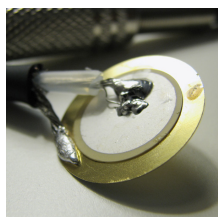


11 December 2008

By: Tudor Vieru, Science Editor



A small microphone, made of piezoelectric materials
Flickr / strbn

[Piezoelectric Crystals Turn Roads into Power Plants](#)

The system will be tested in Israel starting January

A new design, devised by Haim Abramovich, a developer at the Technion-Israel Institute of Technology in Haifa, Israel, may hold the key to harnessing the power of moving vehicles to create electricity, he says. Piezoelectric crystals could be used to absorb heavy traffic and convert a 1 kilometer stretch of highway into a 400 kilowatt power plant, much like Japan's railway [project](#). Innowattech, Abramovich's Haifa-based spin-off company, already announced its intentions of testing the new system as early as January 2009, on a short stretch of highway, about 100 meters long, in Northern Israel. The researcher says that, if successful, the new concept could be implemented in many highways and freeways, through basic maintenance work, without the need for further digs in the pavement. Piezoelectric materials, crystals and ceramics, have the ability to generate a small electric potential when they are subjected to mechanical stress, which makes them suitable for a variety of applications, from harnessing sounds to producing electricity. Piezoelectric concepts include the use of these small devices to capture sound waves from cell phones and convert them into current to feed the battery. This would basically create a [self-powering](#) device that would never need refueling. Critics to the Israeli system say that inserting this type of materials in the surface of the road would basically increase the traction force cars would have to exert on the road, as the surface of the street would resemble that of a mud-covered area. This would mean that fuel consumption would increase, though even opponents admit that powering roadside structures would be very beneficial to everyone. Regardless of this project, the future of piezoelectric materials looks bright, with studies focusing on their properties and applications even in nanotechnology. If a compromise between the hardness of the road and the make-up of the small devices is reached, then undoubtedly the system will benefit both drivers and the Israeli national power grid.