

Session 5

Biobased Industrial Chemicals

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The production of chemicals from lignocellulosics continues to be an active area of research. Improved economics for lignocellulosic-based chemical production processes can be realized through the integration of these processes into existing bioprocessing facilities that are often described as biorefineries. The focus of some of the most recent work in this area is the topic of session 5. Research described by the speakers in this session illustrates the capturing of additional value from low value co-products and alternative products from several industries. Examples from the talks include the production of fuels such as ethanol and biodiesel from industrial processing co-products; increased value from feed fibers as provided in the talk on the corn processing industry; multiple products and co-products from woody biomass and sugarcane fiber lignins; and syngas from glycerol obtained as a byproduct from vegetable oil processing to biodiesel. While many of the presentations provided an overview of the employment of separation technologies to biomass feedstocks, one presentation directly highlighted the impediments to the production of polyols by chemical catalysis of lignocellulosic feedstocks. Since a similar problem exists in microbial biocatalyst inhibition by lignocellulosic hydrolysates, the development of innovative pretreatment, hydrolysis and separation technologies to overcome microbial inhibition and catalyst poisoning will be essential for progress in this area. Another key similarity between all of the talks was how to function under tight economic boundaries. The innovative methods employed by all of the industries represented show the creativity needed for the sustainable production of products from the renewable biomass area.