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Subject: Abstract international conference on bio-based materials

Biomass and Waste to Value Products

In the last couple of years, G.I. Dynamics (GID) has been active in the field of valorization of biobased ethanol towards chemical building blocks like ethylene. In the past decennium, 2 commercial plants have been implemented in China and Taiwan in which bio-ethanol is being processed into Polyesters, Glycols, Ethoxylates and Ethanolamines. The projects are sustainable and pricing of products are competitive towards market prices.

Together with USA based company Novomer, GID initiated a project in Turkey, in which biobased Ethylene Oxide would be processed into Polypropiolactone (PPL); a thermoplastic, which by itself can also be used for the production of Glacial Acrylic Acid. Besides Ethylene Oxide, Carbon Monoxide (CO) is an important building block for the production of PP and contributes to roughly 35% in weight.

In our search for technologies to produce biobased CO, GID (together with our partner) acquired the HTW gasification technology from TKIS. Besides the PPL production, G.I. Dynamics plans to utilize the technology to produce syngas from Biomass and waste (Wood, waste wood, MSW, RDF), to be further processed to value products like plastics, intermediates and advanced biofuels. An important first step is the production of advanced bio-methanol.

