SCREEN

NEWS RELEASE

Doc. No.: NR250312E

Project Involving SCREEN Adopted for the Industry-Academia Collaboration (Stage II) of the Adaptable and Seamless Technology Transfer Program Through Target-Driven R&D (A-STEP)

Kyoto, Japan – March 12, 2025 – SCREEN Holdings Co., Ltd. announces that a project involving SCREEN has been adopted for the Japan Science and Technology Agency (JST)'s Industry-Academia Collaboration (Stage II) of the Adaptable and Seamless Technology Transfer Program Through Target-Driven R&D (A-STEP) in FY2024. The project is in collaboration with Associate Professor Fumihiro Inoue, Vice Director at the Semiconductor and Quantum Integrated Electronics Research Center, which is part of the Institute for Multidisciplinary Sciences at Yokohama National University (President: Izuru Umehara), DISCO Corporation (Representative Executive Officer, President: Kazuma Sekiya) and KOKUSAI ELECTRIC CORPORATION (President and CEO: Fumiyuki Kanai).

Title of the adopted project:

Research and Development of Beyond 2 nm Devices with High Energy Efficiency Through Integration of Front-End Process and Back-End Process

Summary of the adopted project:

Improving the energy efficiency of AI semiconductors, a fundamental technology in our digital society, has become a pressing priority. In response, 3D integration technology, which involves merging the front-end process of semiconductors and their back-end process, is now seen as an innovative solution. A backside power delivery network (BSPDN) is a representative architecture capable of effectively suppressing power voltage drops in semiconductor chips. However, it faces challenges in yield and heat dissipation, which require system technology co-optimization of each fundamental technology related to design, integration, and process to resolve. The aim of this research and development project is to propose and implement an innovative solution in partnership with semiconductor manufacturing equipment companies. This will be achieved by establishing an ecosystem-based collaborative R&D framework that integrates the front-end process and the back-end process while leveraging emerging 3D integration-related technologies.

Notes:

1. For more information on the Industry-Academia Collaboration (Stage II) of the A-STEP, please visit the A-STEP website provided by the JST using the following URL.
https://www.jst.go.jp/a-step/index.html

2. For more information on the projects adopted for the Industry-Academia Collaboration (Stage II) of the A-STEP, please visit the following URL.
https://www.jst.go.jp/pr/info/info1728/pdf/info1728.pdf