

# Recent Activities in Research of Soft Ferrite\*



Satoshi Gotoh  
Dr. Eng., Senior  
Researcher, Iron  
Powder & Magnetic  
Materials Lab.,  
Technical Res. Labs.

## *Synopsis:*

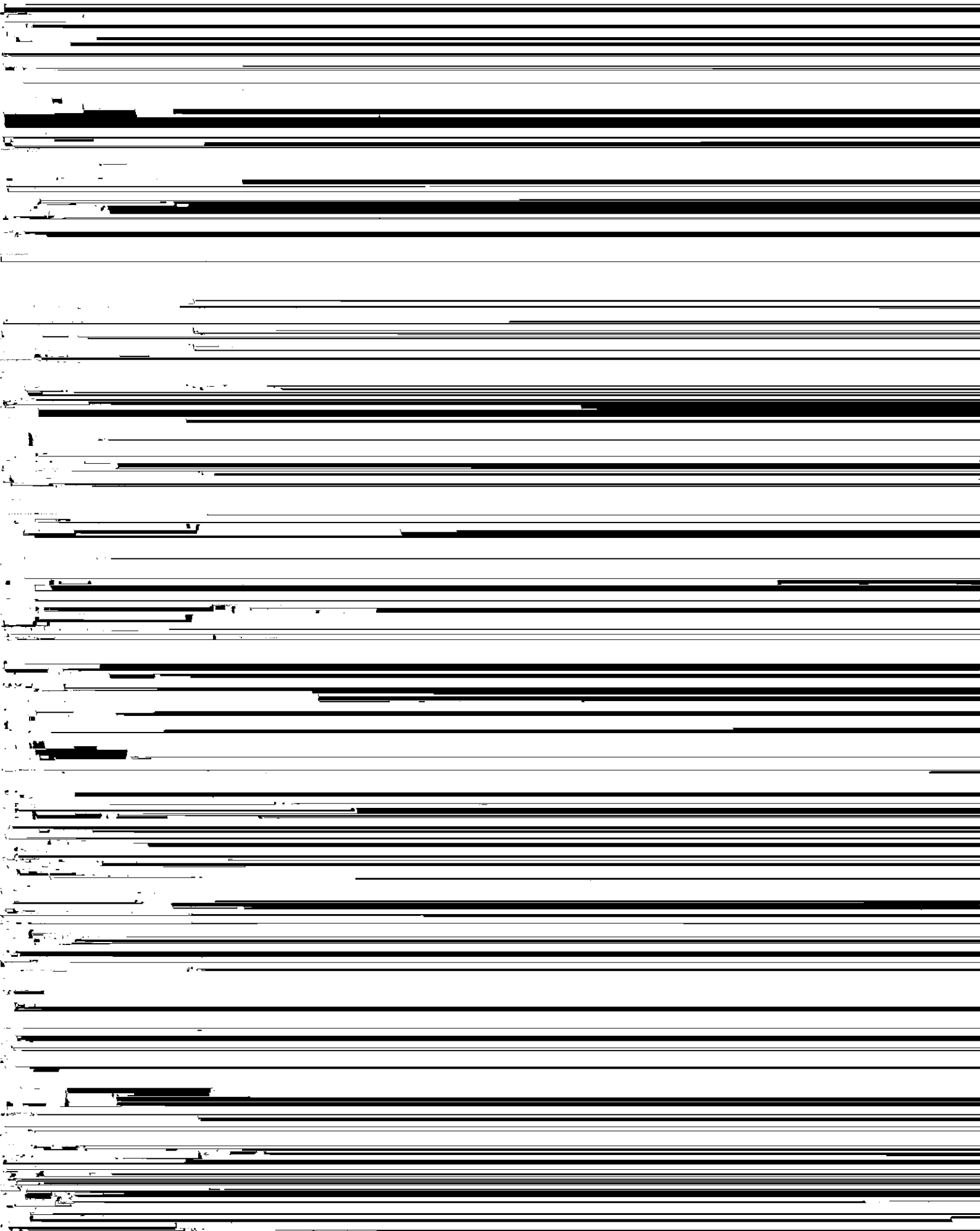
*Four kinds of low-loss materials and five kinds of high permeability materials of MnZn ferrite have been developed to establish applications for soft ferrites, which are used in electric equipment and systems that must be smaller and thinner and of higher quality at high frequencies. Newly developed roller hearth kilns, in which the temperature and atmosphere can be precisely controlled to sinter MnZn ferrite, have provided higher quality and productivity compared with the conventional pusher-type kiln.*

## 1 Introduction

Soft ferrite has much higher resistivity than metallic soft magnetic materials and provides excellent soft magnetic properties at frequencies between tens of kilohertz

## 2 Development of Low-Loss MnZn Ferrite for Power Supplies

In the switching power supplies used in various types of electronic equipment, technological innovation is



Hence, Kawasaki Steel, in conjunction with Kawatetsu Ferrite Corp., developed a new roller hearth kiln that provides both high quality MnZn ferrite and high productivity<sup>8,9)</sup>, and obtained the following performance and product characteristics

decided to move into the soft ferrite business. This paper has described the research and development carried out during that time. The company intends to develop materials that can meet demand for even lower losses, higher permeability and higher frequencies and a wider