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THE DAILY YOMIURI

THURSDAY, APRIL 23, 2009

No. 21,049 昭和25年4月28日第3種郵便物認可 ©(日刊) THE DAILY YOMIURI (2009)

PRICE ¥120 (¥2,650 per calendar month)—tax included

EDITION C

2009年4月23日(木) 新報(刊) (3面)

Engineer, 62, wins award for eco-cable material

The Yomiuri Shimbun

OSAKA—An engineer who last year obtained a doctorate from Kansai University at the age of 61 and also won an international prize for a biodegradable insulating material he developed for electric cable, has received a special award from the president of the university.

Takuo Nakiri of Ashiya, Hyogo Prefecture, is the first recipient of the president's award, which was established this spring to honor excellent students.

"I'm a happy engineer because I did something I enjoyed and it has been recognized," Nakiri said.

Disposal of power cables, which are typically insulated with petroleum-based resins, poses an environmental hazard. Nakiri developed a biodegradable alternative substance based on plant-derived polylactic acid.

Nakiri's doctorate thesis, based on his research on the project, won the James R. Melcher Prize Paper Award, one of the top honors of the Institute of Electrical and Electronics Engineers, Inc., a U.S.-based international academic society, for its contribution toward solving environmental problems.

A native of Shimonoseki, Yamaguchi Prefecture, Nakiri was attracted to science at a young age. He recalls constructing a crystal radio set when still in primary school.

After graduating from Ube National College of Technology in Ube, Yamaguchi Prefecture—he was one of the first students to attend the institution—Nakiri took up his first job at Kansai Electric Power Co. in 1967.

In his time there, he worked on developing various types of power cables, including some that are now used to supply electricity to the Akashi Kaikyo Ohashi bridge, which links Kobe and Awajishima island, and some that lie underwater in the Kii Channel to the south of the island.

Identifying the need for a biodegradable material that could be used to insulate such cables, Nakiri began researching the viability of using plant-derived polylactic acid as a base.

In 2004, as he approached the mandatory retirement age, he began studying at Kansai University's graduate school of engineering in Suita, Osaka Prefecture, under Prof. Yoshiro Tajitsu, who had conducted his own research into polylactic acid.

While also continuing his full time job, Nakiri attended the research laboratory four days a week after work, and spent his days off conducting experiments.

The chief difficulty he confronted was that polylactic acid rapidly returns to a solid state after being melted, making it difficult to apply it with consistent thickness to copper wire.

After more than two years, he finally succeeded in finding a solution.



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Takuo Nakiri, far right, works with students at Kansai University in Suita, Osaka Prefecture.

The new material performs comparably to petroleum-based alternatives, but in the event of its disposal being necessary, is much less harmful to the natural environment.

Tajitsu said, "His professional approach of emphasizing practical utility aided [the development of the technology]."

For the past four years, Nakiri has been instructing students at the university laboratory once a week while also working for a manufacturer of casting furnaces.