

INTEGRATED BIOENGINEERING: GENOMATICA'S APPROACH TO RAPID COMMERCIALIZATION

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Genomatica has developed a complete, commercial-scale bioprocess for production of 1,4-butanediol (BDO) directly from renewable carbohydrates. This process is being operated by Novamont at their MATER-Biotech plant in Bottrighe, Italy; the world's first commercial-scale biobased plant for a major intermediate chemical. The biobased BDO is being utilized within Novamont's 4th generation of MATER-BI, an innovative family of biodegradable and compostable bioplastics.

This presentation will highlight the development of the GENO BDO™ process using the integrated approach inherent to Genomatica's bioengineering platform. This platform enables a 'whole-process' approach linking computation, microorganism design, synthetic biology, process design, techno-economics, and technology transfer. A key differentiator is an emphasis on techno-economic analysis and scale-up from the very start; using this to guide decision making on organism, fermentation, and downstream process design. Combining this integrated approach with real-world commercial expertise enabled highly reliable and predictable scale-up across multiple orders of magnitude, culminating in the successful startup of the MATER-Biotech plant.