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LIGNOCELLULOSICS VALORIZATION: TOWARDS PLATFORM CHEMICALS USING HETEROGENEOUS CATALYSIS

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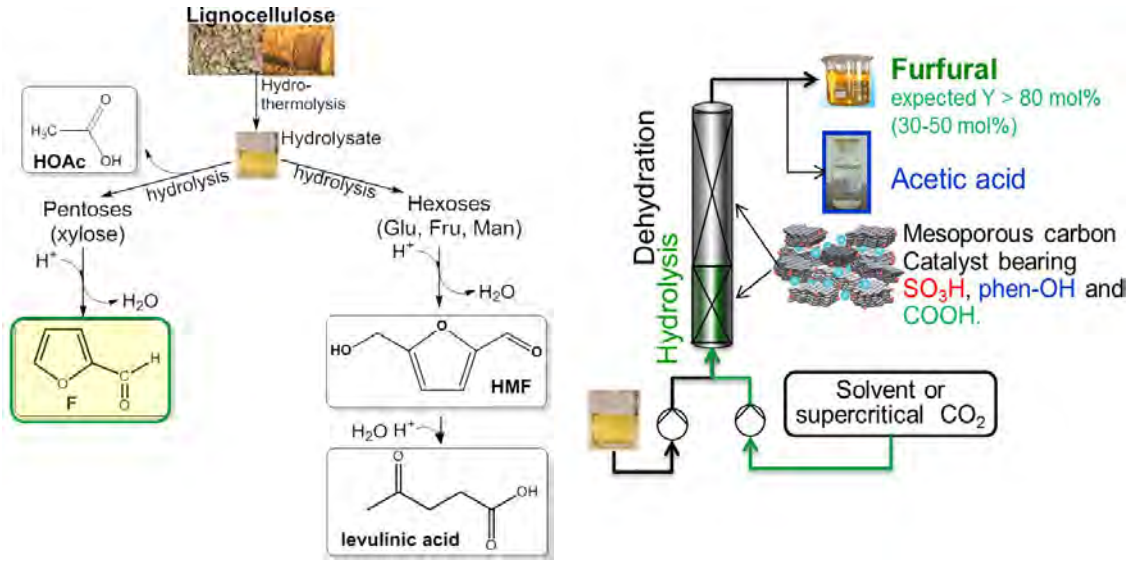
Global competition and increased awareness of the environment, climate change and depleting natural resources force our process industries to identify new solutions and potential growth areas that are based on lower energy consumption and sustainable use of natural resources. The possible strategies for energy efficiency improvement include the gradual change from a fossil-based to a bio-based economy, which means that transportation fuels, materials, and chemicals are progressively produced from sustainable renewable raw materials, lignocellulosics according to the principles of green chemistry.[1,2]

Our main focus, presented in this work, is bridging the gap between three important disciplines such as nanomaterials, energy and environment through the preparation, design and optimisation of nanotechnologies and a variety of novel designer nanomaterials to be employed in energy and environmental challenges including the production of advanced biofuels and fine chemicals from biomass valorization using heterogeneous catalysis for environmental remediation.[3]



General overview of processes and technologies developed in our laboratories

[1] Corma, A. et al. *Chem. Rev.*, 107, **2007**, 2411-2502.
[2] Corma, A. et al. *Energy&Environ. Sci.,* 5, **2012**, 6328–6344.
[3] Huber H. et al., *Energy&Environmental Sci.,* **2011**, 4, 2193–2205.