

## Contribution through Core Business

# Improve Production Technologies and Efficiency

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## Improving Production Efficiency through Global Coordination and Automation

At the RIKEN TECHNOS Group, we are reinforcing initiatives related to the “RIKEN Standard,”\* the foundation of our manufacturing. These initiatives seek to create a deeper understanding of the standard in our sites around the world, improve our manufacturing and quality, share manufacturing-related issues at a global level, and solve them Group-wide.

In Japan, we actively promote the introduction of automated equipment and predictive management systems for dealing with equipment failures, along with deliberations regarding the rebuilding of our factory utilities equipment. Regarding the processes that are the key to our manufacturing, to further improve our quality and reduce our manufacturing costs, we are deeply exploring production technologies through collaborations with other companies and academia. We are also accelerating our efforts to define optimal production conditions using process informatics (PI).

\* RIKEN Standard is the RIKEN TECHNOS Group's global process guidelines for manufacturing. With the expansion of business to overseas locations, the previous manufacturing process guidelines—which focused on Japan—were revised to be applicable at the global level.



## Centralized Management of Production Information and Visualization Using Business Intelligence Tools

We share issues and information regarding the Group's manufacturing and undertake activities for further overall optimization.

Putting in place an open network infrastructure and a data structure platform that is conducive to the use of the Internet of Things (IoT), we collect and manage the diverse and enormous data that exists in our production frontlines, such as production status, results of tasks, and logs generated by production equipment at the global level, including Japan.

We built a structure that allows production managers to quickly understand the situation by achieving centralized management of data on indicators necessary for production information and constant visualization of such data using business intelligence (BI) tools. The centralized management of data also allowed integration of ledgers and speedy creation of reports.

Going forward, we will also achieve optimization of



design and production operations through linking the data of design and production frontlines, and promote the passing down of skills that capture the knowledge of experts through digitalization.

## Mixing and Kneading Technology

Through our multi-material morphology control and reaction reforming technologies, we are meeting growing needs for high-performance materials. To enhance the suitability of processing by customers, we provide compounds with the optimal kneading conditions. We also leverage the technologies we have developed through our many years to provide recommendations regarding optimal molding conditions and solutions to problems customers face related to molding defects. These production and processing technologies have been passed on to the production sites of our overseas consolidated subsidiaries.

## Film Manufacturing and Processing Technology

Our film manufacturing technology processing thermoplastic resins achieve film surfaces that are extraordinarily homogeneous, with extremely stable quality. Our technological capabilities are also applicable at the global level. Also, our wide variety of laminating technologies can be used to laminate films with different properties. Coatings can be applied to reform film surfaces, and our coatings can be used to produce films ranging from general-purpose products to high-precision items. Through our continued exploration of the joint possibilities of film manufacturing, lamination, and coating technologies, we can deliver high-value-added functional films.



## Comments from the Production Floor

**Shinya Kataoka** Compound Production Department

Through the use of BI tools, it is now possible to search through several types of information at once, something that could not be done in the past. We are able to reduce the day-to-day working time required for analysis of information.

Besides the status of production, it is also possible to see quality control information. Therefore, in the pre-production stage, these tools can be used when studying and developing measures to prevent reoccurrences with reference to cautionary areas during production and cases of past problems, helping to reduce abnormalities in our processes.

I hope to continue to use BI tools in activities for further improvements in the future.

