News Release

RESONAC

Resonac Holdings Corporation
Tokyo Shiodome Bldg., 1-9-1, Higashi-Shimbashi, Minato-ku, Tokyo 105-7325

July 16, 2025

Resonac Wins the 24th GSC Award's Minister of Economy, Trade and Industry Prize

~ High-Quality SiC Epitaxial Wafers for Power Semiconductors Recognized for Contribution to Carbon Neutrality ~

Resonac Corporation (President and CEO: Hidehito Takahashi, hereafter referred to as "Resonac") is pleased to announce that its high-quality SiC epitaxial wafers for power semiconductors have been awarded the prestigious Minister of Economy, Trade and Industry Prize at the 24th Green and Sustainable Chemistry (GSC) Awards organized by the Japan Association for Chemical Innovation (JACI). This award recognizes the significant societal value of the development and implementation of Resonac's high-quality SiC epitaxial wafers as industrial technology contributing to the realization of a carbon-neutral society.

As global warming and environmental issues continue to intensify, achieving carbon neutrality has become an urgent challenge worldwide. Advanced technological developments that accelerate the transformation of energy systems are in high demand, and SiC-based power semiconductors are gaining significant attention. Compared to conventional power semiconductors using silicon, SiC power semiconductors have superior characteristics, including higher voltage resistance, higher current capacity, high-temperature operation, and low energy loss, enabling enhanced energy efficiency.

Resonac has succeeded in developing and mass-producing high-quality SiC epitaxial wafers. Among these, the "Second-Generation High-Grade Epi (HGE-2G)" achieves a significant reduction in defect density compared to conventional products, enhancing the reliability of power semiconductors. This technology has been adopted for practical applications, such as high-current devices rated at 100A and power modules for automotives, receiving high acclaim globally. Furthermore, Resonac became the first in Japan to begin sample shipments of the 8-inch (200mm) SiC epitaxial wafer, accelerating the practical application of this technology even further.

[Features and Societal Value of the Award-Winning Technology]

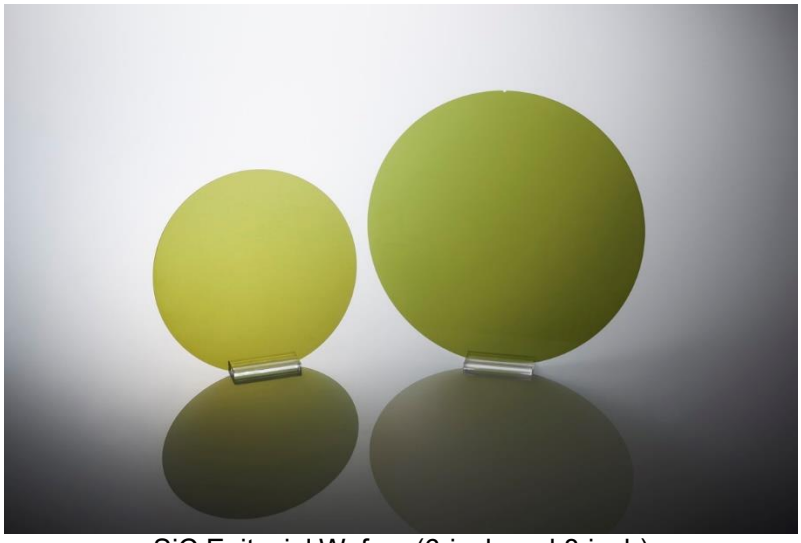
Contribution to Energy Transformation: High-quality SiC epitaxial wafers enable the production of SiC power semiconductors with high voltage resistance and high current capacity, supporting applications across various fields, including electric vehicles (EVs), renewable energy, railway systems, and power supplies for AI data centers.

Innovation and Technical Excellence: The development of "HGE-2G" and the manufacturing of 8-inch SiC epitaxial wafers leverage cutting-edge crystal growth processes, defect control technologies, AI-driven evaluation techniques, and innovative specialized equipment, ensuring superior mass production capability and reliability.

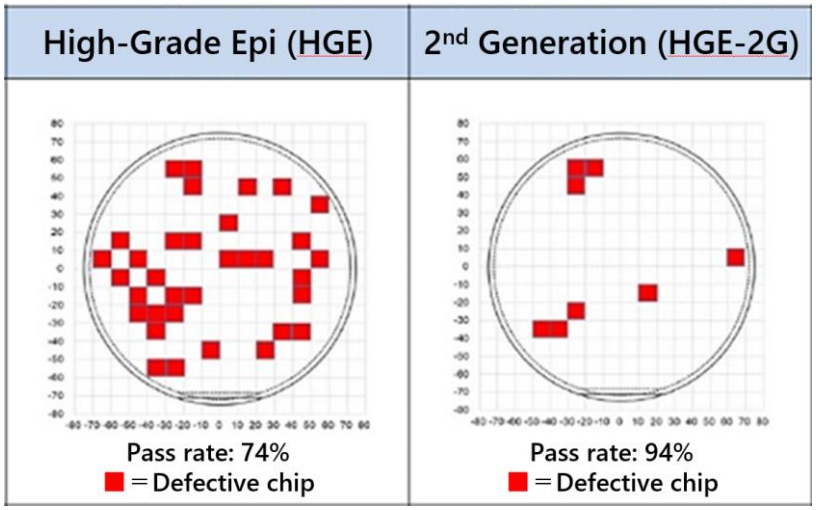
Decades of Research and Collaboration: These achievements are rooted in more than two decades of research and development since 1998, combined with a commitment to co-creation and open innovation to strengthen the technological foundation.

Resonac will continue to advance and implement technologies that contribute to the realization of a carbon-neutral society.

Awards Ceremony on 15 July, 2025



SiC Epitaxial Wafers (6-inch and 8-inch)



Example of Surface Defect Reduction in the Second-Generation High-Grade Epi (HGE-2G)

Notes:
SiC: A compound semiconductor composed of silicon (Si) and carbon (C).
SiC Epitaxial Wafer: A wafer with a high-quality SiC thin layer grown epitaxially on an SiC substrate using advanced growth techniques.
GSC Awards: The Green and Sustainable Chemistry Awards, organized annually by the JACI, honor technologies and products contributing to the realization of a sustainable society by reducing environmental impact and promoting societal implementation of new chemical innovations.

[About Resonac]
Resonac is a functional chemical company established as a result of the integration of Showa Denko and former Hitachi Chemical in January 2023. The Company's sales revenue of semiconductor and electronic materials business for 2024 was about 450 billion yen. The Company is a world-class leader particularly in semiconductor materials for packaging process. The integration of the two companies has enabled Resonac to design functions of materials as well as to develop them in-house, going all the way back to raw materials. The trade name "RESONAC" was created as a combination of two English words, namely, the word of "RESONATE" and "C" as the first letter of CHEMISTRY. The Company will make the most of its co-creative platform, and accelerate technological innovation with semiconductor manufacturers, material manufacturers, and equipment manufacturers inside and outside Japan. For details, please refer to our Website.
Resonac Holdings Corporation: https://www.resonac.com/