High Sensitive Magnetic Sensor and Electromagnetic Nondestructive Evaluation

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Background
- High sensitive magnetic sensors, such as SQUID, AMR, MI have applications in many fields: NDE, biosensor, geophysics, communication, automobile, aerospace.
- Electromagnetic nondestructive evaluation is an effective method for safety evaluation of infrastructure.

Aim
- Improving the sensitivity of magnetic sensors.
- Developing application systems of magnetic sensors.
- Detection the depth, diameter and corrosion of steel rebar in concrete.

MI sensor
Magneto impedance sensor

Steel rebar evaluation

Principle of experiment

Experiments in laboratory

Field experiments

Publications

Summary
- High sensitive MI magnetic sensor were developed.
- Using the sensor, high sensitive eddy-current NDE systems was developed.
- Electromagnetic method was developed to evaluate the corrosion of steel rebar.

Research outcome
- Commercializing the high sensitive magnetic sensor.
- Commercializing the electromagnetic NDE system for the evaluation of steel rebar.