

nanoFlowcell AG presents new QUANT F in Geneva

Electric automobile with range of 800 km and exceptional performance

Zurich, 10 February 2015 – "This car is enormously powerful, environment-friendly and unique in one," says Nunzio La Vecchia, Chief Technical Officer at nanoFlowcell AG, of the new QUANT F, which will have its world premiere at the 2015 Geneva International Motor Show on 3 March 2015.

The four-seater e-sports sedan with nanoFlowcell® drive technology is a further development of the QUANT E from 2014, the first automobile with flow cell drive to be approved by the German TÜV technical inspection authority. The new QUANT F has been completely re-engineered and re-designed. With its new 2-speed automatic transmission nanoFlowcell AG has developed a new drive system, the likes of which has not existed to date. This 2-speed transmission was developed in-house specifically for impressive QUANT performance with nanoFlowcell®. A top speed of over 300 km/h in all-electric mode with nanoFlowcell® drive technology and zero harmful emissions round off the exceptional performance attributes of the new QUANT F.

The new QUANT F – environment-friendly dynamic performance with 1090 PS/801.69 kW

"The QUANT F is a complete re-design of its predecessor, the QUANT E, and stands apart not only in terms of appearance with its red colour but also as a result of the integration of newly developed technical components. We have achieved a further improvement in performance figures with the nanoFlowcell®. With the QUANT F we are currently able to attain peak output of 1090 PS/801.69 kW for a limited duration and a maximum rated voltage of 735 V (previously 600 V). This represents a massive increase for an electric vehicle. In this connection, I would expressly like to point out that we researchers are not interested here in pumping up PS/kW figures, but rather in realising what is technically feasible. For both technical and economic reasons, the rated voltage for normal operation of the QUANT F will stand at approximately 400 V in future. This enables efficient and economical driving and means correspondingly greater ranges accompanied by outstanding performance with zero harmful emissions," explains Chief Technical Officer Nunzio La Vecchia.

The enhanced nanoFlowcell® continuously feeds over 50 amperes of current into the newly developed buffer system of the QUANT F. In turn, this buffer system is briefly able to supply over 2000 amperes when needed for full performance. "To our knowledge, no-one has ever before put a system delivering over 2000 amperes on the road in a passenger car. This is unique. We achieve this by combining our flow battery with the new buffer system. This system opens up vast potential for the future of electric mobility," says Nunzio La Vecchia.

A newly developed monocoque made of carbon fibre with a narrower A-pillar provides the QUANT F with a more spacious interior and elegant lines while offering exceptional safety for four passengers.

Range of 800 km with nanoFlowcell® and ionic liquid

In addition to the QUANT F's outstanding performance data and design, the vehicle also boasts impressive range: "Please consider that we are driving a 5.25-metre long sports sedan in all-electric mode over a range of 800 km. This is not a small car, but a large sedan for four people. A sports sedan. As such, nanoFlowcell AG is pointing the way to the future shape of sustainable electric mobility," observes La Vecchia.

As an alternative drive system, the nanoFlowcell® is operated with an ionic liquid. "Instead of using hydrogen and oxygen as in a conventional fuel cell, we work with two ionic fluids – one with a positive charge and one with a negative charge," explains Nunzio La Vecchia. With a total tank capacity of 500 litres, comprising two times 250 litres in two tanks accommodated separately in the QUANT's substructure, in the space of only nine months we have achieved an increase in range of over 30 percent in comparison to the QUANT E from 2014. "We are only in the initial phase of our development work. The fact that we store the energy for our drive in a fluid provides us with enormous advantages over systems employed to date in the field of electric mobility. We can use all the cavities in the vehicle to transport the ionic liquid. As the liquid is neither flammable nor toxic, we believe we are absolutely on the right track with this medium," Nunzio La Vecchia adds.

Disengageable front axle for optimum performance

As another innovation on the QUANT F, the permanent 4x4 all-wheel drive, which is implemented via four electric motors, can be converted automatically into a rear-wheel drive at appropriately high speeds or high acceleration rates. To this end the front axle is declutched and subsequently runs in idling mode. "We endeavour to provide the driver with optimum acceleration and stability in every driving situation, especially at higher speeds. This is easier to achieve with rear-wheel drive than with permanent 4x4 drive," explains La Vecchia.

2-stage rear aerofoil for sporty driving

The 2-stage aerofoil is another new feature on the QUANT F. This is activated automatically on attaining a speed of 80 km/h, applying additional negative lift force to the rear wheels for sporty driving, particularly at high speeds. "Thanks to its aerodynamic design, the QUANT F achieves outstanding drag coefficients. The 2-stage rear aerofoil enables the driver to apply the necessary grip to the road for even sportier driving, even at extremely high speeds and acceleration rates. It's the ultimate thrill behind a steering wheel," enthuses Nunzio La Vecchia.

"QUANTeYES" headlamps

"As a research and development company, we are always endeavouring to push back the boundaries and introduce innovations which are unknown to the market. An example in 2014 was the sensorFlow Technology®, our capacitive switches projected onto real wood. We have now come up with something new once again in the field of light technology: In the front lights of the QUANT F we have installed back-lit crystals which project a "Q" for QUANT when the headlamps are switched on. The front lights of the QUANT F now have the appearance of eyes with pupils. QUANT eyes – giving rise to the name QUANTeYES. This lends the entire front section even more personality and gives it a special face," observes Chief Technical Officer La Vecchia.

Exterior already 100 percent compatible with homologation requirements, interior over 90 percent compatible

With the new QUANT F, nanoFlowcell AG is aiming for homologation for the purposes of series production. "The exterior of the new QUANT F is already 100% in compliance with the requirements pertaining to series production homologation on a technical level. The interior is around 90% in

compliance with homologation requirements. Homologation requirements currently still require to be met with regard to the front display, the airbags, the complex crash tests and formal tests and documentation. The crash tests are to be carried out in the USA and in Germany. Though I must say the idea of putting such a fascinating car through a crash test really grates on me," says Nunzio La Vecchia, Chief Technical Officer at nanoFlowcell AG.

Information for the media

Anyone wishing to gain a personal impression of the new QUANT F can do so at the 2015 Geneva International Motor Show (**press days: 3 and 4 March 2015, PALEXPO, hall 1, stand 1224. Open to the public: 5-15 March 2015**). Personal interviews can also be arranged here. Should you be interested, please contact the press team for the purposes of accreditation, planning and other arrangements. The **press conference** takes place at the QUANT stand on **3 March 2015 at 8.30 a.m.**

About nanoFlowcell AG

nanoFlowcell AG, founded in late 2013, is an innovative research and development company. The research of nanoFlowcell AG focuses on advancing the flow cell drive system technology and systematics. With the granting of a road-use licence by SGS TÜV Saar in July 2014 and the associated driving permit for German and European roads nanoFlowcell AG has introduced the first-ever car using flow cell drive technology to our roads – the QUANT E. The next milestone for the company will be obtaining the permit to go into series production and developing other uses for the nanoFlowcell® in different sectors of industry and business. Two 100% subsidiaries of nanoFlowcell AG were established for this purpose – nanoProduction GmbH in Waldshut/Germany and nanoResearch SA in Switzerland.

Media contact

Please feel free to contact the nanoFlowcell AG press team to request interviews at the 2015 Geneva International Motor Show and with any general queries or inquiries:

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