

Developing the Next Growth Business

We are exploiting the full value of our technical resources (eg: sintered metal bearing, automatic manufacturing systems) across a wider range of products, as we preserve technical/product competitiveness by enforcing legitimate patent rights in Japanese and international markets.

TECHNOLOGY THROUGH RESEARCH

Nidec rose to prominence in its core markets of small and miniature motors for HDDs and optical drives on the strength of its technological superiority. Nidec's corporate culture respects original technology, and the entire group is oriented toward application of technology for the creation of higher added value. Nidec is enhancing collective efforts in its R&D on a group-wide basis to merge and share technology of newly acquired companies for the development of new products. The Central Technical Laboratory at the Kyoto headquarters is the center of Nidec's comprehensive R&D activities. The Motor Engineering Research Laboratory within our Tokyo Office pursues basic motor research to build a technology foundation to support and guide our motor-related business far into the future.

The Future of Motors

The Motor Engineering Research Laboratory is headed by one of the world's most distinguished researchers in motor technology, Mr. T. Kenjo. Here, in his words is a look at some of the possibilities in Nidec's (and your) future.



We expect that the demand for motors will continue to grow, especially for automotive use, home automation, robots and medical applications. To keep up, we feel that key innovations must take place in at least two areas: wireless control technology and tribology (the interaction of surfaces).

We particularly believe that future robotic development will depend on novel motor configurations, and we see the key technologies as new materials, tribology and wireless control. Just to control a robotic hand (i.e., the wrist and fingers) typically requires at least 10 motors. Thus, the growth in robot applications will spur demand for motors of many types. Polymer actuators are an example of a flexible material for robotic applications, based on ion-conduction. This is interesting from the viewpoint of motor science as it represents a paradigm shift from physical principles to electrochemical principles. Beyond that lies motors designed on biochemical principles as well.

Besides robot actuation, we are also looking at new motor configurations for, real-time automobile headlamp control and office equipment functionality. Another example is motors supported by other motors, such as a gear change mechanism implemented by assisting motors. A third promising area is "motors within motors": Incorporating an ultrasonic motor into a regular electric motor to modify the magnet arrangements and vary the motor's torque-speed characteristics (motor with self-adjusting characteristics). It is an exciting time to be in this field, with so much coming together for new applications.



Nidec's technical superiority increases sales and profit margins. R&D is the heart of our business



← Acoustic/vibration computer analysis is an essential inspection process employed to assure high performance and product consistency.



← Acoustical testing in an anechoic room captures the precise sound signature of a product and helps us identify and reduce noise.

