

Alexandra Rommerskirchen to receive the Bertha Benz Prize 2021

Award from the Daimler and Benz Foundation for the outstanding doctorate of a female engineering scientist

The Bertha Benz Prize, endowed with 10,000 euros, will be awarded to Dr.-Ing. Alexandra Rommerskirchen on September 21, 2021. The findings of her dissertation allow important industrial processes to be made more sustainable and efficient.

Salts play an important role not only in our food and in the metabolism of organisms, but also in industrial processes – for example in mining, the chemical industry, or steel production. However, these processes can give rise to wastewater streams with a high salt content that are harmful to the environment. “I have developed a new process that recovers the dissolved salts from the wastewater as raw materials,” Rommerskirchen explains. By means of electric fields and flowable carbon electrodes, the salts are extracted from the wastewater and then concentrated. For this achievement the engineering scientist will receive the Daimler and Benz Foundation’s Bertha Benz Prize, which is endowed with 10,000 euros, on September 21, 2021.

“Continuous Flow-Electrode Capacitive Deionization (FCDI)” is the title of her dissertation, which she wrote at the Chair of Chemical Process Engineering (AVT.CVT) of RWTH Aachen University and the DWI Leibniz Institute for Interactive Materials. The core of the FCDI process is the removal of salts from wastewater streams by means of an electric field. This is accomplished with flowable carbon electrodes, which are capable of attracting large quantities of saltwater ions. The electrodes are then pumped into another module, where they are regenerated. At the same time, the salts are concentrated to the point where they become available as starting materials for further processes. The FCDI process can be operated continuously and is highly efficient, saves energy, and is cost-effective.

With this sustainable process, the award-winner is opening up new opportunities for returning valuable waste materials to process cycles. “Using FCDI technology has two positive effects: Salt emissions are avoided, and smaller volumes of new starting materials are required,” Rommerskirchen explains. Her ambitious work combines fundamental research with essential applications for sustainable industrial production and holds potential for further areas of technical application. It was in view of this thematic breadth that the jury found the dissertation particularly worthy of the prize.

With this award, the Daimler and Benz Foundation sets out to explicitly address women in the engineering disciplines and support them in their professional careers. The prize stands for curiosity, courage, perseverance and a pioneering spirit following in the footsteps of Bertha Benz, the name-giver of the award, who undertook the world’s first overland journey in an automobile in 1888. According to Rommerskirchen, courage is required above all in order not to be intimidated by the self-confidence of others. Young women in particular are often self-critical and tend to underestimate themselves. Her conclusion: “Have the courage – we too can do engineering!”

You can find more information about Alexandra Rommerskirchen and her research work in this video:

<https://vimeo.com/572510604/8906d17bd9>

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For her outstanding dissertation, Dr.-Ing. Alexandra Rommerskirchen is to receive the Daimler and Benz Foundation’s Bertha Benz Prize 2021. She has developed an innovative wastewater desalination process that can serve to make industrial processes more sustainable.

The Bertha Benz Prize

Young female engineers who create added value for society with the findings of their dissertations can be nominated for the Bertha Benz Prize by their scientific institutions. This prize, which is endowed with a sum of 10,000 euros, is awarded annually and acknowledges pioneering spirit, courage, and visionary character in commemoration of Bertha Benz. Together with her two sons, the eminent name-giver of this prize undertook the first overland journey in an automobile built by Carl Benz in 1888. With her knowledge and technical understanding, she gave her husband lifelong support.

The Daimler and Benz Foundation

The Daimler and Benz Foundation promotes science and research. For this purpose, it establishes innovative and interdisciplinary research formats. With its scholarship program for postdoctoral students and the Bertha Benz Prize, the foundation gives particular attention to the promotion of young scientists. Several lecture series are intended to increase the public visibility of science and emphasize its importance for our society.

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