

An integrated strategy for coproducing biofuels and biochemicals from lignocellulosic biomass

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We develop a biorefinery strategy for the coproduction of ethanol and adipic acid, which is used as a precursor for the production of nylon, from lignocellulosic biomass. This strategy integrates biomass fractionation with simultaneous conversion of cellulose and hemicellulose constituents into ethanol and adipic acid, respectively. An experimentally-based process model is developed to evaluate the economic feasibility of the integrated strategy. The coproduction strategy leads to a minimum ethanol selling price of \$2.80 per gallon of gasoline equivalent, which suggests that it is a promising alternative to current biofuels production approaches.