

Press release
30 November 2021

Shaping the future of quantum computing together: BMW Group and RWTH Aachen University sign contract for “Quantum Information Systems” endowed chair.

- € 5.5 million for endowed chair and networking fund
- An important milestone for the industrialisation of quantum computing

Munich / Aachen. As one of the most promising future technologies, quantum computing has an enormous innovation potential. The BMW Group will in the future support research into the future technology of quantum computing at the RWTH Aachen University, thus once again emphasising its leading role in the development of a quantum ecosystem.

Prof. Dr. Ulrich Rüdiger, Rector of the RWTH Aachen University, Alexander Buresch, CIO of BMW AG, and Dr. Stefan Floeck, Executive Mentor of the Strategic Partnership of the BMW Group and RWTH Aachen University and Senior Vice President Product Line MINI and BMW Compact Class, have signed the contract for establishing the "Quantum Information Systems" endowed chair.

The BMW Group is providing € 4.5 million over a period of six years for professorship, equipment, and employees at the RWTH Aachen University. A further € 1.0 million will be paid into a networking fund that supports industrial research projects and ensures that the chair is integrated in the university environment and in the research centre Jülich. In the chair the use cases from the core business of the BMW Group with a potential quantum advantage are contemplated comprehensively in terms of industrialisation. The common higher-order objective of the RWTH Aachen University and the BMW Group is to close the gap between outstanding basic research in Germany and the applicability of quantum computing in industry.

Dr. Stefan Floeck: “The BMW Group can look back on many years of strategic partnership with the RWTH Aachen University. The close cooperation between companies and universities is mutually beneficial – we at the BMW Group are convinced of that. With its excellent networked ecosystem and technological focus,

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the RWTH Aachen University is the perfect home for the endowed chair, which will offer valuable insight into the industrialisation of quantum solutions."

Prof. Dr. Ulrich Rüdiger: "Quantum technology is one of the major topics of the future, with enormous innovation potential for our social progress. With this endowed professorship, we can intensify our research in this area. As RWTH Aachen University, we like working in networks. We are convinced that we achieve the best solutions for future topics through a continuous exchange of knowledge and technology with partners from science, industry and society."

Alexander Buresch: "The endowed chair at the RWTH Aachen University is an important step towards the potential use of quantum computing at the BMW Group. It creates software and integration competencies that are necessary for the industrialisation of the quantum computing ecosystem. Together with the Quantum Algorithms and Applications endowed chair at the Technical University of Munich, which we announced in June this year, we hope to unlock potential within the automotive value chain based on an end-to-end approach."

Another endowed chair for outstanding basic research in Germany

Quantum computing utilises quantum mechanical effects to accelerate computing capacity. As one of the most promising technologies of the future, it has the potential to push the limits of what is possible to date and revolutionise fields of application from material research to automated driving. The technology environment in the field of quantum computing is still only in its beginnings. University collaborations thus offer great potential.

On 16 June of this year, the BMW Group, together with the Technical University of Munich (TUM), already announced the establishment of the "Quantum Algorithms and Applications" endowed chair. The BMW Group will provide € 5.1 million over a period of six years for professorship, equipment, and employees at TUM. The chair addresses the development of algorithms related to use cases along the industrial value chain.

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For the BMW Group, the "Quantum Information Systems" endowed chair at RWTH Aachen University is an important addition to the existing chair in Munich. It contemplates use cases from the BMW Group's core business comprehensively in terms of industrialisation. Software integration and industrialisation skills are being created to implement a quantum advantage in the medium term.

The strategic partnership between the RWTH Aachen University and the BMW Group

As one of the leading technical universities in Europe, the RWTH Aachen University has been a strategic partner of the BMW Group since 2017. The RWTH Innovation is responsible for the key account management of the cooperation as the university's central, cross-university research and technology transfer unit. It supports the BMW Group in networking, initiating, and coordinating projects at the RWTH Aachen University. Dr. Stefan Floeck, Senior Vice President Product Line MINI and BMW Compact Class, was appointed Executive Mentor of the partnership and is thus the link between the BMW Group and the RWTH Aachen University. His role includes continuously developing the partnership and pressing ahead with the cooperation.

The scientists and also the young academics at the technical university are already cooperating closely with the development departments of the BMW Group. The BMW Group itself provides students with practical information on requirements from industry. This can also be seen in the research promotion project KIZAM (Artificial Intelligence in requirements management). Four institutes of RWTH Aachen University, four departments of the BMW Group and four other industrial partners are involved in research on how Artificial Intelligence can accelerate and improve product development. The first joint Technology Day was a highlight of the strategic partnership, which provided a platform for dialogue between science and business in June of this year.

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With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises 31 production and assembly facilities in 15 countries; the company has a global sales network in more than 140 countries.

In 2020, the BMW Group sold over 2.3 million passenger vehicles and more than 169,000 motorcycles worldwide. The profit before tax in the financial year 2020 was € 5.222 billion on revenues amounting to € 98.990 billion. As of 31 December 2020, the BMW Group had a workforce of 120,726 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company set the course for the future at an early stage and consistently makes sustainability and efficient resource management central to its strategic direction, from the supply chain through production to the end of the use phase of all products.

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RWTH Aachen University is one of the leading technical universities in Europe. She exploits strong research networks and the intellectual curiosity of its staff to address bold scientific questions, transfer forefront knowledge and drive innovative discoveries that impact global challenges. The University educates over 47,000 students enrolled in 150 courses. This includes more than 12,500 international students from over 135 countries.

The Excellence Initiative of the German federal and state governments provided RWTH with a unique opportunity to boost its research profile by strengthening the natural sciences and fostering interdisciplinary research. These were the first steps in RWTH's steady transformation into an Integrated Interdisciplinary University of Technology and also towards convergence. Topics include sustainable synthetic fuels, data mining, computational science, production technology, high-performance materials, health, renewable resources and mobility.



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Embedded in RWTH's genetic code is the transfer of results from basic and applied research into societally relevant innovations. This leads to numerous developments that are patented and utilized. The University's innovative capacity is reflected in the high number of business start-ups.

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