

**Session Title: Biorefinery**

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Multiple aspects of utilizing biomass resources should be carefully examined to facilitate their massive installation into the current production and supply-demand systems. The life cycles of biomass resources have various concerns caused by the changes in raw materials of chemicals and fuels such as global and local environmental impacts, induced regional socioeconomic effects, capacities of infrastructures, and sustainability of sources of biomass, i.e., agriculture and forestry. The necessitated systematic methods of life cycle design are discussed through some case examples on biomass-derived production.