



**Freedom Motors**

## **Comments on The Rotapower® Rotary Engine / Freedom Motors / Paul Moller**

**NASA Scientific and Technical Information (STI)** – “An innovation from Moller International of Davis, California will make engines cleaner and more efficient. Through Small Business Innovation Research (SBIR) funding from NASA’s Glenn Research Center, the company created a new coating for rotary engines used for industrial application, watercraft, and other performance-demanding machines. These coatings significantly improve the fuel consumption of a vehicle while reducing emissions. The new coatings are offered in the new Rotapower® engine, which is produced and distributed by [Moller’s exclusive licensee], Freedom Motors. It is this innovative coating that allows the Rotapower engine to function smoother than other models, reducing wear and protecting the engine. Incorporating NASA technology into the Rotapower engine gives it the ability to run cleanly and efficiently on a variety of fuels.”

**New York City Village Voice** website ([www.villagevoice.com](http://www.villagevoice.com)) - Dr. Dennis Bushnell, Chief Scientist at NASA’s Langley Research Center, Virginia stated that “Paul Moller is one of the finest engineers in the country.”

**Dr. Andrew Burke, Institute of Transportation Studies, University of California, Davis –**

**On the use of a rotary engine in hybrid electric vehicles:**

- “Small size of the rotary engine makes packaging much less difficult than with a reciprocating engine”
- “The cost of the rotary engine in volume production should be less than other engine types”
- “Two-cycle engine size and cost, with 4-cycle engine efficiency and low emissions”
- “Rotary engines are smooth and quiet compared to other engine types”

**On the Rotapower rotary engine technology:**

- “Paul Moller and Moller [International] have been leaders in the development of the modern rotary engine since 1985”
- “The Moller [Rotapower® engines] are superior to the Mazda engines in several respects: rotor cooling, lubrication, [reduced] engine friction, and rotor surface coating”
- “Emission tests of Moller Rotapower® engines have shown the capability to meet California ULEV standards in vehicles without exhaust after-treatment”
- “Some advanced features of the rotary engine patented by Moller International have the potential to increase efficiency of the engine to over 40%” (conventional piston  $\approx$  30%)

Dr. Burke is considered the resident expert on hybrid cars at ITS-UCD.

**Freedom Motors website** ([www.freedom-motors.com](http://www.freedom-motors.com)) -- Freedom Motors announced that it has successfully demonstrated exceptionally low emission levels of its rotary engine to members of the California Air Resources Board (CARB) and Bluewater Network... During the test observed by officials of both organizations attending, emissions levels of the engine under test and operated at power and RPM levels prescribed by the US Environmental Protection Agency (EPA), were significantly below the Federal and California State’s projected levels beyond the year 2008.

**Dr. John Zuk, Chief, Advanced Plans and Programs, NASA Ames** – Dr. Zuk states “Moller is different. He’s got academic credentials. He’s thorough.”

**RotaryNews.com** – Dave McMahan, CEO of Madami International has a background in marketing and manufacturing motorcycle industry products and plans to use the Rotapower engine in a new adult version off-road vehicle that is currently under development (referred to as the X-Model). Mr. McMahan stated, “Combining high horsepower to weight and clean emissions of the Rotapower engine with the safety features of the X-Model, we will have a vehicle that the ATV industry and consumers have been demanding for many years: A faster, safer, and environmentally friendlier ATV built for many years of low-cost operation and pure FUN!”

**Fortune Small Business (FSB) Magazine** – Described Paul Moller as: “...that rare entrepreneur who can pinpoint the genesis of his idea.”

**Sacramento Business Journal** – “Freedom Motors has received letters of intent and conditional orders for more than 900,000 of its Rotapower rotary engines, a possible \$1 billion-plus deal.”