

Recycling and Reuse Technology Transfer Center

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Vacuum pyrolysis of automotive tires as a source of useful chemical feedstocks

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66. Vacuum pyrolysis of automotive tires as a source of useful chemical feedstocks

K.P. MANEREDI & M. WEBER

Dept of Chemistry, Univ of Northern Iowa, Cedar Falls, IA 50614

It should be quite obvious to everyone that there are a lot of used tires in the world. Using these tires as sources of fuels and construction materials are examples of ways to reuse this "resource." These uses must meet both the environmental and economic criteria to be a viable utilization option. We (and others) have been experimenting with the vacuum pyrolysis of tires to explore the possibility of producing useful chemical feedstocks for industry. Up to this point we have been able to isolate the monoterpene limonene in a 2% yield. This paper will discuss our methodologies and current research ongoing to improve the yields of terpenoid compounds.

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67. Improving soybean oil performance as an industrial lubricant

M. ROVER, K.P. MANFREDI, & L. HONARY

Dept of Chemistry, Univ of Northern Iowa, Cedar Falls, IA 50614; and UNI Ag-Based Industrial Lubricants (ABIL) Research Program, 400 Technology Place, Waverly, IA 50677

There are currently a number of ag-based industrial lubricants on the market. A major application is the use of ag based oils in various hydraulic systems. The major ag based oil is rapeseed (or its Canadian version canola), used in conjunction with various proprietary additive packages. Ongoing studies done by the UNI-ABIL Research Program and the UNI chemistry department have been involved in improving the lubricant characteristics and oxidative stability of soybean oil in order for it to be competitive with rapeseed oil. This presentation will discuss methods of evaluating and improving soybean oil's performance.

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