

# Improve Production Technologies and Efficiency

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Manufacturing Division

## Improving Production Efficiency through Global Coordination and Automation

We have launched 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 will 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. We are focusing on the processes that are the key to our manufacturing and 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). Through these initiatives, we aim to further improve our quality and reduce our manufacturing costs.



## Standardization of Equipment Management

One of the major contributors to the decline of production efficiency levels is having to shut down production lines due to equipment failures. We are standardizing equipment management to achieve our goal of having zero serious equipment failures.

With regard to the standardization of equipment management, based on our policy of total productive maintenance (TPM), we have organized our approaches to corrective maintenance and preventive maintenance and carried out a full revision of our equipment inspection items. We have set monitoring inspection as a daily inspection item, performance retention inspection as a weekly inspection item, and inspection of performance retention, trend management, and change management as a monthly inspection item. We have also defined appropriate status ranges for normal

operation for each item of equipment. Sensors have been installed at points where daily inspections are performed to monitor the status of equipment. This will enable us to reduce the workload placed on operators by revising the frequency of inspections and improving efficiency. It will also help address the issue of production efficiency declines due to equipment operation being suspended to perform inspections. Going forward, we will collect and accumulate status data from equipment that is in operation, focusing on



**Comments from the Production Floor**

**Hiroshi Ito**  
Compound Production Section  
Mie Factory



Deploying sensing technologies has made it possible to notice even tiny changes in equipment conditions. Not only can we gather the latest information at all times through real-time monitoring, but this information can be easily checked by anyone, even someone without work experience, so we can feel secure carrying out production. It has also reduced the amount of time that needs to be spent on confirmation work like inspections and improved work efficiency.

monthly inspection points, and identify appropriate control ranges while at the same time expanding operation ranges. In addition, we will gradually step up our automation and labor-saving efforts in each production process.

## Mixing and Kneading Technology

Through our multi-material morphology control and reaction reforming technologies, we are meeting growing needs for high-performance materials. We supply compounds kneaded into optimal condition to improve customer-side processing. 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 our production sites around the world.

## Film manufacturing and processing Technology

The film manufacturing technology used in our thermoplastic resins is world-class, and the surfaces of our films are extraordinarily homogenous, with extremely stable quality. 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.

