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***NETL* REPORTS:**

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The National Energy Technology Laboratory (NETL) is pleased to announce that NETL researchers David Alman, Daniel Davis, and Rick Wilson received U.S. Patent 7,900,811 for their Method for Producing Components with Internal Architectures, Such as Micro-Channel Reactors, via Diffusion Bonding Sheets. Microchannel technology is an emerging field of advanced chemical processing with applications in many industrial processes, including chemical synthesis, hydrogen production to power fuel cells, and production of liquid biofuels from organic materials such as municipal waste.

Microchannel reactors are composed of multiple stacked plates, containing parallel arrangements of microchannels with diameters in the range of 100–500 μm . When incorporated into microreactor designs, the reactor is better able to dissipate heat allowing for the conversion process to occur significantly faster. Compared to conventional reactors, the design allows for efficient and precise temperature control, resulting in higher conversion efficiency. These compact, small-scale reactors can be located closer to the organic waste source, reducing the amount of energy needed to transport the waste to the reactor. Use of this patented technology will increase the useable surface area within the stacked plates allowing for even higher conversion efficiency and performance.

NETL is seeking collaborative research and licensing partners to further develop this technology. Additional information regarding this micro-channel process can be obtained from NETL's Technology Transfer Office (www.netl.doe.gov/tech-transfer).

Dr. Alman is the Director of the Materials Performance Division at NETL's Albany, Ore. site. Co-inventors Mr. Davis Engineering Technician and Dr. Wilson (retired) Materials Engineer are with the Materials Performance Division.

NETL is one of the U.S. Department of Energy's national laboratories. NETL – "the ENERGY lab" – focuses on America's economic prosperity, which requires secure, reliable energy supplies at sustainable prices. Three overarching issues characterize the energy situation in the United States. They are energy affordability, supply security, and environmental quality. The Department of Energy's only government-owned, government-operated national lab, NETL is a research and technology center where these energy challenges converge and energy solutions emerge. NETL implements a broad spectrum of energy and environmental research and development programs through its own research staff and through funded research at other labs, universities, and industry that will return benefits for generations to come.