

R&D Activities and Intellectual Property Strategies

Constantly targeting new value creation, the Sumitomo Rubber Group engages proactively in research and development (R&D). In addition to these efforts, the Group preserves the fruits of its research as intellectual property and has established structures to fully capitalize on its intellectual property rights.

R&D Activities

With the Sumitomo Rubber Industries' R&D organization and facilities as its core, the Sumitomo Rubber Group promotes R&D activities in wide-ranging fields—the Tire, Sports, Industrial and Other Product businesses—in close cooperation with its subsidiaries and affiliates around the world.

Total R&D expenses in the fiscal year under review amounted to ¥23.4 billion, equivalent to 2.8% of consolidated net sales.

Tire Business

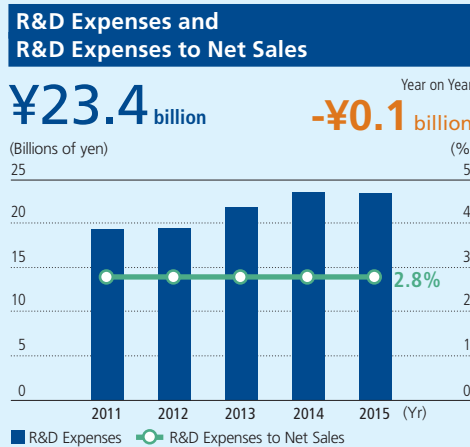
In fiscal 2015, the Company unveiled a concept tire created using its new ADVANCED 4D NANO DESIGN technology, which it aims to use in the development of products to be released in fiscal 2016 and

beyond. We have also begun work on the basic framework for NEXT 4D NANO DESIGN, a technology capable of large-scale simulations covering all stages from raw material development to tire performance, with fiscal 2020 set as the target year.

In addition, we have developed the airless tire technology GYROBLADE, which renders a tire immune to flats, and the sealant tire technology CORESEAL, which prevents air from leaking when the tread is damaged. We are working to lower the environmental burden by making spare tires unnecessary.

In material development, we have turned our attention to the Russian dandelion as a new source of natural rubber. We have begun joint research with the U.S. venture company Kultevat to conduct feasibility studies on commercialization.

In fiscal 2015, R&D expenses in the Tire business totaled ¥19.9 billion.



Sports Business

With R&D sections placed at both Dunlop Sports and Cleveland Golf Company Inc., Dunlop Sports pursues the development, evaluation and verification of new technologies and products, employing cutting-edge computer simulations. Reflecting these activities, during fiscal 2015, Dunlop Sports developed such products as the XXIO9 golf club. R&D expenses in the Sports business amounted ¥1.6 billion.

Industrial and Other Products Business

Sumitomo Rubber Industries develops products that meet consumer needs in all its product fields. In the field of medical rubber parts, the Company acquired the Switzerland-based Lonstroff Holding AG, which specializes in medical rubber parts, in January 2015 in addition to



Tyre Technical Center
Equipped with state-of-the-art testing and measuring machines, the Tyre Technical Center is the Group's main tire R&D facility.



The K computer
To further the advancement of new material development technology aimed at creating high-performance and quality tires, the Company utilizes the K computer, one of the world's most powerful supercomputers.

Photo provided by RIKEN

promoting the development of highly functional products. R&D expenses in the Industrial and Other Products business were ¥1.9 billion.

Intellectual Property Strategies Basic Policy

The Sumitomo Rubber Group proactively carries out intellectual property activities that support its businesses. The Group has set forth a basic policy with regard to such activities in accordance with VISION 2020, a long-term vision established in 2012.

Specifically, the Group undertakes intellectual property activities focusing on three pillars, namely: 1) securing intellectual property rights with regard to such industrial properties as patents, utility models, designs and trademarks; 2) exercising such rights against the infringement of the Group's intellectual properties; and 3) eliminating risk by developing a structure to protect the Group's rights from violation by third parties.

Current Status of Basic Policy Implementation

The current status of the basic policy is as presented below. Thanks to the success of intellectual property training for employees and the introduction of a structure that connects technological development to patent application, Sumitomo Rubber Industries has successfully accumulated an even greater number of patents with significant business potential.

The Group seeks to effectively utilize the intellectual property rights that it has acquired, defending such rights against infringement worldwide. For example, in Europe the Group diligently files litigation against infringement while in Asia it is strengthening cooperation with national administrative bodies to ensure that products that infringe on the Group's rights, including imitations and copies, are seized by customs or, when possible, their production sites are identified and dealt with. To secure the competitive advantage of its products and earn greater trust, the Sumitomo Rubber Group will constantly reinforce the structure it has built to ensure the protection of its intellectual property rights against such infringement.

Responding to Globalization

In step with the rapid expansion of its overseas operations, the scope of the Sumitomo Rubber Group's intellectual property activities is growing worldwide, encompassing not only Japan but also the United States, Europe and such Asian countries as China as well as Russia and countries in South America, the Middle East and Africa.

Reflecting this, efforts are now under way to nurture human resources and reinforce our structure for handling intellectual properties. In particular, the Group is providing training sessions not only for Intellectual Property department members but also for employees at every operational base with the aim of upgrading the competencies of the entire workforce. Such action is facilitating the development of a structure that ensures intellectual property activities are carried out smoothly and seamlessly on a Groupwide basis.

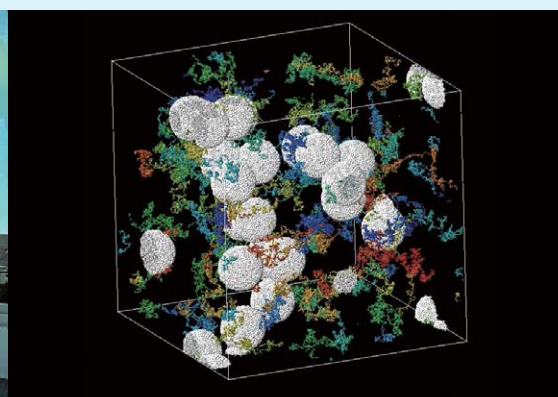
To reinforce the intellectual property structure, it is essential to cooperate with such external organizations as legal firms, patent offices, patent agents, research agencies and administrative bodies in Japan and overseas. With the aim of strengthening the connections between the Group and these organizations as well as across-the-board communication, the Sumitomo Rubber Group implements projects that involve internal and external collaborations.

Moreover, the Group renewed its in-house Intellectual Property Management System while reorganizing its relevant departments, with the aim of improving operational efficiencies and ensuring that information is shared globally. Through the renewal and reorganization, the Group established a network that connects all of its operational bases and agencies around the world. These actions also facilitated a switchover from paper-based to paperless operations that utilize a workflow system and database, significantly accelerating the Group's operations with regard to intellectual property rights and enhancing the system's security.

Focusing on the abovementioned three pillars, the Group will promote the more efficient implementation of intellectual property activities encompassing all regions worldwide.



Inside-Drum Testing Machine
A machine that monitors the key performance metrics of tires when cornering on dry, wet or icy roads



A computer simulation showing a molecular-level view of the principal constituents of tires
(gray: silica particles*; color: partially rendered polymers)
* A filling material being compounded to enhance the strength of the rubber (particles approximately 10-20nm in diameter)



Golf Science Center (Japan)
With the ability to comprehensively measure, analyze and evaluate golf equipment, our Golf Science Centers boast a wealth of data covering wide-ranging subjects, including the relationships between the golf swing forms of various golfers and such equipment as clubs and balls.