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# Press Release

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## **Wilson TurboPower's David Gordon Wilson Presents Seminal Scientific Paper at International Turbine Congress**

### **Peer-Reviewed Paper Outlines the Theory and Design of Wilson TurboPower's New Revolutionary Heat Exchanger**

WOBURN, MA – May 15, 2006 – Wilson TurboPower (WTP) announced today that its technology inventor and founder Dr. David Gordon Wilson presented a seminal scientific paper this week in Barcelona, Spain, at the 51st Annual ASME Turbo Expo. The paper was cowritten by Jon Ballou, WTP's Senior Design Engineer.

The Expo is the flagship event of the International Gas Turbine Institute, which organizes the world's largest technical meetings and exhibitions exclusively for the exchange of gas turbine technology. The event is organized under the auspices of the American Society of Mechanical Engineers (ASME).

The paper is called "Design and Performance of a High-Temperature Regenerator Having Very High Effectiveness, Low Leakage and Negligible Seal Wear." It is available for download at [www.WilsonTurboPower.com/regenerator](http://www.WilsonTurboPower.com/regenerator). It has been designated the ASME paper number GT 2006-90095.

WTP announced earlier this year that it had achieved a breakthrough in industrial heat exchangers that the industry has been trying to accomplish since 1940. This paper describes both the theory and the design of the device, called a "regenerator." Using MIT-patented technology, licensed exclusively to WTP, it demonstrated operating temperatures above the ranges at which metal heat exchangers typically perform, in excess of 1650°F (900°C). With further development, it is expected to operate at even higher temperatures.

The ceramic rotary regenerator is also very compact. It transfers heat from one gas to another at exceptionally high efficiencies, of "effectiveness," in excess of 98%. To achieve this same level of efficiency, metal heat exchangers typically must be substantially larger.

The ceramic core will enable a variety of processes to operate at higher efficiencies using a much smaller heat-exchanger, thereby generating additional energy and cost savings. Applications include fuel cells, metal refining, biomass drying, power generation, and food and pharmaceutical processing. The regenerator can also be used in cold applications such as air-cycle cooling and refrigeration.

Dr. Wilson is WTP's president and chief scientist and is considered an international authority on both heat exchanger design and small turbine design. He is professor emeritus in mechanical engineering, Massachusetts Institute of Technology, and has written three technical books and 12 papers in the heat exchanger and turbine fields. He invented WTP's technology while at MIT. He has held various positions in industry and has been recognized with numerous awards and honors.

Jon Ballou has had more than 20 years experience in the semiconductor industry working in R&D, continuing engineering, production, and product development. Mr. Ballou has split his career working with large companies to small R&D houses that quickly bring new ideas to market.

### **Wilson TurboPower**

Based on research at MIT, Wilson TurboPower is developing two super-efficiency products. The first is its high-temperature, super-efficient ceramic heat exchanger. The second is its super-efficient ceramic microturbine for distributed power generation and military and transportation propulsion systems. This engine optimizes the benefits of the ceramic heat exchanger and has the potential to revolutionize the energy industry by offering least cost and lowest emissions electricity by achieving 50% electrical efficiency.