

Participation in the University of Arkansas' program [MUSiC] —Contributing to Technological Innovation in Power Semiconductors and Aiming for a Sustainable Society—

Nissin Ion Equipment Co., Ltd. (Headquarters: Minami-ku, Kyoto, "Nissin Ion"), a group company of Nissin Electric Co., Ltd. (Headquarters: Ukyo-ku, Kyoto), which manufactures and sells ion implanters for the manufacture of semiconductors and small- and medium-sized flat panel displays (FPDs), has announced a collaboration with the University of Arkansas', USA, Multi-User Silicon Carbide Research and Fabrication Facility (MUSiC).

SiC power devices will be instrumental in enabling such diverse applications as solar power generation, xEV, and general electronics. This is due to the unique characteristics namely, efficiency, durability, and heat resistance.

MUSiC will be the first openly accessible facility to create new power semiconductor technologies and integrated circuits that will be the seeds of start-up companies worldwide, thanks to the manufacturing capabilities and facilities of SiC devices. This facility provides an opportunity for prototyping, demo, and device design by any researchers and companies. It also plans to train students and develop the next generation of leaders in an expertly-trained semiconductor community. In the U.S., several top SiC power device manufacturers, as well as many fabless SMEs, have announced or are considering participating in this program.

Nissin Ion has been developing and manufacturing the IMPHEAT series, an ion implanter for SiC high-temperature processing and was one of the first to enter the SiC power device market. Nissin Ion will provide MUSiC with IMPHEAT-II, and start a three year joint research program in 2025 in collaboration with MUSiC, giving us an opportunity to gain wider ion implantation knowledge required for advanced devices. This will be reflected in next-generation equipment, and contribute to the realization of a sustainable society through cleaner and more economical energy using performance-enhanced power semiconductors, which will in turn lead to reduced energy consumption.



Ion Implanter for SiC Power Devices 「IMPHEAT-II」

This is a business activity that contributes to three out of the six growth strategies in the Nissin Electric Group Medium-to-Long-Term Business Plan VISION2025, "Expansion of environmentally friendly products" "Response to renewable energy" "Business expansion in association with the expansion of EVs" and two out of the business foundation strengthening items "Enhancing manufacturing capabilities" "Improving productivity."

The Nissin Electric Group has been stepping up its efforts to promote the SDGs through its business operations. This accomplishment is related to the following goals among the 17 SDGs.

- 4. Quality Education
- 7. Affordable and Clean Energy
- 9. Industry, Innovation and Infrastructure