

## Research and Development

### Lion's R&D Policy and Core Technologies

Lion's R&D divisions have selected strategic themes that will contribute to attaining the objectives of "Vision 2020." As these divisions tackle the challenges of meeting high R&D objectives and developing new technologies, they are proceeding with technological innovation and development of new products.

Lion's core technologies encompass four fields: namely, oral care science, surface science, life science, and materials science. The fields where Lion has the longest history of its R&D are oral care science and surface science.

In the field of surface science, Lion has conducted R&D activities for more than 120 years and has led the field as a pioneer in developing new detergents and related products. In recent years, to respond to the need for eco-friendly products, Lion has developed plant-based surfactants derived from palm oil. These surfactants have drawn worldwide attention because of their detergency and biodegradability. In addition, Lion is working aggressively and steadily on a day-by-day basis on the development of laundry technologies of the future that will not necessarily require the use of surfactants.

In the field of oral care science, Lion is building on its R&D findings that have been accumulated over a period of more than 100 years and is working with outside R&D institutions and others to clarify the effects that the intraoral environment has on the health of the whole body. Lion is also combining

a broad range of in-house and outside technologies, primarily together with oral care science technologies, to create new value-added products in many fields, ranging from oral care products to food products and pharmaceuticals.

### Lion's R&D Organization

Lion's Development Research Laboratories includes laboratories that are focusing on the development of oral care, fabric care, pharmaceutical, and other products. These laboratories work closely with Lion's product planning divisions to move ahead together for the development of new products.

Lion's Applied Research Laboratories works to discover the buds for new technologies and materials through the use of surface science, life science, and other scientific knowledge, and then conducts research to apply these findings to product development.

The Research Supporting Laboratories provides support to the two laboratory divisions mentioned previously by making assessments of the safety of products vis-à-vis the human body and the natural environment as well as conducting research that makes use of cutting-edge qualitative and quantitative analytic technologies. It is also responsible for enhancing product value added by developing technologies related to fragrances, flavors, and packaging. The Production Engineering Research Center also provides support by developing manufacturing technologies that link R&D results to commercial production.

### R&D Center Redevelopment Concept and Implementation of Phase II



Under Phase II of Lion's R&D center redevelopment plan, which aims to strengthen Lion's knowledge about R&D and production technologies as well as strengthen consumer research, new R&D facilities are scheduled to open in 2013. The redevelopment concept will go beyond integrating Lion's various laboratories and will include promoting interchange among Lion's R&D laboratories, closer collaboration with Lion Group R&D centers in Asia, maximizing synergies throughout the Lion Group, and speeding up R&D activities.