FAQ

1. Where was the nanoFLOWCELL® developed and by whom?

The nanoFLOWCELL® was researched, developed, and brought to prototype status in the laboratories of the Virtual Reality Centre, now known as the nanoFLOWCELL DigiLab, under the direction of the physicist and development engineer Nunzio La Vecchia. The owner of the rights to this technology is nanoFLOWCELL AG, based in Vaduz, Liechtenstein, and founded in December 2013.

2. How does the nanoFLOWCELL® work?

The nanoFLOWCELL® works like a combination of a battery and a fuel cell using liquid electrolyte, which is kept in two tanks and pumped through the cell. At the heart of the system is a membrane that separates two differing chemistries. A controlled exchange of charges releases energy for the electric powertrain. For further details, see the Geneva Motor Show 2014 press release section entitled “Introducing the nanoFLOWCELL®” at www.nanoflowcell.com/mediacenter

3. How was the performance of the nanoFLOWCELL® significantly increased compared to conventional redox flow-cells?

A large increase in the number of charge carriers in the electrolyte fluid within the nanoFLOWCELL® significantly increased its performance compared to conventional redox flow-cells. This radically increased the concentration of energy compared to conventional, terrestrial flow cell systems, like those used in domestic residences.

4. How environmentally friendly is the nanoFLOWCELL® fuel liquid?

The fuel liquid contains no environmentally damaging components. The electrolytic solutions are composed of various non-toxic substances. If sufficiently diluted, they could even be disposed of through normal wastewater treatment plants.

5. What was Nunzio La Vecchia’s part in the construction of the QUANT e-Sportslimousine?

Nunzio La Vecchia leads the development and construction of the QUANT e-Sportslimousine. He was responsible for the design as well as the development of the innovative propulsion technology in the nanoFLOWCELL DigiLab in Zurich. With more than 60 patent applications to his name, in recent years, Nunzio La Vecchia has been forging new paths in molecular engineering and the development of innovative energy storage systems.

6. Is the QUANT e-Sportslimousine approved for use on public roads? When can we expect it?

The current example is a prototype for a series in planning. Certification as a test vehicle is expected during 2014. Before it can be certified for series production, extensive road testing will be carried out. Homologation is planned for 2015.

7. Can journalists or interested citizens test drive the QUANT e-Sportlimousine? If so, when and where?

The first prototype will be used exclusively for vehicle testing. In the 2nd half of 2014, workshops are planned for a closer look at the energy storage technology, and details regarding the powertrain and coachwork. At that time, representative of the international press will be given the chance to see the QUANT e-Sportlimousine in action and/or ride in it as passengers.

8. What is the QUANT e-Sportlimousine's electrolyte consumption in kWh per 100 km of driving?

The electrolyte is not consumed at all; rather, it is discharged during use. The quantity remains the same; the contents of the tanks must simply be exchanged for freshly charged electrolyte once they are discharged. The QUANT e-Sportlimousine's energy consumption is roughly 20 kWh/100 km. Its driving range in the current configuration is therefore around 600 kilometres.

9. What differentiates the QUANT e-Sportslimousine from the NLV Quant that was presented at the 2009 and 2010 Geneva Motor Shows?

The QUANT e-Sportslimousine is a completely new development, both technically and optically, compared to the NLV Quant. Its drive is based on the newly developed nanoFLOWCELL® technology.
In addition, the completely redesigned QUANT e-Sportslimousine – unlike its predecessor – is 100% ready for homologation. Its innovative, sporty construction underscores the revolutionary approach of the trail-blazing nanoFLOWCELL® technology.

10. Does nanoFLOWCELL AG produce other products or is it planning any others? If so, then what are they?

Flow cells have a broad range of applications and the potential to fulfil the needs of numerous market segments: automotive, shipping, railways, aerospace, terrestrial, as well as domestic installation, etc.

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About nanoFLOWCELL AG

Founded in late 2013, nanoFLOWCELL AG is an innovative Research and Development Centre based in Vaduz, Liechtenstein. The focus of nanoFLOWCELL AG's research is on the advanced development of drive technology and the classification of flow-cell technology. In the simulation laboratory of the nanoFLOWCELL DigiLab in Zurich, mastermind and development chief Nunzio La Vecchia and his team examine important aspects of quantum chemistry on the basis of molecular engineering. For years they simulated experiments with charge transfer, then conducted trials using digital models, before finally synthesising them for further testing. The current research vehicle, the QUANT e-Sportlimousine, enables the developers to study the mechanisms of charge transfer for the innovative storage technology – the nanoFLOWCELL® – during vehicle operation, as well as to fine tune charge strategies for recuperation and further develop the regeneration of cell charging and safety as well as quality controls.