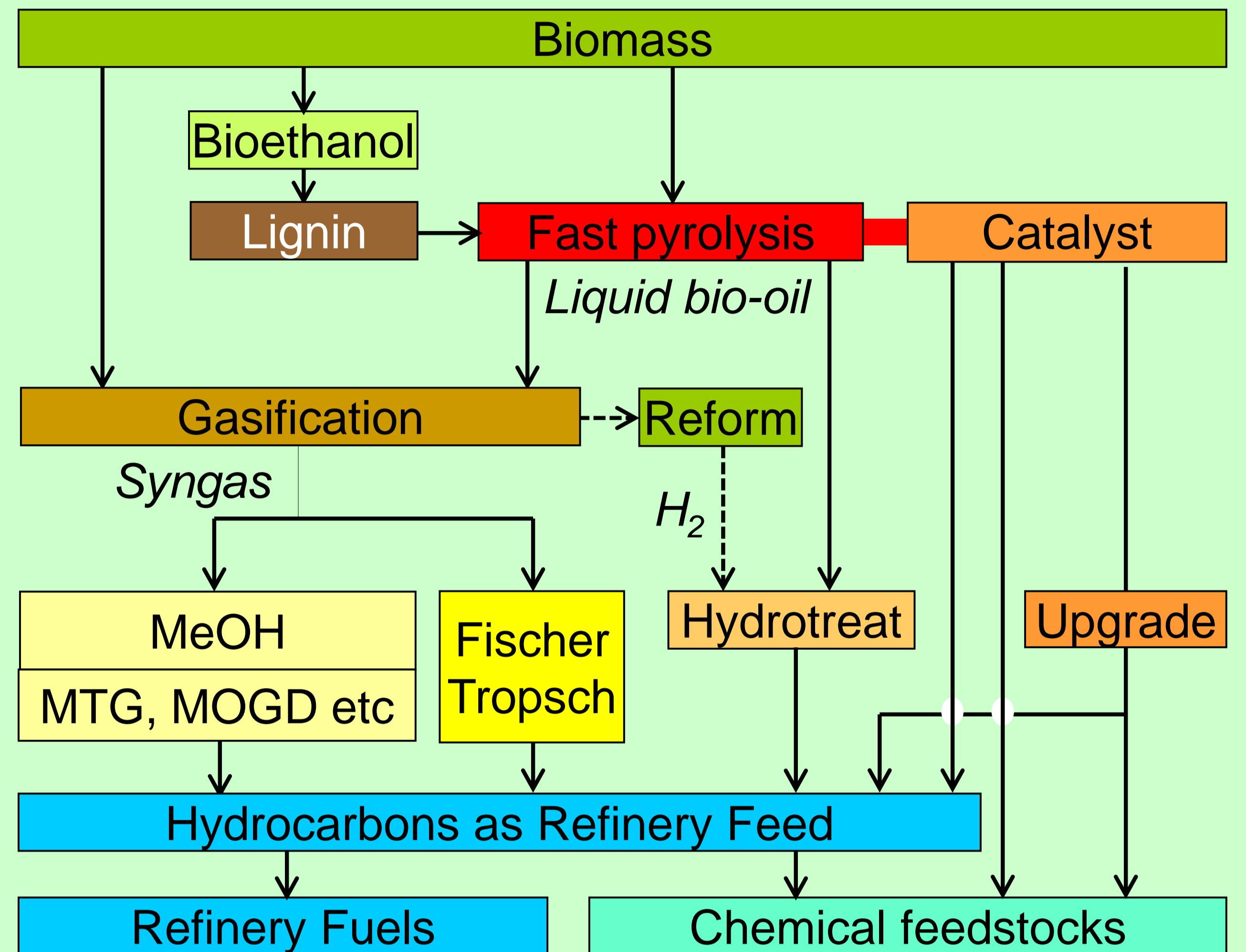
1.10 Whole Systems Analysis of Novel Biofuel Technologies

Objectives

To compare process and techno-economic performance of gasification, pyrolysis and other routes to biofuels.

Background

Biofuels can be derived from biomass either by solid biomass or liquid bio-oil gasification followed by biofuel synthesis; by catalytic fast pyrolysis; and by hydrodeoxygenation of liquid bio-oil. This project will model different approaches to biofuel production.



Method

A techno-economic spreadsheet-based model for biofuel production based on all thermal and upgrading technologies will be constructed by Aston. This will be based on a process synthesis approach that has been developed at Aston for biochemical conversion that links all steps in a process from feedstock reception to production of a biofuel for either feeding to a refinery for completion of upgrading, or for blending. The model will provide flowsheets, mass balances, capital and production costs estimates for gasoline, diesel, aviation fuel, and "petro"chemicals and will be used to provide data to other partners.

A new technical and economic assessment study is being planned by IEA Bioenergy, and this model will be valuable both as a basis for a contribution from the UK and also for additional data and validation from the other members which include USA, Canada, Finland and Sweden.

Partners

Aston University (lead)
University of Bath
University of Manchester



Contact

Professor Tony Bridgwater
Bioenergy Research Group
Aston University
a.v.bridgwater@aston.ac.uk

