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**-- Most Up-to-date Innovations That Change Society --
47th Annual JCIA Technology Award Winners Announced**

Japan Chemical Industry Association (JCIA, Chairman: Yoshimitsu Kobayashi, Chairman of Mitsubishi Chemical Holdings) has announced the winners of its 47th Annual Technology Awards for innovative scientific technologies and products that have substantially contributed to the development of not only the chemical industry but also the society as a whole as well as to the improvement of the environment.

The “JCIA Technology Award” was established in 1968 for the progress and improvement of scientific technologies. Currently, the award comprises of “Grand Prize,” “Special Technology Prize,” and “Environmental Technology Prize.” From this year’s fourteen nominees, JCIA’s Technology Committee selected the following three winners:

Grand Prize (For contributing to the progress of scientific technology by enhancing an original technology to create a highly functional industrial technology)

FUJIFILM Corporation

“Negative tone development Process using organic solvent to Produce Semiconductors”

For the further refinement of semiconductors that are indispensable to produce high-performance smartphones and tablet terminals, the company developed a “negative tone development process (NTD process)” using photoresists and developers exclusively for renovating the manufacturing process of semiconductors. Therefore, it has become possible for the first time to resolve the 32 nm groove pattern by exposure to argon fluoride. As the technology covers the delay of development of extreme ultraviolet exposure technology, which is regarded as the key technology of next generation, it has already been adopted by many leading semiconductor manufacturers and is expected to make substantial contributions to the realization of the future smart society.

Special Technology Prize (For contributing to the progress of scientific technology with an original/improved technology)

TAIYO NIPPON SANSO CORPORATION

“Business Expansion through the Establishment of Technology to Isolate Oxygen-18 Isotope and Its Commercialization”

Because of an increase in number of cases of cancer diagnosed in Japan and abroad with positron emission tomography using fludeoxyglucose (which is said to be effective for the early discovery of cancer), demand for oxygen-18 isotope labeled water has been increasing as it is the material used for the test drug. For the first time, the company has developed a mass production technology to produce oxygen-18 isotope, a material of water-¹⁸ O by a process that combines oxygen distillation and isotope scrambling (recombination of atoms among oxygen molecules). With this technology, the company supplies inexpensive, and high-quality water-¹⁸ O in a stable manner. It is forecasted that the product will be expanded for the diagnoses of Alzheimer’s disease and heart diseases, which would expand the market further.

Environmental Technology Prize (For contributing to the progress of scientific technology with outstanding efforts to reduce environmental burdens through an original/improved technology)

Lion Corporation and FUJI ELECTRIC CO., LTD.

“The World’s First Development of Palm Fatty Acid Ester Electric as Insulating Oil”

Insulation in the transformer and electric insulating oil for cooling were traditionally derived from fossil resources. However, these companies have succeeded in developing plant-derived electric insulating oil, which is superior in cooling performance, insulating proof strength, and oxidation stability, because of the structural design at the molecular level. This electric insulating oil is highly biodegradable with minimal toxic effects on the natural environment. Moreover, since it is derived from a plant, it contributes to the reduction of CO₂ emission and the improvement of the environment such as resource-saving measures due to the compact transformer.

The awards ceremony will be held during the 24th JCIA Annual Convention.

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