

# SESSION 1

## Thermal, Chemical, and Biological Processing

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Historically, this session has dealt primarily with thermal, chemical, and biological processing of biomass to produce fuels and chemicals. There have been presentations on the downstream processing as well. This year's program has been chosen to look at current practices, new processes for production of chemicals, and the future technology that could be reached with genetic engineering.

Pretreatment of biomass is an essential step in the preparation of a fermentable substrate. This year's session includes papers on the traditional dilute-acid process, methods of monitoring inhibitory factors produced in the dilute acid process, and a new water-only process that shows promise for the future. Production of useful chemicals requires efficient, low-energy recovery processes due to the dilute nature of substrates that come from hydrolysis of biomass. This year's session looks at three recovery processes that are state-of-the-art for efficiency and offer economical recovery of valuable products from dilute process streams. Novel genetic engineering has shown it possible to produce standard petrochemicals through fermentation technology with or without the use of some conventional chemical steps. This year's program includes one such approach.

The overall intent of this year's session is to examine the state of reduction to practice in the conversion of biomass into usable intermediates.