

Video: Researcher teams up with industry to help bring hydrogen-powered vehicles to market

March 3 2015, by Geoff McMaster

If Marc Secanell Gallart had his way, the streets would be filled with hydrogen-fuelled vehicles. The technology already exists, and has for some time, says the director of the University of Alberta's Energy Systems Design Laboratory. But engineers like him are now only a few years away from reducing the cost of the fuel cell enough to compete with the conventional combustion engine.

The impact of [hydrogen](#) fuel-cell technology could be huge, especially in reducing carbon emissions. Transportation of all kinds accounts for more than 30 per cent of the energy consumed in Canada, almost all of that from carbon-spewing fossil fuel.

"We have not gone far enough in reducing carbon consumption in the transportation sector," says Secanell Gallart. "We have to find some way to replace the internal [combustion engine](#), and fuel cells are one of the technologies that has the potential to do that."

Mercedes Benz and Ford are two of the companies benefiting from Secanell Gallart's research, especially the computer modelling needed to test each advance. These two vehicle manufacturers have already released hydrogen cars on a small scale but plan to go after a much larger share of the market in next two to three years as the number of hydrogen fill-up stations also increases.

The main challenge is the cost of the fuel cell, but Secanell Gallart is working on a way to bring it down by reducing the amount of platinum, a scarce and expensive element used as a catalyst in producing electricity. One clear benefit of this form of alternative energy is that the same technology used in creating a fuel cell is applied to manufacturing the hydrogen fuel that feeds it.

In this video, produced with funding from the Natural Sciences and Engineering Research Council, Secanell Gallart shows how a [fuel cell](#) works and explains the benefits in partnering with industry to solve real-world problems.

Provided by University of Alberta

Citation: Video: Researcher teams up with industry to help bring hydrogen-powered vehicles to market (2015, March 3) retrieved 18 April 2024 from <https://phys.org/news/2015-03-video-teams-industry-hydrogen-powered-vehicles.html>

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