Public Abstract
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Polyols made from Vegetable Oil and their Applications
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The soybean oil production in USA is 19 billion pounds for the current year of which approximately 15.5 billion pounds is used for edible applications and of the remaining nearly 0.3 billion pounds is used in industrial applications and 0.6 billion pounds is exported. The carry over is about 2 billion pounds/year. In view of the large volume of soybean oil (SBO) production in the US and production capacity increases that exceed the rate of growth of the edible oil application, it was essential to develop alternate uses for soybean oil. This benefits the farmers through securing good demands for soybeans and thereby improve the profitability of soybean farming.

In lieu of the above context research has been carried out in developing polyols a primary component utilized in the making of urethanes through modifying the soybean oil

In the course of the research, soybean oil was modified to form several novel polyols. These polyols have reasonable properties in terms of the hydroxyl content and are produced through inexpensive means. The applications of the above made polyols have been studied in part in the making of foams, ion exchange materials and resins/composites etc.,

The market potential for bio-based polyol in USA is 700–900 million pounds/year, and the global market potential for bio-based polyols is approximately 2.1-2.7 million pounds/year. The market potential for bio-based polyols can be realized either in part or completely through furthering the current findings. Utilizing the soybean oil in the making of polyols could generate additional revenues of the order of $15-20 billion a year and reduce the environmental impact associated with greenhouse gas emissions and issues of solid waste management associated with petroleum based products.