



## MOBILITY & PRODUCTION

Fields of Expertise TU Graz

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Source: Lunghammer – TU Graz

**M**ost of the research activities in the fields of both mobility and production are dedicated to the technological change required from an environmental perspective. So we are glad that the FoE Mobility & Production, for instance, plays an essential role in the field of hydrogen research across faculty boundaries. Basic and application-oriented research into hydrogen as an energy carrier in the industry, energy and mobility sectors is a strategic focus of the Center of Hydrogen Research at TU Graz. The

centre, by far the largest in Austria, deals with the entire value chain of the renewable hydrogen economy, from production to storage and distribution to application. There are already plans to expand the present unique research infrastructure in the foreseeable future.

The next step in the development of the smartfactory@tugraz is the required networking with other pilot factories and scientific units in Austria in order to serve as a role model for SMEs as regards interconnecting and creating powerful and effective manufacturing value chains. The services of Gaia-X are going to be used to generate a common and pure European data base and to establish specific manufacturing-oriented platforms. An application for funding is going to be submitted for this initiative.

The Battery Innovation Center (BIC), which was completed in February 2022,

is a funded research project in cooperation with AVL List GmbH, Rosendahl Nextrom GmbH, Virtual Vehicle Research GmbH and the Institute of Production Engineering of TU Graz. The goal of the project was the establishment of a research factory to produce and carry out research into modern electric vehicle batteries (EVB). Taking into account the rapidly changing EVB architectures based on new market demands, battery developments and increasing OEM knowledge, the facility is highly flexible and makes use of a matrix layout for all the different types of battery cells (cylindrical, prismatic and pouch cell), modules and packs.

The task of the Institute of Production Technology was the development of new concepts and methods in order to increase the required flexibility of the research factory. After the successful completion of BIC, new projects are planned and some are already in progress. ●

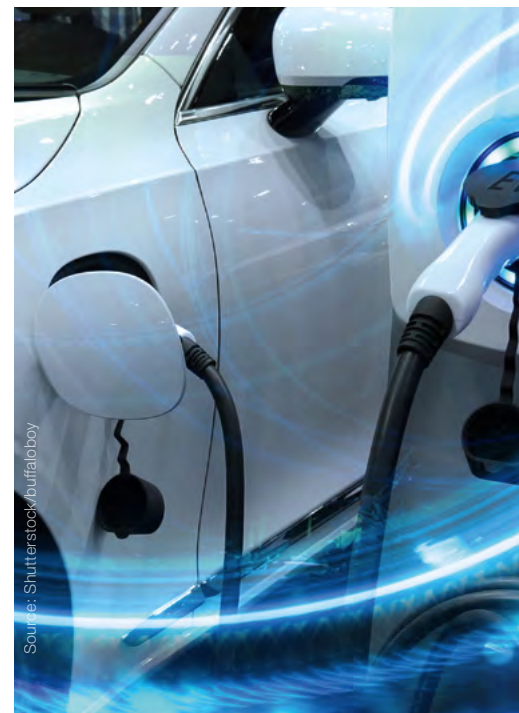
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## Battery Innovation Center – Research in Battery Production

Electromobility is becoming increasingly important in the automotive industry, with energy storage being a key issue.

AVL List GmbH is establishing the Battery Innovation Center (BIC) in Graz to address this topic and to offer appropriate solutions for the automotive market in the future. At the BIC, various battery cell types (Figure 1) are assembled into battery modules in the area of prototype and small series production for a wide range

of vehicles, from electric scooters to passenger cars and heavy vehicles. Finally, the modules are connected and finished into compact battery packs for installation in the vehicle. The unique aspect of the BIC is that it allows a flexible production line for the assembly of battery modules for all variants in an automated manner. >



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