

SYNTHESIS OF ALIPHATIC POLYESTERS OF HIGH MOLAR MASS DERIVED FROM ISOSORBIDE

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INTRODUCTION

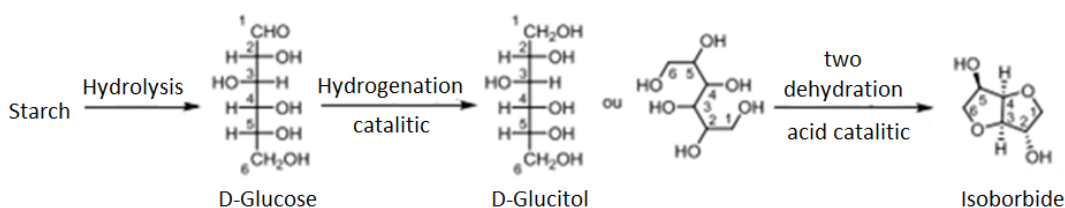
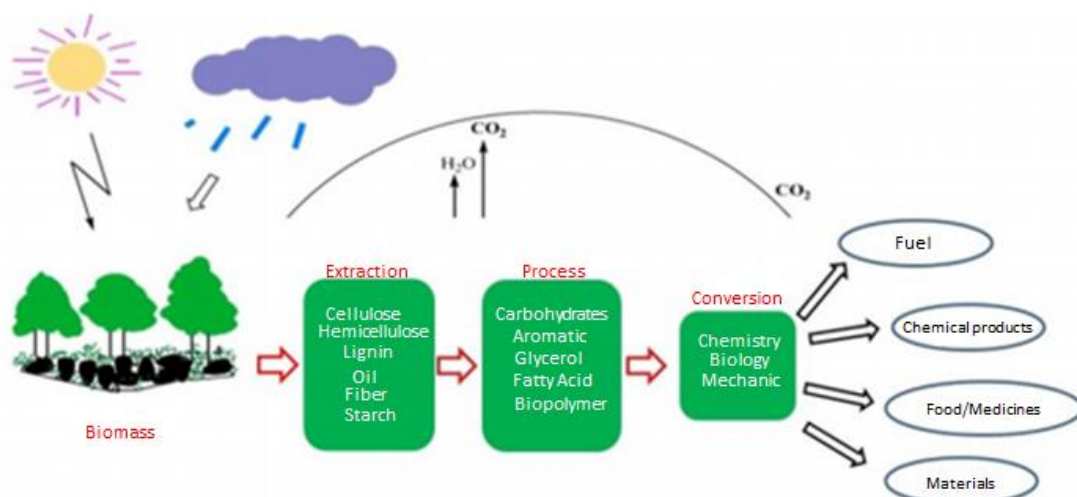
Petroleum is a limited resource and, for energetic and economic reasons, one of the most important issues related to the global chemical industry is the substitution of raw material derived from oil for materials derived from renewable sources. Currently, the use of starch derivatives has been stimulated due to its potential for industrial application and because it is a natural, renewable, versatile, abundant, biodegradable and low cost raw material, it can be used on the production of plastic and ethanol.

Isosorbide is a natural basis compound obtained from corn starch, which is considered to be a safe material because it is chemically and thermally stable and, especially, due to its great potential for the synthesis of various polymers, such as polyesters.

The invention herein concerns an acquisition process of high molar mass polyesters using isosorbide as monomer by bulk polymerization, which have potential in the use as biodegradable polymer derived from renewable sources.

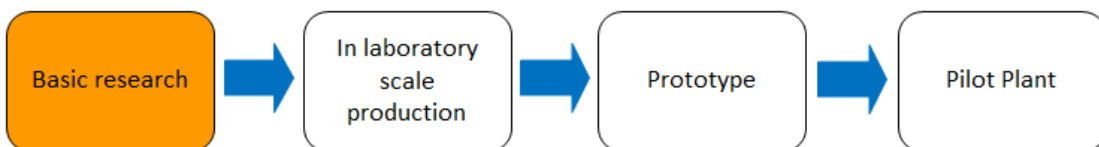
APPLICATION AND TARGET MARKET

The technology serves as a support tool in the area of Materials, Food, and Health and Care (Human and Animals), providing the obtainment of isosorbide-derived molar aliphatic polyesters, a renewable and natural basis source, alternative to petroleum for production of inputs.



Images: 1. Concept of Biorefinery (Adapted)
2. General scheme for the synthesis of isosorbide from starch.

DEVELOPMENT STAGE



Area: Materials; Food; Health and Care 0101/2017 Chemistry Institute of USP

SUPPORT AND FOMENTATION: *process n 2011/21446-6, Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP). "Opinions, hypotheses and conclusions or recommendations expressed in this material are the responsibility of the author (s) and not necessarily reflect the vision of FAPESP".*

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