

**Development of Power Supply Unit for Anomaly Detection Sensors
in Ground Coils of Superconducting Maglev**

Minoru TANAKA Masao SUZUKI

In the Magnetically levitated transportation (Maglev) system, a huge number of ground coils will be required for outdoor use over an extended period. To detect the precursor of ground coils failure, we developed anomaly detection sensors. When the sensor is built into the ground coil, the use of commercial power supply is difficult. Therefore, we have developed a power supply unit using a variable magnetic field generated by the propulsion current. In order to realize quick charge from the variable magnetic field, and to operate the sensor for a long period of time, we have tested the combination of a polyacenic semiconductor (PAS) capacitor and a lithium polymer battery. We confirmed by the bench test that the combination of the electric storage media is suitable for the power supply unit for anomaly detection sensors.