

March 23, 2023

## Resonac Starts Full-Scale Operation of Evaluation and Development Base to Innovate Materials for Power Modules

- For Contribution to the Electrification of Vehicles and Others through Co-Creation with External Parties -

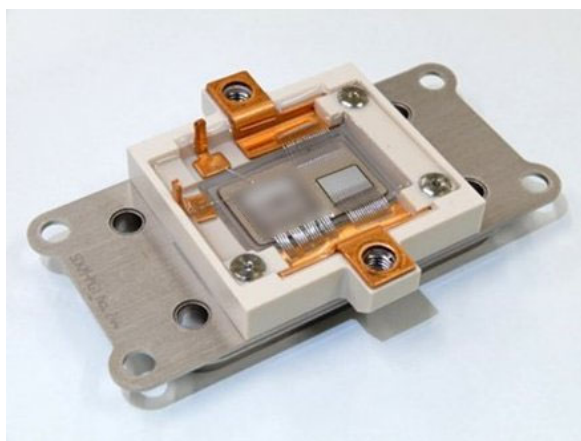
Resonac Corporation (TOKYO: 4004) (President: Hidehito Takahashi) is set to launch full-scale operation of Power Module Integration Center (“PMiC”), which is located at Oyama Plant in Tochigi Prefecture, to enhance development activity of materials for power semiconductor and its package, power module, which is indispensable component for vehicle electrification. So far, Resonac’s evaluation and simulation functions were for internal development activities. Hereafter, however, these functions will be used for co-creation activities with customers such as automakers and semiconductor manufacturers. Along with expansion of the EV market, thermal management techniques are becoming the more important. Resonac intends to set PMiC as a base to propose new materials for power modules.

PMiC is a research center which has equipment for prototype assembly, evaluation and simulation. Power modules and power semiconductor devices are essential components for vehicle electrification. However, they cause large amount of electrical loss and generate heat during operation inside power electronics systems. To extend the range of EV by increasing efficiency or not to cause overheating, it is important to reduce electrical loss and dissipate heat by improving performance of materials inside power module, which is difficult for automakers and semiconductor manufacturers to realize by themselves.

To propose appropriate materials to customers in a speedy manner, Resonac launched PMiC in July 2021, which can build prototype power modules by adopting various materials of Resonac, evaluate them under conditions similar to those set by our customers, give feedback to product development groups of each material. From this year, Resonac will start utilizing PMiC’s functions of prototype assembly, evaluation and testing for customers to co-create technological innovations tracing back to material development stage. Resonac will help customers to shorten their power module development periods with proposals derived

from evaluation of appropriate materials combination based on performance required from customers. In 2022, Resonac helped a customer to cut the number of prototype evaluation by half. Now Resonac aims to help the customer make their development lead time even shorter by 2025.

With the global expansion of xEV sales, by 2030, the size of the power module market is expected to grow to be 3.9 times of that of 2021<sup>\*1</sup>. In particular, the demand for power modules composed of SiC will expand. Resonac has 25%<sup>\*2</sup> share of global market for SiC epitaxial wafers and supplies a range of materials related to power modules, such as Cu sintering paste, thermal interface materials, molding compound, cooling devices, resin water jackets and heat-resistant coating materials. In addition, Resonac has accumulated expertise through many years of power module evaluation, and engineers who have experience of power module development in automotive device manufacturers have joined Resonac. Taking advantage of these features, Resonac will achieve further growth in expanding power module market.



Power module packaged in-house for the purpose of evaluation

<sup>\*1</sup> Source: “Automotive Power Module Market 2021” published on September 30, 2021 by Yano Research Institute Ltd.

<sup>\*2</sup> Estimation by Resonac.

#### [About Resonac Group]

The Resonac Group is a group of chemical companies that produces and sells products related to semiconductor and electronic materials, mobility, innovation enabling materials,

chemicals, etc. The Group has a wide variety of materials and advanced material technologies applicable to midstream to downstream of supply chains of various products. In January 2023, the Showa Denko Group and the Showa Denko Materials Group (former Hitachi Chemical Group) merged into the Resonac Group and made a start as a new corporate group. The new 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. As a “co-creative chemical company,” Resonac aims to continue growing and enhance its corporate value through co-creation. The Group recorded net sales of about 1,400 billion yen in 2022, and its overseas sales accounted for 56% of net sales. The Group has deployed production/sales bases in 22 countries and regions, and continues operating its business globally (as of January 2023).

For detail, please refer to our Website (<https://www.resonac.com/>).

For further information, contact:

Public Relations Group, Brand Communication Department (Phone: 81-3-5470-3235)

Resonac Holdings Corporation