



## PRESS RELEASE



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### **UMICORE AND SOLVAY FOSTER ZERO EMISSION CAR RACING TEAM**

#### *Two established Belgian names sponsor Belgian fuel cell powered racing kart*

Umicore and Solvay, two Belgian-based global companies active in the area of environmentally friendly energy alternatives, have agreed to join forces in backing the “Solvay Umicore Zero Emission Racing Team”, a group of engineering students who have developed a racing kart that runs exclusively on hydrogen and will take part in the “Formula Zero Championship, Student Edition 2008-2009” in Rotterdam.

“Formula Zero” is the first international championship for hydrogen fuel cell vehicles. The race class will initially consist of karts but the aim is to scale it up to a full size racing class in the course of the next few years. The championship will kick off in Rotterdam on August 22-23<sup>rd</sup>, followed by three other locations around the globe.

Although large scale fuel cell applications for automotive purposes are still some time off, the race will demonstrate that the technology is up and running, providing a viable and “zero emission” alternative to traditional combustion engine technology, a sneak preview of things to come ...

The team from Leuven-based Group T technical university will compete with five other teams from colleges and universities in the United States, Spain, the Netherlands and the United Kingdom. Only six teams made it through the initial design competition. The Solvay Umicore Zero Emission Racing Team includes experienced eco-racers, who were also members of the Umicore Solar Team which came in second during the “World Solar Challenge” in Australia in October 2007.

The kart the Group T team has assembled weighs less than 185 kilograms, is able to rev up to a speed of 100 km/h in four seconds and has a top speed of 120 km/h.

Umicore and Solvay, who respectively enjoy leading positions in precious metals catalyst and polymer membrane technology, consider fuel cell technology as a promising source of future business: they set up SolviCore, a 50-50 percent joint venture in 2006 to develop, produce and market “membrane electrode assemblies” (MEA), the core component of the fuel cell where hydrogen reacts with oxygen from ambient air to generate electricity, with water vapour as the sole byproduct.

Fuel cells, which convert hydrogen into electrical power, are not only much more environmentally friendly than traditional combustion engines; they are also much more efficient: the power conversion rate – at around 50% - is twice as high. Moreover, as hydrogen can be produced from renewable sources, fuel cell technology will also help to reduce the dependence of our economy on oil and other fossil fuels.

**UMICORE** is a materials technology group. Its activities are centered on four business areas: Advanced Materials, Precious Metals Products and Catalysts, Precious Metals Services and Zinc Specialties. Each business area is divided into market-focused business units. The Umicore Group has industrial operations on all continents and serves a global customer base; it generated a turnover of EUR 8.3 billion in 2007 (EUR 1.9 billion excluding metal) and currently employs some 15,000 people. Details are available at [www.umicore.com](http://www.umicore.com)

**SOLVAY** is an international chemical and pharmaceutical Group with headquarters in Brussels. It employs more than 28,000 people in 50 countries. In 2007, its consolidated sales amounted to EUR 9.6 billion, generated by its three sectors of activity: Chemicals, Plastics and Pharmaceuticals. Solvay is listed on the NYSE Euronext stock exchange in Brussels (NYSE Euronext: SOLB.BE - Bloomberg: SOLB.BB - Reuters: SOLBt.BR). Details are available at [www.solvay.com](http://www.solvay.com)

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**NOTES TO THE EDITORS:**

**Fuel cell technology** is based on the catalytic transformation of fuel (hydrogen, methanol,..) -- via chemical reaction with oxygen -- into electricity, heat and water. It is likely to become the new energy technology in the medium and long term future for a wide variety of portable (for example personal computers and mobile phones), stationary (for example combined heat and power – CHP – generation) and automotive applications.

The **MEA** is the core of the fuel cell: it consists of a membrane which separates the electrode-catalyst material coated on both surfaces of the membrane to allow for the chemical transformation of fuel into electricity. The catalytic process on the anode (oxidation of fuel) and the cathode (reduction of oxygen) sides of the membrane generate electricity, heat and water. The advantages of the fuel cell-technology include a higher energy yield and density and the generation of water as sole by-product.

One of the strategy platforms of **Solvay's Future Businesses** activity is devoted to **sustainable energies**. That includes programs for the development of hydrogen fuel technology. More specifically, two applications are targeted: materials and components for manufacturing fuel cells; and hydrogen storage solutions. Solvay provides its expertise in a number of partnerships, in addition to SolviCore. In particular, Solvay offers directly on the market under the Hyflon®Ion tradename Ionomer dispersion and high performance fluorinated membranes for fuel cell applications through its fully owned subsidiary Solvay Solexis. Several collaborations are being pursued in this regard both in the auto industry and in other market segments (such as portable electronics and small power units). Furthermore, Solvay invested jointly with the Conduit Ventures fund (UK) in the Amminex A/S company at Lyngby (Denmark). Amminex A/S is developing compact, reliable technical solutions for storing hydrogen, the 'fuel' in fuel cells.

Approximately 80% of **Umicore's** R&D expenditure is dedicated to projects in the area of **clean technology** such as fuel cells, solar grade silicon production technology, high-efficiency solar cells, rechargeable batteries, automotive catalysts and precious metals recycling. Umicore's hi-tech materials offer society a comprehensive platform of energy-intelligent solutions which allow to produce, store and renew energy in an environmentally friendly, renewable and sustainable way. And since metals can be recycled almost infinitely without losing any of their inherent qualities, Umicore has also completely mastered that technology as the world's biggest recycler of precious metals. Sustainable development is Umicore's business.