News Release

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JX Nippon Mining & Metals Corporation

Completion of New Cathode Materials Production Facility for Automotive Lithium-Ion Batteries

JX Nippon Mining & Metals Corporation (head office: Otemachi 2-chome, Chiyoda-ku, Tokyo; president: Yoshimasa Adachi) is pleased to announce the completion of a new production facility in the Isohara Works (Kitaibaraki-shi, Ibaraki Prefecture; general manager: Hirohito Miyashita) for making cathode materials used in automotive lithium-ion batteries. Having a capacity of 5,000 tons/year, the new facility was constructed along with the rebuilding efforts following the Great East Japan Earthquake of March 11, 2011. The completion ceremony was held September 19.

Demand for lithium-ion batteries is growing rapidly as they have become essential power sources for the next generation of eco-vehicles including electric vehicles (EV), plug-in hybrid vehicles (PHEV), and hybrid vehicles (HEV). At the same time, producers of these batteries are required to perform a difficult balancing act among the needs for high capacity, safety, and low cost. The major upgrade in our capacity resulting from this new construction will enable us to provide a stable supply of high-purity and homogeneous cathode materials to meet the rising demand.

In addition to lithium, our cathode materials are made from a three-element precursor mixing cobalt, manganese, and nickel, giving them the following properties.

1. Controlled dispersion of constituent elements
   By developing an original wet-type manufacturing method, we established a process for controlling the dispersion properties of the elements making up the cathode materials. The result is cathode materials with outstanding homogeneity, contributing to improved performance of lithium-ion batteries.

2. Improved safety thanks to our original integrated processes
   To prevent the introduction of foreign substances that can cause battery shorting, we adopt an integrated processing system encompassing all the stages from raw metal materials to the final product.

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3. Highly stable quality
   Applying our analysis techniques built up over years of semiconductor materials development and manufacturing, we achieve highly stable quality. We consider advanced analysis capability essential for further improving our quality control techniques and for next-generation cathode materials design.

The capacity expansion at our Isohara Works was funded in part by a grant under a Ministry of Economy, Trade and Industry (METI) fiscal 2010 program promoting factory location and job creation by supporting domestic investment in low-carbon industries.

In order to establish a resource recycling system, we conducted a commercial feasibility trial at our Tsuruga Plant (in Fukui Prefecture) on processes for efficient recovery from spent lithium-ion batteries of the metals used as raw materials in making cathode materials. Based on the results of the trial, we are now drawing up business plans aimed at early commercialization, which include making further process improvements, reducing costs, and determining the optimal economic scale of the production system. Successful realization of this resource recycling system should help assure a stable supply of raw materials for our cathode materials manufacturing at the new facility.

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