

Research and Development



Murooran Research Laboratory



Hiroshima Research Laboratory



Yokohama Research Laboratory

Research and development activities were almost entirely funded by the Company during fiscal 2013. Combined spending on research and development for the Steel and Energy Products Business and the Industrial Machinery Products Business amounted to ¥3,836 million (US\$37 million).

As a materials and mechatronics company, we strive to innovate products and production techniques while also engaging in diverse technical alliances and joint development to deploy new offerings as quickly as possible.

Our Research and Development Headquarters collaborates with business divisions to 1) improve the capabilities, performance, and reliability of core products; and 2) develop offerings in new business fields based on core and differentiated technologies.

The Research and Development Headquarters is based at our head office, and the Murooran, Hiroshima, and Yokohama research laboratories are located at the Murooran, Hiroshima, and Yokohama plants, respectively. (The Yokohama Research Laboratory commenced operations on April 1, 2014, upon the closure of the Yokohama Research & Development Center.)

Basic Research and Development Policy

We develop new products and businesses by focusing on new energy and energy savings, information and telecommunications, nanotechnology and materials, and new production technologies, which relate directly to existing businesses. We have increased collaboration between the Research and Development Headquarters and business divisions, and aim to cultivate existing business by expanding and upgrading core technologies.

We engage in basic research for future technologies and contemporary social needs and in researching component technologies for existing products. We will build on these efforts to undertake R&D projects that create new products and businesses and pursue innovations for existing products.

In Steel Products, we emphasize advances in energy and creating even more industry-leading offerings while commercializing new areas. The focuses in Machinery Products are to enhance plastics machinery, IT equipment, and other industrial machinery. We will allocate significant resources to such machinery by clarifying that our commercialization framework is open to mergers and acquisitions and alliances.

Activities by Business Segment

Steel and Energy Products Business

Product development centers on materials, notably for clad steel pipes for natural gas transportation, large steel castings, and forgings and high alloys for high-efficiency thermal power generation, forged steel products for advanced nuclear power plants, and high-performance nonferrous alloys, as well as manufacturing process technology development. We improve materials and component technologies for existing products. In the renewables arena,

we develop material and component technologies to create lighter and more reliable pressure accumulators for hydrogen fueling stations. We create analytical technologies and enhance component technologies to improve the reliability of wind power plants.

Segment R&D spending totaled ¥1,360 million (US\$13 million) in fiscal 2013.

Industrial Machinery Products Business

We develop low-cost production technologies for high-performance magnesium alloy injection molding machines. We develop dampers

complying with European specifications and improve technologies for plastic extruders and injection molding machines. We develop advanced micro-nano melt transcription molding machines and create advanced compressors and equipment for film-making machines. We also develop laser annealing systems for thin-film transistor liquid crystal display production and other applications for laser devices. Our work also encompasses chemical vapor deposition and plasma systems.

R&D spending in this segment was ¥2,476 million (US\$24 million) in fiscal 2013.

