

Kamioka  
Branch

## “Nobel Prize in Physics” Awarded to Professor Kajita of Institute for Cosmic Ray Research, Tokyo University !!!

### Congratulations, Professor Kajita !!! on Winning Nobel Prize

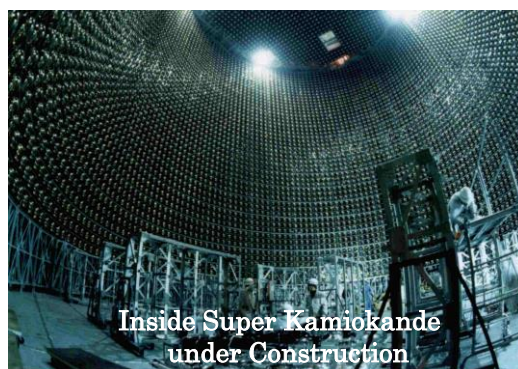
Professor Kajita raised an issue of the “Atmospheric Neutrino Anomaly” that the composition ratio of the atmospheric neutrino did not match the expected figure as observed during the experiments carried out at “Kamiokande” which had started its operation in 1983. Meanwhile, in 1996, “Super Kamiokande” was completed. By using “Super Kamiokande” of the size more than 20 times greater than that of “Kamiokande”, Prof. Kajita demonstrated for the first time in the world that the anomaly was caused by the “Neutrino Oscillation” meaning that the types of neutrinos changed during their flight.

Discovery of the atmospheric neutrino oscillation overturned the established elementary particle theory and opened the door to new physics. This achievement was recognized and led to the award of the Nobel Prize in Physics this time. We, on behalf of everyone at Mesco, cordially and sincerely congratulate Professor Kajita on his achievement.

We have engaged ourselves in the series of projects since 1983, starting from the construction of the Kamioka underground observatory for Institute for Cosmic Ray Research, Tokyo

University, inside Mozumi Mine of Kamioka Mining. We continued to provide our support with the basic engineering work, etc. for the construction of “Kamiokande” and also of “Super Kamiokande” which followed.

We, Mesco, will proudly continue to play a role in the advanced technologies in the area of the cosmic ray researches by fully utilizing our experiences and proven technologies.



Inside Super Kamiokande  
under Construction

Kamioka  
Branch

## Letter of Thanks Received from Tokyo University for Completion of 1<sup>st</sup> Stage KAGRA Project

### At Ceremony of Completion of 1<sup>st</sup> Stage Research Facility

A ceremony was held in Toyama on November 6 to celebrate the completion of the 1<sup>st</sup> stage research facility of the KAGRA Project, which involves a large-scale cryogenic gravitational wave telescope and is run by the Institute for Cosmic Ray Research, Tokyo University, headed by Professor Kajita, winner of the Nobel Prize, as the institute director. We are pleased to announce that a letter of thanks was presented to Mesco at the ceremony for the contribution we made as prime contractor for the ultra-high vacuum duct installation, flange fastening, and electrical works.

The KAGRA Project, run underground at the Kamioka mine, where Mitui Mining & Smelting originally started its operation, is a research project intended for the first-ever direct observation in human history of the gravitational waves, i.e., distortion of the space-time transmitted in the form of waves of gravity that governs the construction and evolution of the universe. Enabling gravitational wave observation will largely contribute to providing clues to the mystery of the universe, such as black holes.

State-of-the-art equipment is required by this project, and much of Mesco's technologies have been used for its implementation.



Professor Kajita (Left)  
President Araki of Mesco  
(Right)  
Letter of Thanks received  
from Tokyo University

Inside KAGRA

Ultra-High Vacuum  
Ducts & Cryostat



## Exhaust Gas Treatment Facility Construction Order Received from Takehara Refinery of Mitsui Mining & Smelting

**To be Completed in March, 2016**

Mesco received from Takehara Refinery of Mitsui Mining & Smelting Co., Ltd. an order for construction of an exhaust gas treatment facility, which is an item in one of our specialty areas, and a groundbreaking ceremony was held.

This facility is intended for thorough removal of fine dusts, containing heavy metals, from the blast furnace. The main equipment items to be delivered are two (2) gas cleaning towers and one (1) wet type electrostatic precipitator.

Social demands for recycling are getting higher and higher and call for higher quality of the engineering expertise required.

We, Mesco, are committed to continue our efforts to pursue higher level technologies so as to respond to such needs in the market and thereby develop technologies that contribute to our customers.



Groundbreaking Ceremony



Site Office  
at Refinery

## Liquid Feed Material Production Facility Construction for Nichiha Matex Co., Ltd.

In August, 2015, we completed construction of a liquid feed material production facility ordered by Narashino Works of Nichiha Matex Co., Ltd., manufacturer of ceramics-based exterior wall materials.

While the project involved utilization and modification of part of the existing facilities, we managed strict schedule control within the limited time for the shutdown maintenance work to respond to our customer's needs by completing the project in time.

Nichiha Matex Co., Ltd. is a group company of Nichiha Corporation, a leading manufacturer of ceramics-based exterior wall materials and we, Mesco, are pleased and proud that we were offered an opportunity of contributing to Nichiha Matex's production.

We, Mesco, will continue to serve the industries of a wide variety, including the construction materials producers, not only those in the non-ferrous metals industry.



Feed Material Tank



Feed Material Production Facility



Narashino Works of Nichiha Matex Co., Ltd.  
Main Products: Exterior building materials - Excelard series  
Location: Higashi Narashino, Narashino-shi, Chiba-ken

※ Source: Nichiha Corporation's Website



## “Fin Assembly Machine” Delivered to Heat Exchanger Manufacturer

Mesco's Kamioka Branch delivered in September a “Fin Assembly Machine” for radiators to a heat exchanger manufacturer on schedule as ordered.

The “Fin Assembly Machine” automatically inserts fins to heat conductive pipes at an equal spacing and put them together to form radiators. We added new developments to a variety of spots of the machine to automate it for delivery.

The present fin assembly operation requires operators' trained skill in proper spacing and positioning of the heat transfer pipes for inserting the fins. As such, operation by dedicated experts has been indispensable.

The newly developed “Fin Assembly Machine” has a freely adjustable fin spacing feature to handle radiators

of different sizes. It has enabled smooth assembly by means of automatic positioning of the heat conductive pipes, which initially used to be considered difficult to achieve from the construction point of view.

Mesco's automatic assembly machine delivered with such new features built in here and there has largely contributed to the user's improvement in its operation efficiency, productivity, manpower saving, product quality, and working safety.

Mesco's Kamioka Branch will continue to respond to our customers' demanding needs by making the best use of its experience and proven technologies and by making FA proposals such as labor saving and equipment automation.



Fin Assembly  
Machine



# MESCO

*Mesco's abundant track records and excellent technologies  
have led to a high reputation gained in various fields.*

## Sales of Quemetco RSR Lead Anodes for Decopperization Processes

Mesco represents Quemetco of the Ecobat group, the world's largest lead smelting group, and has been delivering RSR lead anodes for the decopperization processes produced by Quemetco to the Japanese non-ferrous metals companies.

Compared to the conventional lead anodes, the RSR anodes used at the smelters in many countries in the world have proven to have higher corrosion resistance, higher deformation resistance, and longer life (4-8 years, more than twice the life of the conventional anodes, 2-4 years). Use of RSR anodes also improves the electric current efficiencies thanks to the resulting lower cell voltages and thereby contributes to the reduction of the running costs of the smelters.

It is a significant part of our activities to offer superior overseas technologies, such as RSR anodes, to our customers, both domestic and overseas.

We will continue to introduce superior technologies of the world and thereby contribute to our customers.

### 【Send Your Inquiries to:】

Domestic Sales & Marketing Dept.  
Mesco, Inc.  
Phone: +81-(0)3-5610-7840



**Pb-Sn-Ca Anodes for Decopperization Processes at Quemetco's Works**

## Finally

As headlines of this issue, we took up the ceremony celebrating the completion of the "KAGRA" project which led to the Nobel Prize awarded to Professor Kajita of Tokyo University. We feel so proud to find two Nobel Prize winners have come from the projects in which Mesco have played a role. It is expected that discovery of the gravitational waves by "KAGRA" completed this time will lead to winning of another Nobel Prize. It is indeed a great honor for Mesco to be involved in such significant projects as an engineering company.

I am a simple layman, who takes such things as neutrinos and gravitational waves well beyond my comprehension and is unable to visualize any use for the future, but their discoveries may lead to new voyages to a new space world decades later. Time may come in a distant future when Mesco will be involved in plant constructions in the outer space. We would appreciate your continued support to Mesco having such a big dream.

**So'ichiro Kimura, GM**  
Domestic Marketing & Sales Dept.

## Engineering

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