Royal Military College of Canada

Prof. Thomas W. Krause

Canada

Federal Ministry
of Education
and Research

COMPANY DESCRIPTION

Research and Development in electromagnetic and magnetic nondestructive evaluation methods including:

- Eddy Current
- Pulsed Eddy Current
- Magnetic Barkhausen Noise
- Magnetic Adaptive Testing
- Passive Magnetometry

National and International Collaborators

Key Products:

Nondestructive Inspection Systems and Methods

Technical Team: Senior Research Associate,

Post Doctoral Fellow, Visiting Scientist, 6 graduate students

COLLABORATION: PROJECTS OF INTEREST

Magnetic Barkhausen noise (BN) analysis using AI & machine learning

for assessment of ferromagnetic steel condition and properties, including microstructure, hardness, stress and permeability.

BN is sensitive to:

- Grain size,
- Texture,
- Inclusions
  (e.g. carbon, impurity elements)
- Strength and Hardness
- Elastic stress
- Plastic deformation

Krause et al. , Micromagnetic Techniques, ASM Handbook Vol. 17, 2018
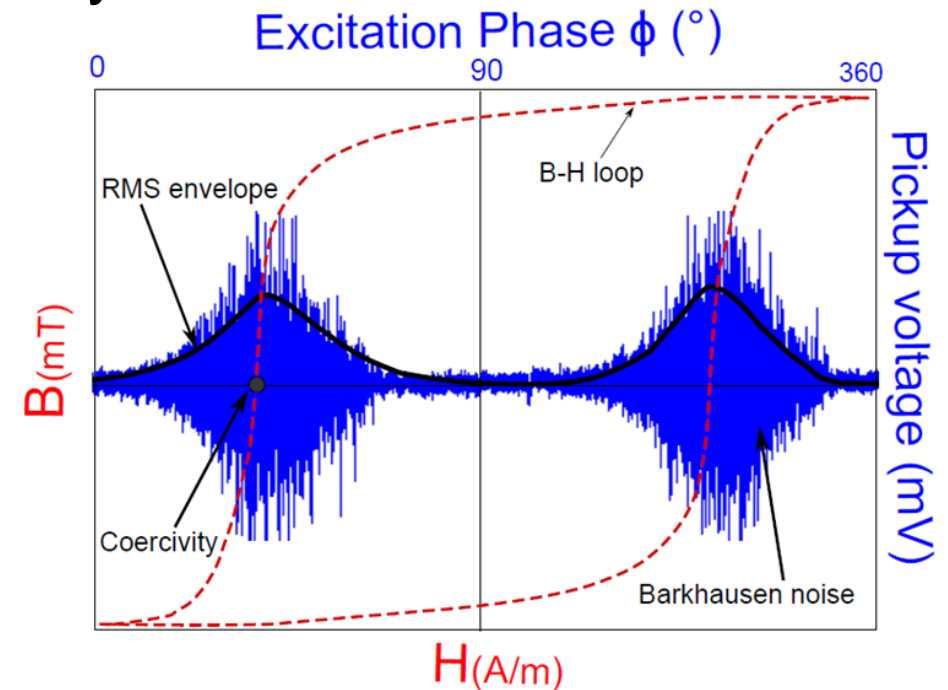
COLLABORATION: AREAS OF INTEREST

Nondestructive characterization & evaluation of ferromagnetic steel properties:

- Microstructure
- Magnetic permeability
- Case depth hardening
- Electrical steel core loss
- Embrittlement

Steel materials including:

- Steel pipe
- Plate/sheet steel
- Additive manufactured steel

https://www.sgs.com/en/industrial-manufacturing

www.thetrustedinsight.com/

CONTACT DETAILS

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