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Initiative for a Total Solution that Realizes the Customer's Idea and Contributes to the Development of Society

1. Changes in social and market trends, and future expectations

The world is on the brink of a new era, which is marked by an increase in the amount of information recorded and accumulated about our daily consumption and work. By organizing this information, we are increasingly able to identify and resolve new problems. Based on these trends, we can expect that, in the future, never-before-seen services will be available and will contribute significantly to society.

Until now, various convenient services have been developed through the use of personal computers, mobile phones, and smartphones. This evolution in services is supported by information and communication technology, which is advancing very fast. Applications of this technology are not limited to the fields of information networks and cloud environments, but have expanded into the field of automobiles, industrial robots, and medicine, allowing new services to be created in wide industries. This trend is only just beginning and is expected to continue for a long time.

2. Hitachi Chemical's beginnings and our contribution to the development of new industries

In the late 1940s, Bell Laboratories invented the point-contact transistor. This was followed by the invention of the integrated circuit (IC) in the latter half of the 1950s. These developments led to the rapid growth of the semiconductor industry all around the world, bringing new prosperity to people's lives.

Hitachi, Ltd. was established in 1912 and now more than 50 years passes since establishment of Hitachi Chemical as an independent entity separate from Hitachi, Ltd. in 1962; we have produced insulating varnishes for motors, industrial laminates for PWB, porcelain insulators, and carbon brushes. We also expanded upon these products to create many new products through R&D and manufacturing. Throughout our company's history, we have created many products that support the current ICT industry, such as CMP slurries used to form circuits on semiconductor wafers, die attach film used to protect and fix wafers on which circuits have been formed, and epoxy molding compounds for semiconductors and package substrates. The materials, processes, and evaluation techniques that we have cultivated along the way continue to contribute to the high integration and miniaturization of semiconductors even today.

3. Total solutions to help customers realize their ideas

The mission of the Hitachi Chemical Group is to contribute to society through the development of superior technologies and products. Our company aims to achieve sustainable growth by resolving new social issues and by continuing to provide new value to society. We believe that the key to accomplishing this is information. For example, we



consider information (such as information on global climate change, market and consumer trends, global distribution and transportation networks, and the health management and productivity of employees) to be the starting point for identifying and understanding social issues. If we can create a mechanism for collecting, managing, and analyzing such information—a mechanism that leads to risk mitigation and issue resolution—we believe that businesses can contribute to the advancement of society. As you know, the development of next-generation technologies for wireless communication (such as IoT and 5G technology) has brought about significant changes in the processes of information collection, management, and analysis. For these technologies to be broadly adopted by society, extensive software programs are required, in addition to semiconductor devices and other hardware. Other key factors are how to combine hardware and software, how to design complex systems to make them user friendly, and how to link these systems to excellent services in a timely manner.

In particular, when working on a development project in a customer, it is imperative that customers not only assemble specific hardware devices, but also build advanced software and systems and create products and services of superior design before any of competitors. As a result, such development projects require larger budgets and more labor hours, due to the increasing number of products to be developed and the increasing complexity of process management with respect to the mounting of semiconductors. In actuality, even if a customer comes up with an idea for a product they want or something they want to try out within the allotted time or budget, oftentimes the idea cannot be acted on immediately.

When a customer wants to carry out an idea, in addition to having an understanding of the customer's actual development site, we must also (1) clearly define the required tasks, (2) have access to the necessary technology, and (3) have somewhere to conduct the necessary studies. Furthermore, we must put forth proposals for total solutions that resolve issues at the customer's development site and that can be feasibly accomplished within a short period. These proposals should make use of our proprietary processes, parts, and materials technologies, and can include collaborative efforts with other companies that have outstanding technologies.

This issue of *Hitachi Chemical Technical Report* introduces in detail our efforts in relation to the above and aims to give all of our stakeholders an idea of Hitachi Chemical's future business development.

4. Future prospects

As was stated earlier, our mission is to provide new value that is ahead of the times, and to contribute to the advancement of society. Going forward, the Hitachi Chemical Group will collectively work toward growth as a corporate group that contributes to society under the Hitachi Founding Spirit, which values pioneering spirit, sincerity, and harmony. To this end, we will effectively deploy our management resources worldwide; implement management that allows us to resolve issues spanning multiple business areas; foster professional human resources; and build a network of knowledge that goes beyond the scope of our company.