APPLICATION NOTE

MEASUREMENT OF COERCIVE FIELD STRENGTH IN THE DEVELOPMENT OF SPECIAL MAGNETICALLY SOFT ALLOYS

Small deviations in coercivity can reduce efficiency and increase losses. KOERZIMAT measures HcJ precisely, regardless of specimen geometry.

THE CHALLENGE

Soft magnetic materials such as Fe-Co, Fe-Ni, amorphous and nanocrystalline alloys are widely used in electrical and automotive applications. Their performance depends strongly on magnetic properties, especially coercivity (HcJ), which influences hysteresis losses and energy efficiency. Measuring very low coercive field strengths down to below 0.5 A/m requires high sensitivity and geometry-independent testing.

THE SOLUTION

Coercivity measurement is performed with the KOERZIMAT 1.097 HCJ system in accordance with IEC 60404-7. The device enables fast and precise determination of HcJ without specimen preparation. It accommodates various geometries such as rods, strips and wires, providing flexible and reproducible testing for development and production of soft magnetic materials.

THE RESULT

The system allows accurate measurement of coercive field strengths in a range from below 0.5 A/m up to higher values typical for special alloys. High sensitivity supports evaluation of hysteresis behavior and core loss characteristics. Reliable and geometry-independent testing ensures optimized material selection and quality control in steel manufacturing.

KOERZIMAT 1.097 HCJ/J-H

System for measuring coercive field strength HCJ, J(H) hysteresis and relative permeability μr(H)

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