

PRESS RELEASE

PRESS RELEASEJune 12th, 2025 || page 1 | 3

Dr. Lutz Stobbe honored with the Fraunhofer IZM 2025 Research Award

Measurable data and narrated stories for sustainable microelectronics - For his pioneering research in sustainable information and communication technologies (ICT) the Fraunhofer Institute for Reliability and Microintegration IZM honors Dr. Lutz Stobbe with the 2025 Research Award. He is being recognized for his work on the life cycle assessment of ICT infrastructures, particularly data centers and network technologies. With his "Sustainable Networks and Computing" working group, Stobbe develops detailed ecological assessment models that precisely record the environmental impact of digital systems throughout their entire life cycle.

Dr. Lutz Stobbe's research is centered on a fundamental conviction: "Only what can be measured can be improved." In order to make well-founded decisions, such as those related to reducing CO₂ emissions, the utilization of materials, or enhancing energy efficiency, it is imperative to utilize quantitative data. His research provides precisely this basis. As part of the current Green ICT@FMD project, for example, his models record power consumption, manufacturing costs, materials and production processes with a high level of granularity - right down to individual assemblies or work steps. The comprehensive nature of this dataset facilitates the identification of ecological "hot spots" within digital systems and the subsequent development of specific improvement strategies. For example, new, modular chip designs or alternative manufacturing approaches can be specifically tested and optimized for their environmental impact - a decisive step towards eco-design for microelectronics.

Stobbe started his career in microelectronics with a unique background: he originally studied Japanese studies. His first contact with microelectronics came through translating scientific texts on lead-free electronics from Japanese. In the late 1990s his work led him to Fraunhofer IZM, where he began to systematically explore environmental technologies. What began as translation work developed into a scientific career. Lutz Stobbe earned his doctorate for work on roadmapping activities in the Japanese electronics industry and, over the years, acquired in-depth technical knowledge of microelectronics and communications engineering – "on the job", as he puts it. It is precisely his atypical path that has shaped him and is one of the reasons for the success of his work. As someone who has changed careers, he brings a broader perspective to technological issues.

Editorial officeGeorg Weigelt | georg.weigelt@izm.fraunhofer.de | Phone +49 30 46403-279 |Fraunhofer Institute for Reliability and Microintegration IZM | Gustav-Meyer-Allee 25 | 13355 Berlin | www.izm.fraunhofer.de |

"I believe that research has to tell a story," says the prizewinner. This is precisely where his strength lies: he knows how to present technical contexts in such a way that they are comprehensible and convincing for decision-makers from politics, business and society. He succeeds in combining complex, data-driven research with good communication and impact. His projects often arise not from existing funding projects, but from an idea that he then takes the initiative to implement. One example is a current project to develop an environmentally friendly home router with an aluminum housing, in which the mechanical structure and antenna technology were rethought. Started without a specific call for tenders, the project has since been awarded an innovation prize in Taiwan.

The researcher sees his work not only as an opportunity to make technological development more sustainable - but also as a chance to share knowledge, network and further advance technologies. Since 2019, he has been involved in what is known as scientific support for environmental assessment, in which scientists are working on several funded projects in an interdisciplinary manner on topics such as green ICT. There, he acts as a moderator, advisor and initiator, but he also says that continuous learning is particularly important to him: "Especially in a field like microelectronics, which combines so many disciplines, you have to keep developing. Learning is part of the job."

In the long term, Stobbe sees the greatest challenge in the circular design of digital products. In addition to reducing energy consumption, the reusability, reparability and recyclability of electronics are becoming increasingly important. Only through such circular thinking can the digital infrastructure of the future be designed to be both efficient and ecologically responsible. Dr. Lutz Stobbe shows that sustainable technology development needs far more than just numbers – it also needs stories, the courage to take the initiative and the will to take responsibility.

About the Award:

For over 20 years, Fraunhofer IZM has presented the Research Award to recognize "outstanding research achievements in microelectronics, microsystems technology, and packaging", as well as the transfer of these achievements to industry-relevant developments. On June 12, 2025, Dr. Lutz Stobbe received the award for his work on "Ecodesign for networks, data centers, and other ICT infrastructure based on technology-specific approaches."

(Text: Lotta Jahnke)

PRESS RELEASE

June 12th, 2025 || page 2 | 3

Technical contact

Dr. Lutz Stobbe | Environmental and Reliability Engineering | Phone +49 30 46403-139 | Lutz.stobbe@izm.fraunhofer.de | Fraunhofer Institute for Reliability and Microintegration IZM | Gustav-Meyer-Allee 25 | 13355 Berlin | www.izm.fraunhofer.de



PRESS RELEASEJune 12th, 2025 || page 3 | 3

f.l.t.r.: Dr. Nils F. Nissen; Prof. Dr. Ulrike Ganesh; Dr. Lutz Stobbe & Prof. Dr.-Ing. Martin Schneider-Ramelow | © Fraunhofer IZM / Enrica Theuke | Print-quality images: <http://www.izm.fraunhofer.de/pics>

The **Fraunhofer-Gesellschaft**, headquartered in Germany, is the world's leading applied research organization. With its focus on developing key technologies that are vital for the future and enabling the commercial exploitation of this work by business and industry, Fraunhofer plays a central role now and in the future. Founded in 1949, the Fraunhofer-Gesellschaft currently operates 76 institutes and research institutions throughout Germany. The majority of the organization's 32,000 employees are qualified scientists and engineers, who work with an annual research budget of 3.4 billion euros. Of this sum, 3.0 billion euros are generated through contract research.

About Fraunhofer IZM:

Highly integrated microelectronics are omnipresent and yet often evade the eye. With 4 central technology clusters, **Fraunhofer IZM** covers a wide range of areas in quantum, as well as medical, communications and high-frequency technology. With our world-leading expertise, we offer our customers cost-effective development and reliability assessment of electronic packaging technologies, as well as custom-tailored system integration technologies at wafer, chip and board level. For over 30 years and at 3 locations, we have been supporting start-ups as well as medium-sized and large international companies (with knowledge transfer) and researching key technologies for intelligent electronic systems of the future.

Technical contact

Dr. Lutz Stobbe | Environmental and Reliability Engineering | Phone +49 30 46403-139 | Lutz.stobbe@izm.fraunhofer.de | Fraunhofer Institute for Reliability and Microintegration IZM | Gustav-Meyer-Allee 25 | 13355 Berlin | www.izm.fraunhofer.de