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Battelle Number(s):

11851, 13451

Patent(s) Issued

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Available Technologies

Biorenewable Process to Acrylic Acid

SUMMARY

Acrylic acid is commonly used in the production of consumer products. Highly notable is its use in producing super absorbent polymers, the component of disposable diapers that attracts and retains moisture away from the body. Other uses for acrylic acid and its esters include detergents, paints, coatings, adhesives, and a variety of plastic materials.

Acrylic acid is currently made from petroleum via oxidation of propylene. However, propylene shortages and significant increases in the cost of petroleum products have made way for biorenewable sources to become more cost-competitive alternatives for production of chemicals such as this. Although a few methods are possible, the transformation of glucose via lactic acid—or its methyl ester derivative—to acrylic acid represents an immediately viable option as lactic acid is already commercially available.

ADVANTAGES

- * Biorenewable source material
- * Cost-competitive with petrochemical route to acrylic acid
- * Continuous process capability

RELATED LINKS

- » PNNL Chemical and Biological Process Development Group

<http://chembioprocess.pnl.gov/>



Patents & Intellectual Property

- » Patent #: 6,545,175
- » Patent #: 6,992,209
- » Patent #: 7,687,661

Technology Portfolio(s)

- » Renewables

Potential Industry Applications

- » Chemicals
- » Consumer Products

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