

NEWS

From GEORGIA TECH'S ENGINEERING EXPERIMENT STATION

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TECH TO STORE SOLAR

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ENERGY IN SYNGAS

For Immediate Release

ATLANTA, GA....It can't be kept in an oil drum and won't flow out of a pump at the turn of a switch. That, in essence, is the major problem confronting solar researchers: how to store energy which can be tapped from the sun.

Simple chemical compounds can hold tremendous amounts of solar energy for indefinite periods of time. Using this principle, Georgia Tech researchers are designing a solar reactor which would use heat from the sun to link carbon and water into combustible chemical compounds. The result of this union is syngas, a mixture of carbon monoxide and hydrogen which might replace petroleum in a number of important applications.

"We're taking our cue from nature," explained Tech research engineer Steve H. Bomar Jr. "Trees use the sun's rays to produce chemical compounds and those compounds appear to us as wood. The same process occurs in the formation of oil and coal."

Syngas might be used directly as a fuel for heating or cooking. Manufacturers also could convert it into synthetic gasoline, alcohol or natural gas for even broader applications.

Other industrial processes could employ syngas. The hydrogen compound in the fuel would be valuable in the production of farm fertilizers. With minor chemical changes, syngas also could be changed into methyl alcohol, one of the principal raw materials in plastics. At present, two-thirds of America's methyl

(more)

alcohol is made from oil.

How would Tech manufacture syngas? One promising possibility is to mix steam and coal in a cylindrical reactor, then expose the contents to intense sunlight beamed from a field of solar mirrors.

"It would require a temperature of 1800 degrees F. for the reaction to proceed," said Bomar.

Tech soon will submit a proposal to the Department of Energy to build such a reactor at the school. Bomar thinks the chances for the project's approval are good.

This research is being done in the Energy Research Laboratory of Tech's Engineering Experiment Station. The station conducts practical research in a variety of fields, many of them energy-related.

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