

October 3, 2017
Hitachi Metals, Ltd.

Hitachi Metals Announces Expansion of Production Capacity for FINEMET® Nanocrystalline Magnetic Materials

-To address the need for higher performance at high frequencies-

Recently, to produce smaller and lighter power supply circuits for EVs^{*1}, railways, and renewable energy systems, the performance of power semiconductors has been significantly boosted (higher switching frequency) and demand for soft magnetic materials that offer high performance at high frequencies is increasing. To address to this emerging demand, Hitachi Metals, Ltd. will make a capital investment for the production of FINEMET® and triple its production capacity.

1. Background

Hitachi Metals has focused on the further expansion of its specialty steels business to automobile-related fields in the global market. Especially, we have positioned products related to EVs and other eco-friendly vehicles as a driver of growth and promoted global sales expansion as a key strategy.

In recent years, reduction in the size and weight of power supply circuits for EVs, railways, and renewable energy systems, the growing performance of IGBT^{*2} using Si and the advent of next-generation semiconductors such as SiC (silicon carbide) and GaN (gallium nitride) have necessitated products with a larger capacity and higher switching frequency than before. However, transformers and reactors using electrical steel have a higher core loss^{*3} in the high-frequency ranges, and suppression of the temperature rise caused by this loss makes it difficult to downsize the system. Downsizing and space-saving design will also generate noise in the high-frequency ranges that cannot be suppressed by conventional products.

Against this background and amid the surging demand for EVs and other new products, the properties of FINEMET®, including both its high magnetic permeability and flux density, are receiving widespread attention for many applications such as transformers, reactors, and chokes for noise filters.

2. Overview

In order to respond to such market demand, Hitachi Metals will triple its output capacity (compared to fiscal 2017 level) by the end of fiscal 2018 through the reinforcement of its production lines. Moreover, we will pursue higher quality of each product through process improvement.

The Specialty Steel Company of Hitachi Metals will enhance its production capacity and product competitiveness by focusing on the execution of growth strategies such as the introduction of these production lines, contribute to the electrification of vehicles and the improvement of environmental performance as a pioneer in this market, and aim at promoting sustainable growth with global customers.

3. Details of Investment

- (1) Place: Metglas Yasugi Works and Hitachi Metals (Thailand), Ltd.
- (2) Purpose: Satisfy emerging demand for EVs and other products
- (3) Investment Scale: Triple output capacity by the end of fiscal 2018 (reinforcement of production lines and improvement of processes)



FINEMET® Ribbon



FINEMET® Common mode choke

For inquiries from the press: Corporate Communications Office, Hitachi Metals, Ltd.

hmcc.sa@hitachi-metals.com

*1 "EV" is the including term for hybrid electric vehicles (HEV) and plug-in hybrid electric vehicles (PHEV).

*2 IGBT stands for insulated gate bipolar transistor, which is a power semiconductor switching device, and is used as the main conversion device for large-capacity power converters.

*3 Core loss is the loss of energy when an alternating magnetic field is applied to an iron core.