

Press release

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University of Miskolc and Bosch expand their collaboration

The twenty-year-old Bosch Department has been renewed

- The Bosch Department has been operating at the University of Miskolc for twenty years
- Bosch allocated a grant of 30 million forints for modern equipment and the renovation of the department
- The use of tools and technologies that are used in state-of-the-art factories are taught at the Bosch Department

The University of Miskolc and Bosch are reinforcing their educational collaboration. The Robert Bosch Mechatronics Department was founded twenty years ago at the university's Faculty of Mechanical Engineering and Informatics. Over the past two decades, more than 300 students have received practical training that can be used at the forefront of industry, with the help of university professors and Bosch staff.

For the twentieth anniversary, the department's rooms and surroundings were renovated, and the equipment was modernized so that future development and manufacturing engineers can continue to learn on cutting-edge equipment in the industry. In addition, the curriculum was adapted to current conditions and the competencies that can be acquired were expanded, and Bosch experts got also involved in education.

„In the past nearly two years, the Institute of Machine Tool and Mechatronics has been in discussions with the Bosch plants in Miskolc to explore how we could further strengthen the cooperation that has developed over the past two decades, as well as how to incorporate the rapid industrial development into the

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university's curriculum and implement relevant developments. It became clear at this point that the company could modernize the equipment in the Modular Mechatronics Laboratory and that industrial professionals could contribute to the development of practical course materials for the subjects taught here.

Therefore, in a unique approach, 5 basic stations and 1 complex system representing an assembly process were developed, specifically fitting into the curriculum of the Mechatronics undergraduate and master's programs. With these, students can learn PLC programming on the Rexroth ctrlX platform. Engineers who can program both robots and PLCs are in high demand. Additionally, the University of Miskolc warmly welcomed the donation of other equipment to the Robert Bosch Department of Mechatronics, as well as the creation of new community spaces," said **Prof. Dr. Zita Horváth, rector of the University of Miskolc.**

"Education must keep pace with the development of industry, and students must be offered up-to-date knowledge that can be used in practice. Bosch has been present in Miskolc for more than two decades, and we count the University of Miskolc among our first partners, with whom we maintain a mutually beneficial and fruitful cooperation in the fields of training and research. The work done at the Bosch Department, founded twenty years ago, is equally beneficial to the students, the university and Bosch, which is why we decided to develop the department and expand the cooperation," said Roland Ahl, plant manager of the automotive company, Robert Bosch Energy and Body Systems Kft.

"At Bosch, we develop and manufacture the technologies of the future, for which up-to-date, competitive knowledge is essential. An integral part of our strategy is to actively contribute to the domestic innovation industry and the training of new generations of engineers, in cooperation with the higher education sector. The University of Miskolc is a remarkably good partner in jointly training the professionals and leaders of the future. In the department, students can encounter tools and knowledge similar to those found in modern industrial factories," added Péter Révay, chief financial officer of Robert Bosch Power Tool Kft.

Students can learn in a realistic manufacturing environment

Starting from the academic year that began last September, the curriculum for the undergraduate course in mechatronics engineering was updated to reflect new technologies emerging in the industry. For example, greater emphasis is placed on programming the control of production line machines, including simulation software and training hardware stations provided by Bosch. One such station simulates a real-life manufacturing environment, moving parts, detecting processes with sensors and cameras, and sending data to the cloud. All of this provides students with the opportunity to practice controlling a production line using the same tools as in a modern industrial plant. As the level of automation in industry continues to increase, machine control is rapidly evolving, which should

be followed in education.

The cost of approximately 30 million forints of the modernization of the Bosch Department, founded on October 21, 2004, was provided by two Bosch companies in Miskolc: Robert Bosch Energy and Body Systems Kft., which develops and manufactures automotive components and electric drive systems; Robert Bosch Power Tool Kft., which manufactures power tools; as well as Bosch Rexroth Kft., which manufactures industrial and mobile applications.

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Basic information:

Bosch has been present in Hungary since 1898 with its products. After its re-establishment as a regional trading company in 1991, Bosch has grown into one of Hungary's largest foreign industrial employers with currently eight subsidiaries. In fiscal 2023 it had total net sales of 2.207 billion forints and consolidated sales to third parties on the Hungarian market of 343 billion forints. The Bosch Group in Hungary employs more than 18,300 associates (as of December 31, 2023). In addition to its manufacturing, commercial and development business, Bosch has a network of sales and service operations that covers the entire country.

The Bosch Group is a leading global supplier of technology and services. It employs roughly 417,900 associates worldwide (as of December 31, 2024). According to preliminary figures, the company generated sales of 90.5 billion euros in 2024. Its operations are divided into four business sectors: Mobility, Industrial Technology, Consumer Goods, and Energy and Building Technology. With its business activities, the company aims to use technology to help shape universal trends such as automation, electrification, digitalization, connectivity, and an orientation to sustainability. In this context, Bosch's broad diversification across regions and industries strengthens its innovativeness and robustness. Bosch uses its proven expertise in sensor technology, software, and services to offer customers cross-domain solutions from a single source. It also applies its expertise in connectivity and artificial intelligence in order to develop and manufacture user-friendly, sustainable products. With technology that is "Invented for life," Bosch wants to help improve quality of life and conserve natural resources. The Bosch Group comprises Robert Bosch GmbH and its roughly 470 subsidiary and regional companies in over 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. Bosch's innovative strength is key to the company's further development. At 136 locations across the globe, Bosch employs some 86,900 associates in research and development, of which nearly 48,000 are software engineers.

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