# **Undertaking R&D Activities Directly Linked to Hitachi Cable's Businesses**

The Hitachi Cable Group aggressively promotes R&D based on core technologies that empower energy and communication. Our R&D activities underpin the Group's capabilities in accurately accommodating everdiversifying customer needs.

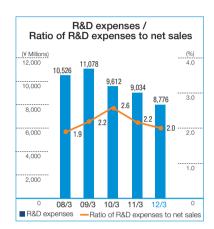
The Corporate Advanced Technology Group leads the Group's R&D activities with the support of the Research & Development Laboratory and research & development departments of individual business groups. Through collaboration among these organizations, we work to grasp real-time trends in markets and technologies, both in Japan and overseas, while enhancing the capabilities of our R&D personnel. In this way, we are efficiently advancing strategic R&D for products and technologies in

order to consistently stay ahead of the times.

The Technology Planning Center in the Advanced Technology Development Group formulates R&D strategies, taking into consideration flexible options such as cooperation with outside parties. The Research & Development Laboratory conducts practical operations in line with these strategies by developing technologies and products. The development sections in individual business groups also work to develop products directly related to their businesses in partnership with the Advanced Technology Development Group.

Regarding intellectual property, we focus on acquiring patents for products and technologies in priority target areas while redoubling our patent application efforts overseas in response to business globalization. The number of patent applications\* filed in fiscal 2011 was 566 in Japan and 275\* overseas.

\*Includes extensions and new applications.



## ■ R&D Results for the Year Ended March 31, 2012

The following section reviews R&D results and achievements by segment for the reporting term. On a consolidated basis, our R&D expenses totaled ¥8,776 million, and the ratio of R&D expenses to net sales stood at 2.0%.

## Industrial Infrastructure Products

This segment undertakes R&D for: (1) wires and cables for industrial applications; and (2) transmission and connection technologies relating to telecommunication cables and optical fibers. R&D expenses in this segment totaled ¥1,538 million.

#### R&D Achievements during Reporting Term

- Development of special halogen-free, high-pressure wires used in railway vehicles
- 2. Development of Flex Power Cables, which feature superior flexibility
- 3. Development of low-friction, external damage-resistant, halogen-free multipoint Cat.5eLAN cables

## **Electronic & Automotive Products**

This segment undertakes R&D for: (1) wires and cables for electronic devices; (2) electronic devices; (3) transmission and connection technologies relating to magnet wires; and (4) brake hoses and other parts and components for automotive use. R&D expenses in this segment totaled  $\pm 1,003$  million.

#### R&D Achievements during Reporting Term

- 1. Development of high-speed transmission copper cable
- 2. Development of optical HDMI cable
- \* HDMI is a registered trademark of HDMI Licensing, LLC.

## Information Systems Devices & Materials

This segment promotes R&D in such areas as: (1) information network devices; (2) mobile photo base station antennas; and (3) compound semiconductors. Segment R&D expenses amounted to ¥4,329 million.

## R&D Achievements during Reporting Term

- 1. Development of BFS functions for APRESIA 15000 series
- 2. Release of APRESIA 1601-2XL
- 3. Development of highly foamed polyethylene dielectric corrugated coaxial cable with an aluminum outer conductor

## Metal Materials & Component Products

This segment conducts R&D for: (1) copper strips for electronic parts and components; (2) lead frames; (3) TAB; (4) fabricated copper products; and (5) superconducting wires. Segment R&D expenses totaled ¥1,906 million.

#### R&D Achievements during Reporting Term

Development of copper alloy sputtering target materials for LCD panels and touch panel wiring