سیستم الکترونیک و نرم افزاررسم
منحنی
electronic system & Interface card

Descriptions:

ecording the magnetization and hysteresis curves of a ferromagnet. In a ferromagnet, the magnetic induction $B = m_r \cdot m_0 \cdot H$; $m_0 = 4p \times 10\text{-}7$ Vs/Am : magnetic field constant reaches a saturation value Bs as the magnetic field H increases. The relative permiability mr of the ferromagnet depends on the magnetic field strength H, and also on the previous magnetic treatment of the ferromagnet. Thus, it is common to represent the magnetic induction B in the form of a hysteresis curve as function of rising and falling field strength H. The hysteresis curve differs from the magnetization curve, which begins at the origin of the coordinate system and can only be measured for completely demagnetized material. In this experiment, a current I1 in the primary coil of a transformer which increases (or decreases) linearly over time generates the magnetic field strength $H = I1 \times (N1/L)$; L: efficient length of iron core, N1 :number of windings of primary coil. The corresponding magnetic induction value B is obtained through integration of the the voltage U2 induced in the secondary coil of a transformer: $B = (1/(A.N2)) \times U2 \cdot dt$; A :crosssection of iron core , N2 :Number of windings of secondary coil. The computer-assisted measurement system interface card is used to control the current and to record and evaluate the measured values. The aim of the experiment is determine the relative permeability mr in the magnetization curve and the hysteresis curve as a function of the magnetic field strength H

Specifications :

  pc oscilloscop :   External oscilloscop 20 MHz

signal generator : .1 HZ …100KHZ

Warranty : One year

After sales service : Ten years