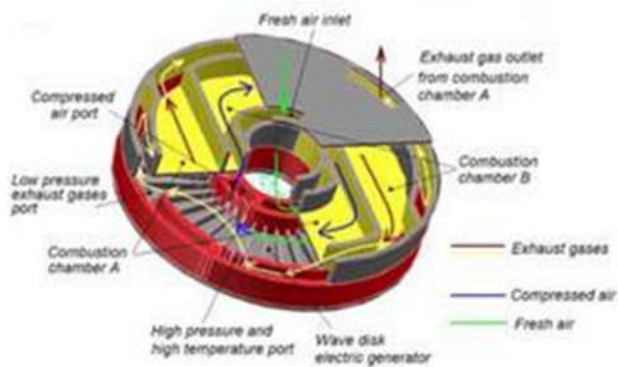


# New engine sends shock waves through auto industry

Prototype could potentially decrease auto emissions up to 90 percent

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Discovery News  
An illustration of the Wave Disk Generator.

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[DiscoveryNews](#)

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Despite shifting into higher gear within the consumer's green conscience, hybrid vehicles are still tethered to the gas pump via a fuel-thirsty 100-year-old invention: the internal combustion engine.

However, researchers at [Michigan State University](#) have built a prototype gasoline engine that requires no transmission, crankshaft, pistons, valves, fuel compression, cooling systems or fluids. Their so-called Wave Disk Generator could greatly improve the efficiency of gas-electric hybrid automobiles and potentially decrease auto emissions up to 90 percent when compared with conventional combustion engines.

The engine has a rotor that's equipped with wave-like channels that trap and mix oxygen and fuel as the rotor spins. These central inlets are blocked off, building pressure within the chamber, causing a shock wave that ignites the compressed air and fuel to transmit energy.

The Wave Disk Generator uses 60 percent of its fuel for propulsion; standard car engines use just 15 percent. As a result, the generator is 3.5 times more fuel efficient than typical combustion engines.

Researchers estimate the new model could shave almost 1,000 pounds off a car's weight currently taken up by conventional engine systems.

Last week, the prototype was presented to the energy division of the [Advanced Research Projects Agency](#), which is backing the [Michigan State University Engine Research Laboratory](#) with \$2.5 million in funding.

Michigan State's team of engineers hope to have a car-sized 25-kilowatt version of the prototype ready by the end of the year.

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