PRESS RELEASE

Fraunhofer LBF Awards Ernst Gaßner Award for Outstanding Achievements in Automotive Lightweight Design

Since 2002, the Fraunhofer Institute for Structural Durability and System Reliability LBF has been granting the Ernst Gaßner Award for outstanding achievements in structural durability. The award honors experts for exceptional contributions in the development of safety-relevant, reliable lightweight components. This year, the seventh award ceremony saw the Darmstadt-based institute honor two winners: Dr. Yung-Li Lee, Fiat Chrysler Automobiles N.V. (FCA) in Auburn Hills, MI-USA, and Bruno Seufert, Daimler AG in Sindelfingen, Germany.

An international jury, whose members were appointed by the Fraunhofer LBF, selected the winners of the 2020 Ernst Gaßner Award from a large number of suggested candidates. Due to the current situation, a digital award ceremony was held for the first time this year. In a video message, Dr. Yung-Li Lee and Bruno Seufert were officially honored on April 9 by the director of the Fraunhofer LBF, Professor Tobias Melz, and the Head of the Department of Structural Durability, Rüdiger Heim.

Dr. Yung-Li Lee received the Ernst Gaßner Award for his outstanding work in structural durability at Fiat Chrysler Automobiles N.V. (FCA). Lee is responsible for the development and implementation of advanced structural durability technologies for design, simulation and testing. He is also editor-in-chief of the International Journal of Materials and Manufacturing of the Society of Automotive Engineers SAE, which also underlines his skills in the spirit of Ernst Gaßner.

Bruno Seufert has been responsible for structural durability testing at Daimler AG since 1990. Here, he has been involved in all structural durability matters concerning chassis since 1998. Under his leadership, numerous extraordinarily sophisticated and successful vehicle innovations have been developed, including active components in the chassis and lightweight axles. Seufert actively supports the German Association for Materials Research and Testing DVM and is an essential and recognized member of the circle of structural durability experts in Germany.

The Fraunhofer LBF has been awarding the Ernst Gaßner Award since 2002. Committed to the name of the institute's founder Ernst Gaßner, the research institute grants the award named after him to the work of engineers who have significantly influenced the development of structural durability in both theory and practice. Candidates must deal with time-varying service loads, i. e. spectrum loading, for

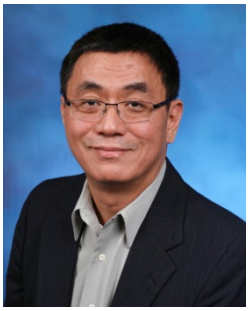
designing lightweight constructions — particularly as it relates to safety components — and hold a position of responsibility in an industrial company. The Ernst Gaßner Award is endowed and was awarded for the seventh time this year. More information as well as the digital award ceremony can be found on the website: www.lbf.fraunhofer.de/ega

Background

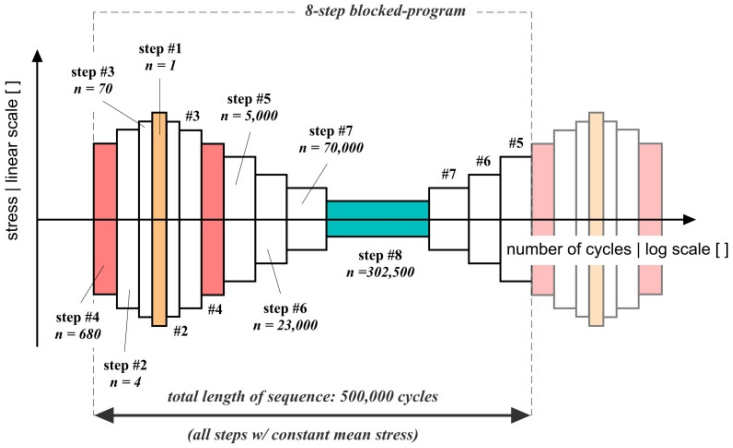
Professor Dr. Ernst Gaßner (1908 – 1988) lived and researched in Darmstadt. In the 1930s, he established the term "structural durability", i.e. the load-spectrum- and lifetime-oriented connection between the strength of components and the loads that occur during service. His outstanding merit was considering randomly occurring loads with variable amplitudes and mean values for designing lightweight components that are particularly light and yet still reliable. Professor Gaßner gained a strong international reputation among experts, and it is still valid today. The Laboratory for Structural Durability, co-founded by Gaßner in Darmstadt in 1938, now bears the name Fraunhofer Institute for Structural Durability and System Reliability LBF.

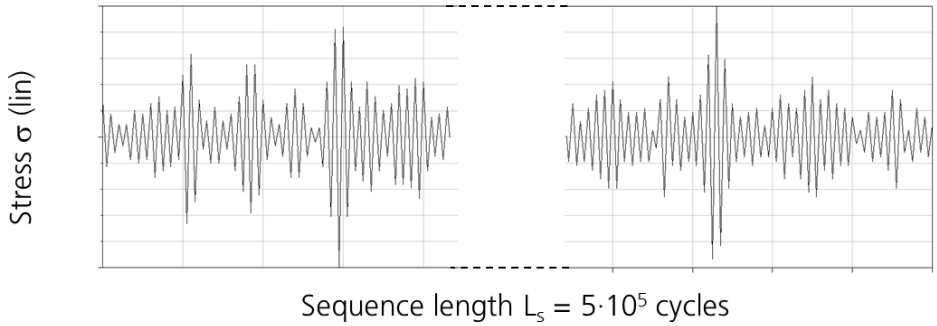
The test program for durability tests introduced by Ernst Gaßner in the 1930s made it possible for the first time to develop particularly lightweight and reliable components. The basic principle of his work - the application of loads with variable amplitudes for laboratory tests - continues to be the prerequisite for the durability and quality of modern products when it comes to lightweight constructions. His groundbreaking work, design and experimental proof of lightweight structures and the development of structural durability into a truly cross-sectional science are the basis of his great ongoing international reputation as a researcher and scientist. In his time, Gaßner left his mark on the entire German, European and American automotive and aircraft industries as well as their suppliers. Today, structural durability is applied in the automotive, railway and aerospace industries as well as medical technology, renewable energies, optics and mechanical engineering.

Winners of the Ernst Gaßner-Award 2020
Bruno Seufert, Daimler AG, Sindelfingen, Germany (left) and Dr. Yung-Li Lee, Fiat Chrysler Automobiles N.V., USA (right). (Photos: private)



After the introduction of servo-hydraulic testing machines the historical eight-step blocked load-time sequence proposed by Ernst Gaßner 1938 was replaced by service-like random load-time sequences (figures below) at the beginning of the 1970s.Gaßner's groundbreaking method finds its contemporary continuation here.
Graphic: Fraunhofer





Fraunhofer LBF in Darmstadt has stood for the **safety and reliability of lightweight structures** for more than 80 years. Today, with its expertise in the areas of structural durability, system reliability, vibration technology and polymer technology, the Institute provides solutions for three of the most important cross-cutting issues of the future: lightweight design, functional integration and cyberphysical mechanical engineering systems. The focus here is on solutions to social challenges such as resource efficiency and emission reduction as well as future mobility, like e-mobility and autonomous, networked driving. Comprehensive skills ranging from data acquisition in real operational field use to data analysis and data interpretation, in addition to deriving specific measures to design and improve material, component and system properties form the basis for this. Customers come from automotive and commercial vehicle construction, railway transport engineering, shipbuilding, aviation, machine and plant construction, power engineering, electrical engineering, medical engineering and the chemical industry. They benefit from the proven expertise of about 400 employees and cutting-edge technology accommodated in more than 17,900 square meters of laboratory and experimental space.

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