

## **PAICE HYPERDRIVE POWERTRAIN CAN BOOST FUEL ECONOMY AND IMPROVE PERFORMANCE OF CARS AND TRUCKS**

*The unique Hyperdrive™ automotive powertrain can substantially lower fuel consumption and increase performance for European light commercial vehicles. Hyperdrive can be produced at competitive costs due to the commercial availability of IGBTs (insulated gate bipolar transistors) in 1998, making high-voltage power semiconductors economically feasible.*

([PRWEB](#)) February 23, 2002 -- BRAUNSCHWEIG, Germany -- 21 February 2002 -- The unique Hyperdrive™ automotive powertrain can substantially lower fuel consumption and increase performance for European light commercial vehicles, according to data presented at a technical conference here today. Hyperdrive can be produced at competitive costs due to the commercial availability of IGBTs (insulated gate bipolar transistors) in 1998, making high-voltage power semiconductors economically feasible, said Dr. Alex Severinsky, inventor of the system and chief executive officer of the PaiceSM Corporation. He described the system in a technical paper at the University of Braunschweig symposium "Hybrid Vehicles and Energy Management."

Hyperdrive™'s method of engine control and use of higher voltages makes it unique among gasoline-electric hybrid systems, because:

• Its control technology allows the internal combustion engine to operate at near maximum thermodynamic efficiencies, in either diesel or gasoline applications.

• Its higher voltage increases efficiency and also lowers cost and weight of the electrical subsystem.

A key element that allows Hyperdrive to deliver significant advantages in both performance and cost is the control algorithm developed and patented by Paice Corporation, he explained.

Superiority of Hyperdrive™'s high voltage technology is demonstrated by research and analysis performed by Paice and verified by Roush Technologies, a leading independent testing organization, also in Livonia, Michigan, according to Dr. Severinsky.

Paice analyses show that a 600-volt system provides significantly greater fuel economy improvements and can be produced at lower costs than a 300-volt system. Either system improves acceleration by about 30 percent and meets all gradeability requirements.

To demonstrate how Hyperdrive powertrains can significantly reduce fuel consumption and improve performance of light trucks, Paice designed 600-volt Hyperdrive systems with 2.5-liter gasoline and diesel engines for a popular European commercial vehicle of 2,500 kg gross weight. Performance of each was modeled on European test protocols with calibrated engineering software.

Fuel consumption of the diesel engine was 27 percent lower than the comparison vehicle (5.6 liters per 100 kilometers, down from 7.7) and consumption of the gasoline engine was reduced by 20 percent (7.1, down from 8.9).

In both gasoline and diesel versions, acceleration from 0-100 and 65-100 kilometers per hour was significantly faster than the comparison vehicle.

Carbon dioxide emissions were substantially lower in both versions and slightly lower in the diesel version.

Dr. Severinsky also noted that the Hyperdrive system can be modified for four-wheel-drive with almost no weight penalty. Such a vehicle can be made more controllable under variable road and load conditions and have lower fuel consumption, especially in stop-and-go city driving.



“We believe Hyperdrive is the only hybrid drive system available today that can be commercially produced in large volume and be successful in the marketplace,” he said. “That’s because it can both deliver high fuel efficiency and also meet the needs and desires of consumers for performance and cost.”

“Unlike the hybrids currently on the market, the Hyperdrive powertrain is well suited for the large cars, SUVs, minivans, and light trucks that many consumers want and need. It will work in any climate, climb steep hills, haul big loads, and operate in all conditions as well or better than a regular car or light truck.” Hyperdrive’s unique application of high-power semiconductors and high-voltage power to control the internal combustion engine for almost maximum fuel economy was developed by Dr. Severinsky, who is a globally-recognized power electronics systems engineer and expert on lead-acid battery applications. The Paice Corporation’s management staff and board of directors include engineers with more than 200 total years of experience in the global automobile industry.

Co-authors of the technical paper are:

• Ted Louckes, chief operating officer and former chief engineer of General Motors’ Oldsmobile division. He is an inventor and expert in engines, transmissions and body and chassis systems.

• David Polletta, vice president of engineering, has 30 years’ experience in powertrain development and engineering management at Ford and other companies, including involvement in electric and hybrid vehicle projects.

• Robert Templin, a Paice board member, has 42 years of experience with General Motors, including chief engineer of the Cadillac Motor Division and director of GM Research Laboratories.

• Fred Frederiksen is a Paice board member and professional engineering consultant with over 20 years experience in power converters and computer controls.

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Paice Corporation has created, patented, tested, and modeled the Hyperdrive system, a unique diesel/gasoline-electric hybrid powertrain system for cars and light trucks. The company has offices in Silver Spring, MD and an engineering center in Livonia, MI. Additional information is available at [www.paice.com](http://www.paice.com).

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