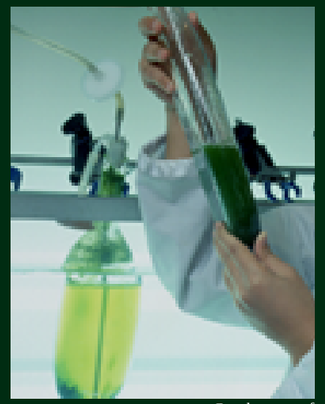
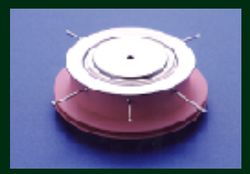
Pursuing innovative technologies for the customer's benefit and the Company's future



Development of soil decontamination technologies

Reserch on SiC inverter

Biosensors for cadmium



Two Overriding Aims

In conjunction with its quest to carry out its corporate social responsibilities apropos to safety assurance and stable power provision, Kansai EP accords the highest priority to research and development. R&D programs at Kansai EP have two focal points: to provide products and services conducive to fostering customer satisfaction, and to achieve breakthroughs that will contribute to the Company's future business operations. Here, we introduce a sampling of some of our recent achievements in R&D.

Technologies to Protect the Earth's Environment

Among an abundant array of initiatives directed at protecting the global environment, Kansai EP is conducting ongoing research and development of chemical absorption methods for recovering CO_2 by means of chemical absorbents. The related separation and recovery technologies have already been achieved, and the results of this research program have been acknowledged in the form of patents awarded to Kansai EP not only in Japan but also in the United States, Europe and Asia. Today, our technologies in this field have already been adopted in a urea production plant in Malaysia.

The Company is also actively engaged in the development of soil decontamination technologies employing biotechnologies. We are presently undertaking research into soil remediation technologies and into biosensors for measuring heavy metals, dioxins and other environmentally detrimental substances.

Next-Generation Semiconductor Elements

Today, Kansai EP is making steady progress in developing silicon carbide (SiC) diodes, next-generation power semiconductor elements that are expected to enable major reductions in power loss. In contrast to conventional silicon elements that are vulnerable to significant power loss during current flow, etc., and whose crystals break easily under high voltages, SiC diodes are revolutionary in their ability to reduce power loss substantially. We have already succeeded in developing 100kVA inverters using SiC diodes, and once they shift into commercial production and supersede today's Si inverters, power loss is expected to be curbed by more than 50%. In that way, SiC diodes are projected to make a dramatic contribution to energy savings throughout the industrial sector.

Kansai EP undertakes a broad palette of R&D projects all targeting innovations with tangible benefits to customers and potential to become corporate growth drivers.

High-Efficiency Fuel Cells

Solid oxide fuel cells (SOFC) are garnering attention today as an epochmaking new technology offering excellent characteristics in generation efficiency, stability and environmental friendliness. At Kansai EP, we are engaged in research into intermediate-temperature SOFCs, and we have already succeeded in developing fuel cells boasting high power density as well as an SOFC-based power-generating system. These breakthroughs are integral to our pursuit of commercial production of power systems of low cost and compact size.

Water Heaters for Home Use

As part of the Company's quest to develop products promoting the efficient use of electric power, Kansai EP is presently engaged in the development of electric heat-pump water heaters, known as "Eco Cute" systems, employing a natural refrigerant (CO_2). The new systems offer superlative benefits with respect to environmental compatibility, energy conservation and economical operation.

Representative Eco Cute systems already developed include multifunction systems permitting combination with features such as floor heating or bathroom drying, and compact systems suited to installations in private homes and communal housing in urban locations.

Fundamental Research on SOFC Materials