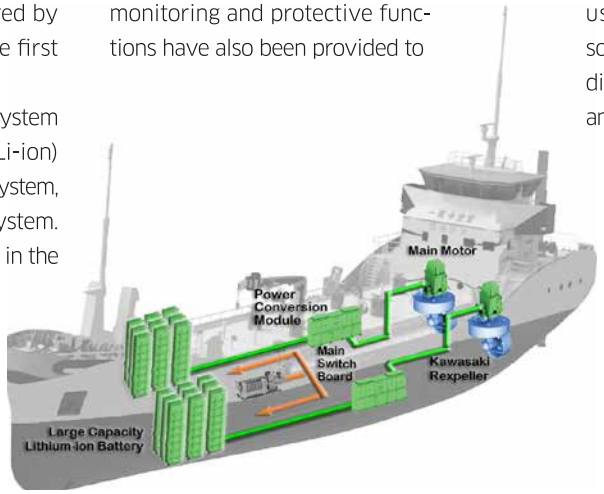
Kawasaki Receives First Order for Coastal Ship Large-capacity-battery Propulsion Systems

In October, Kawasaki received an order for large-capacity-battery propulsion systems designed for use in coastal vessels. The systems will be used on two zero-emission electrically propelled tankers*1 ordered by Asahi Tanker Co., Ltd., and will be the first ships of their kind worldwide.

Each Kawasaki battery propulsion system includes large-capacity lithium ion (Li-ion) marine batteries, a propulsion control system, and an electric power management system. Kawasaki made full use of its expertise in the field of systems integration to realize a system that efficiently supplies power and electricity to the main propulsion system and auxiliary equipment. Irregularity monitoring and protective functions have also been provided to safeguard the entire system, including the Li-ion batteries. In addition, Kawasaki utilized their electric power system experience in the generator field to make this system also usable as an emergency power supply source*2 in the event of a large-scale natural disaster, thus providing support for business and daily life continuity plans.



Large-capacity-battery propulsion system to be used on the world's first zero-emission electrically propelled tankers (major component diagram)

*1 Zero-emission electrically propelled tankers planned and designed by e5 Lab Inc. for purposes of developing similar ships and promoting their widespread use. These two vessels in particular are slated for use in ship refueling operations within Tokyo Bay. The ships will be built by KOA SANGYO CO., LTD. and IMURA SHIPYARD CO., LTD.
*2 This idea was originally proposed by e5 Lab and Asahi Tanker.

SEPERNA is Kawasaki's New Ventilation System Using Gas-Permeable Membrance Technology

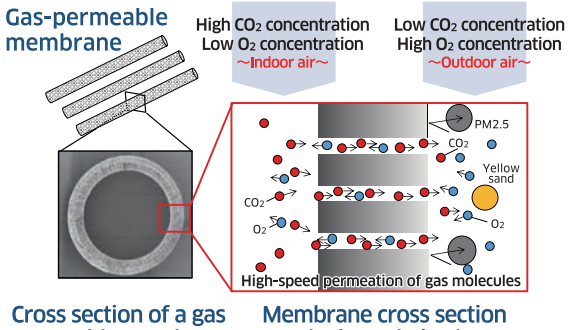
Kawasaki has developed a new ventilation system, SEPERNA®*, which uses gas-permeable membrane technology to create a comfortable indoor environment for office buildings and other similar areas. Through the use of a demonstration machine, the system has been shown to have excellent air purification performance.

Using a gas-permeable membrane with micropores several times larger than the diameter of gas molecules, SEPERNA succeeded in releasing indoor carbon dioxide outdoors without the use of the filters that are essential for conventional ventilation systems, and without allowing outside airborne particles to come indoors. In addition, by utilizing air with appropriate temperature and humidity, the power consumption required to control the temperature and humidity of the ventilated air can be reduced. It is also expected to be effective in eliminating aerosolized droplets.

The effectiveness of the system will be verified by the SEPERNA demonstration machine. At the same time, Kawasaki will continue research and development to further improve the performance of this gas-permeable membrane. The goal is to miniaturize the equipment, in order to apply it not only in office and commercial buildings, but also in a wide range of environments such as houses, hotels, and transportation facilities, including passenger ships.

* The system was named by combining the first letters of SEparation, PERmeation, and NAtural, the words associated with the concept of advanced air cleaning using a gas-permeable membrane.

New ventilation system using a gas-permeable membrane
(Demonstration machine)



Mechanism of air purification using a gas-permeable membrane
(Simplified images)

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