

Introduction to Session I

Thermal and Chemical Processing

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The thermal and chemical processes to pretreat or to convert biomass to useful commodities complement the purely biological processes that this conference on biotechnology deals with primarily. The conference would be incomplete without a consideration of these more conventional techniques for converting the complex components of biomass to the simpler molecules that serve as liquid and gaseous fuels and chemical intermediates; and, indeed, the session this year emphasized that purely thermochemical and chemical processes may be crucial to the technological and economic success of bioconversion systems.

The papers in this session address a variety of applications ranging from strictly thermal alternatives to bioprocessing to crucial chemical processing steps that must precede many bioconversion schemes. The papers include two on hybrid systems where products of bioprocessing are used in thermochemical conversions systems, two on conversion of carbohydrates to chemicals by directed thermal means, two on pretreatment for subsequent bioprocessing, and one on the newly-emphasized area of biobased materials for polymer applications.

Most papers focused on lignocellulosics, although two papers on municipal solid waste highlighted the growing importance of extracting useful materials or energy from this secondary, but renewable, resource.