



FRAUNHOFER GROUP FOR MICROELECTRONICS IN COOPERATION WITH LEIBNIZ FBH UND IHP

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**PRESS RELEASE**

September, 20, 2022 || Page 2 | 6  
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7 K **Green ICT @ FMD** FR PSH M F R Q W U R L O R W H L P S O H  
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@ FMD competence center e are creating a central contact point for sustain-  
a le electronics. The competence center at the esearch Fa Microelectronics  
German FMD is the core of our Green ICT initiati e. Thus e are not onl  
reinforcing climate protection ut strengthening our competiti eness as ell.

ased on the portfolio structures and e pertise created the FMD the pro-  
ected competence center can e targeted in an efficient manner. nder the  
la el Green ICT @ FMD the application-oriented research in the field of  
microelec-tronics is to e progressi el e panded o er the ne t . ears in  
line ith de-mand in terms of resource conser ation and a significant  
reduction of the C footprint in the further de elopment of ICT applications  
and infrastructures.

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Green ICT @ FMD competence center specific Green  
ICT issues can no e coordinated and addressed as a hole hile compreh-  
si e cross-technological ICT solutions up to a high le el of technical readiness are  
offered to partners in industr and research under a single roof. Therefore as

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## FRAUNHOFER GROUP FOR MICROELECTRONICS IN COOPERATION WITH LEIBNIZ FBH UND IHP

established framework for cross-location cooperation between different R&D centers, the Research Fab Microelectronics Germany provides a two-fold opportunity: On the one hand, to perform a comprehensive systemic examination and further development of Green ICT issues with its partner network. On the other hand, to leverage the technological expertise of its Fraunhofer and Leibniz institutes to ensure the necessary technical depth in overall system analysis.

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**PRESS RELEASE**

September, 20, 2022 || Page 3 | 6  
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### **Solution approaches for sustainable digitalization**

The Fraunhofer and Leibniz institutes' portfolio within the Green ICT framework will be broadened with an application-oriented approach that is closely aligned with current commercial and business demands. In Erlangen, Dresden and Berlin, new application-oriented and system-oriented Green ICT hubs will be opened to complement the existing FMD institutes' research projects and as a basis for further research work.

These hubs combine the full expertise of the FMD institutes on key issues regarding future ICT applications. Moreover, the hubs are the first point of contact for project partners from both industry and academia, thus providing a particularly low-threshold range of services. In addition to the central office, the Green ICT hubs are the key interfaces to the thematically bundled technology competencies and testbeds. These Green ICT hubs will be implemented in the thematic focus fields of sensor edge cloud systems, communication infrastructures, as well as materials and processes for the so called *Green Production*, topics of particularly high relevance for industrial partners in Germany and Europe.

Parallel to bringing together the diverse research projects and the already existing know-how in the field of Green ICT in Germany, developing them further in line with requirements and making them usable for the industry. The overall project *Green ICT @ FMD* likewise comprises accompanying measures for a sustainable digitalization. The latter address both an early raise of awareness among the upcoming generations of professionals (Academic Young Professionals Program – *Digital Green Camp*) and at providing ongoing training for experts already working in this field.

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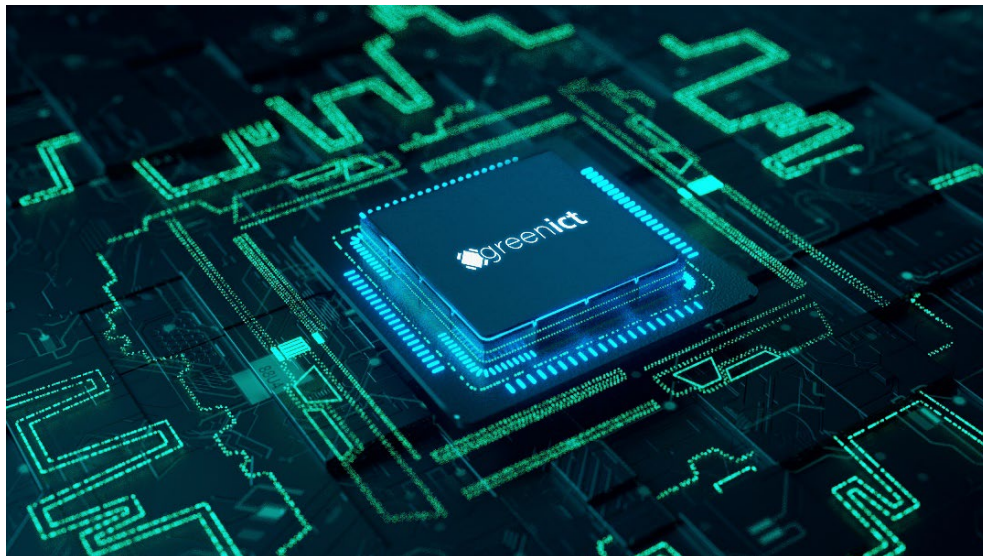
Furthermore, the specific requirements of working with start-up companies are addressed in a separate subproject – The Hub for Green-ICT Start-ups – to enable emerging businesses to develop their product ideas using environmentally friendly and resource-efficient methods right from the outset.

**PRESS RELEASE**

September, 20, 2022 || Page 4 | 6



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With the development of modern electronics for information and communication technology with low resource use, the competence center *Green ICT @ FMD* is contributing to meeting the German government's climate goals.

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**PRESS RELEASE**

September, 20, 2022 || Page 5 | 6  
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To reduce resource consumption in the Internet of Things, in applications of AI as well as in data centers, significant progress in micro- and power electronics, including their manufacturing processes, is required. © *Fraunhofer Microelectronics*

### **The project partners of the competence center *Green ICT @ FMD***

Fraunhofer EMFT, Fraunhofer ENAS, Ferdinand-Braun-Institut gGmbH, Leibniz-Institut fuer Hoehstfrequenztechnik (FBH), Fraunhofer FHR, Fraunhofer HHI, Fraunhofer IAF, IHP: Leibniz Institute for High Performance Microelectronics, Fraunhofer IIS, Fraunhofer IISB, Fraunhofer IMS, Fraunhofer IPMS, Fraunhofer ISI, Fraunhofer ISIT, Fraunhofer IZM.

### **About the Research Fab Microelectronics Germany (FMD)**

For the first time, eleven institutes of the Fraunhofer Group for Microelectronics and the two Leibniz Institutes FBH and IHP have been combining their expertise within the framework of the FMD since 2017 in order to achieve and expand a new quality level in the research, development and (pilot) production

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of semiconductor-based micro- and nanosystems. With more than 2,000 scientists, the FMD is one of the largest and world-leading R&D associations for micro- and nano-electronics applications and systems in Europe. As a global driver of innovation, the FMD provides a unique range of expertise and infrastructures, while contributing to Germany and Europe's leading position in research and development. This implies bridging the gap between basic research and cross-technology solutions, right through to customer-specific product development. Funding for the modernization of the research infrastructure of the thirteen participating institutes was provided by the German Federal Ministry of Education and Research with a total of 350 million euros from 2017 to 2021.

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**PRESS RELEASE**

September, 20, 2022 || Page 6 | 6

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