VACSTACK stator provides a decisive reduction of size and weight

Hanau – VACUUMSCHMELZE (VAC) the specialist in combining cobalt-iron rotor-stator-systems and permanent magnet assemblies to record-breaking systems is supporting the University of Nottingham (UoN) in constructing a unique electric motor-bike. The first test under racing conditions at Donington Park/GB led the team to an overwhelming victory in the second race. They won with an impressive lead of more than six seconds over motorcycles with combustion engines.

The motor uses a VACSTACK stator which typically providing a 25 % size and weight reduction, thus enabling an unbeatable advantage for the design of the bike. At the current development stage of the bike, a weight-to-power ration of 1.13 kW/kg can be achieved; in the upper rpm range, the engine provides a torque of 300 Nm. The impressive success of Daley Mathison, rider for Nottingham, proved again the extraordinary properties of the materials.

The parameters of success are VACODUR for the rotor, which will result in a speed increase of up to 33 %, VACOFLUX providing the size and weight reduction and, VAC's magnet assemblies, which provide an additional torque increase of approx. 6 %. Motor performance and efficiency can be adapted specifically.

The cobalt-iron high-perfomance materials provide their benefits not only in motorsport applications, but also within electro-mobility, aviation or industrial applications, which have constantly increasing requirements for electrical machines with the highest efficiency and power/weight ratio