

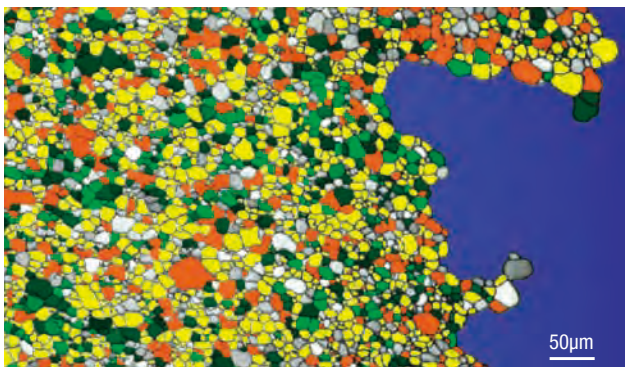


# Electrical Steel

Electrical Steel Research Department conducts research and development of high-functional electrical steel sheets which help reduce CO<sub>2</sub> emissions and save energy by creating high performance transformers and motors.

## Grain-Oriented Electrical Steel Material Technology

Grain-oriented (GO) electrical steel sheets for transformer cores are manufactured by using sophisticated technologies and thus called an “art work of steel”. JFE is developing a grain-oriented electrical steel sheet with significantly low iron loss and noise of the transformer.



Growth of secondary recrystallized grain with the Goss orientation (blue area at right)



Iron core of large scale transformers of the GO electrical steel

## Non-Oriented Electrical Steel

Non-oriented (NO) electrical steel sheets are used as motor core materials. JFE’s low iron loss grades are suitable for traction motors of hybrid electric vehicles (HEVs). 6.5%Si steel sheets (Super Core™) are also commercially produced.



A HEV motor core of the NO electrical steel



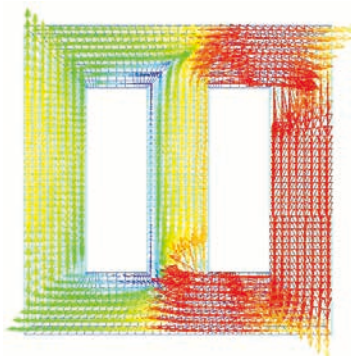
Reactor cores of the Super Core™

## Evaluation & Application Technologies

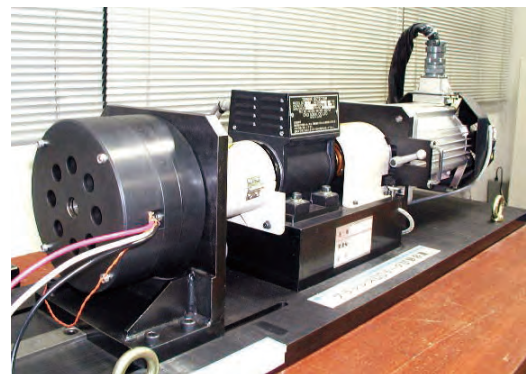
JFE Steel develops evaluation and application technologies for electrical steels in order to propose the best solutions to our customers. Analysis by using advanced electromagnetic measurement can maximize performance of electrical devices.



Model transformer



Magnetic field analysis



Motor evaluation equipment