

Improved Qualitative Modeling of the Magnetization Curve $B(H)$ of the Ferromagnetic Materials for a Transformer Used in the Power Supply for Magnetron

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Abstract : This paper presents a qualitative modeling for the nonlinear B-H curve of the saturable magnetic materials for a transformer with shunts used in the power supply for the magnetron. This power supply is composed of a single phase leakage flux transformer supplying a cell composed of a capacitor and a diode, which double the voltage and stabilize the current, and a single magnetron at the output of the cell. A procedure consisting of a fuzzy clustering method and a rule processing algorithm is then employed for processing the constructed fuzzy modeling rules to extract the qualitative properties of the curve.

Keywords : B(H) curve, fuzzy clustering, magnetron, power supply

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