Twenty Second Annual Conference on Properties and Applications of Magnetic Materials

May 12-14, 2003

For additional information about the conference please visit: http://www.ece.iit.edu/magnetics2003/home.htm

Illinois Institute of Technology
Hermann Hall
Chicago
Monday, May 12

1:00 Registration
1:50 Introduction: Jafar Saniie, Illinois Institute of Technology
    Welcome: Erik Hilinski, U. S. Steel Corporation

Session 1: Electric Motors and Automotive Applications
Session Chairman, Ali Emadi, Illinois Institute of Technology

2:00 “Switched Reluctance Motors for Automotive Applications”
    P. Pillay, Clarkson University, Potsdam, New York, USA

2:30 “Power Loss Testing System for Complex Electromagnetic Core Designs Used in New Direct Drive DC Brushless Motors”
    Z. Soghomonian, WaveCrest Laboratories LLC, Sterling, Virginia, USA

3:00 “Selection, Sizing, and Control of Adjustable Speed Motor Drives for Auxiliary Automotive Applications”
    B. Fahimi, University of Missouri-Rolla, Rolla, Missouri, USA

3:30 Coffee Break

4:00 “New Trends in Automotive Power Generation and Control”
    V. Caliskan, Motorola ACES, Northbrook, Illinois, USA

4:30 “3D Static Magnetic Field Mapping for Permanent Magnet Rotor Validation in PM DC Motors Used in Direct Drive Propulsion Application”
    Z. Soghomonian, WaveCrest Laboratories LLC, Sterling, Virginia, USA

5:00 Wine and Cheese Party

Tuesday, May 13

Session 2: Measurement and Characterization of Magnetic Properties and Performance
Session Chairman, Erik Hilinski, U. S. Steel Corporation

9:00 “Development of New Magnetic Parameters to Characterize Cold Rolled Motor Lamination Steels and Predict Motor Performance”
    K. Blazek\textsuperscript{a} and Mr. C. Riviello\textsuperscript{b}
    (a) Ispat-Inland Steel Company, Research Laboratories, East Chicago, Illinois, USA
    (b) A.O. Smith Electrical Products Company, Tipp City, Ohio, USA

9:30 “Lamination Steels – A Motor Designer’s Perspective”
    U. Deshpande, Black & Decker, Towson, Maryland, USA

10:00 Coffee Break

10:30 “Direct Measurement of Local Magnetic Properties in a Motor Core under Rotating Conditions”
    K. Senda, M. Ishida, and A. Honda
    JFE Steel Corporation, Steel Research Laboratory, Mizushima, Kurashiki, Japan

11:00 “Magnetic Power Losses with Generic Flux Waveform and Minor Loops: Measurement and Prediction”
    F. Fiorillo, Instituto Elettrotecnico Nazionale Galileo Ferraris, I-10135 Torino, Italy
11:30 Lunch

12:30 Recognition of Outstanding Conference Supporters and Contributors
Professor D. C. Jiles, Dr. R. R. Judd, and Dr. P. K. Rastogi

1:00 Messinger Lecture - “A Scenario for the Future of Magnetic Information Storage - A Tale of a Dead Moth, a Wooden Warship, a Jumbo Jet, a Shoal of Fish, the Point of a Pin, the Human Brain, St Basil's Cathedral and a Violent Death”
Professor D. Mapps, University of Plymouth, Department of Communications and Electronic Engineering, Plymouth, United Kingdom

Session 3: Magnetic Sensors
Session Chairman, Massimo Pasquale, Istituto Elettrotecnico Nazionale

2:00 “Magnetoelectric Sensors; Principles, Materials and Applications”
I. Garshelis, Magnova Incorporated, Pittsfield, Massachusetts, USA

2:30 “Use of Magnetic Materials In Automotive Sensors”
W. Fleming, TRW Occupant Safety Systems, Washington, Michigan, USA

3:00 Coffee Break

3:30 “Development of New Materials for Magnetic Sensors and Actuators”
C.C.H. Lo and D.C. Jiles, Ames Laboratory, Ames, Iowa, USA

4:00 “Dynamic Characterization of Magnetostrictive Transducers”
A. Flatau, University of Maryland, Department of Aerospace Engineering, College Park, Maryland, USA.

4:30 Wine and Cheese Party

Wednesday, May 14

Session 4: Processing and Development of Higher Alloy Electrical Steels
Session Chairman, Dr. Ted Bloom Ispat-Inland Steel Company

9:00 “Finite Element Simulation of Goss Grain Fragmentation during a Cold Rolling Process”
S.-J. Park and J.K. Kim, POSCO, Technical Research Laboratories, Pohang, Korea

9:30 “Electrical Steel Sheets for Traction Motor of Hybrid/Electric Vehicle”
H. Mogi, C. Kaido, T. Wakisaka, N. Suzuki, and M. Yabumoto
Nippon Steel Corporation, Steel Products Laboratory, Futtsu, Chiba, Japan

10:00 Coffee Break

10:30 “Texture Evolution in Electrical Steels Produced by Classical and Innovative Routes”
Y. Houbaert, L. Kestens, L. Suarez, and T. Ros-Yáñez
Ghent University, Metallurgy and Materials Science, Zwijnaarde, Gent, Belgium

11:00 “Aspects of Control and Influence of Hot Band Microstructure in a Hot Band Annealed CRML Steel”
E. Hilinski, U. S. Steel Corporation, Research and Technology Center, Monroeville, Pennsylvania, USA

11:30 Closing Remarks
Directions to IIT Main Campus
From Lake Shore Drive:
Exit at 31st Street and go west to Michigan Avenue (1/2 Mile). Turn left (south) on Michigan Avenue and proceed toward 33rd Street.

From Dan Ryan Expressway:
Exit at 31st Street and go east on 31st Street to State Street. Turn right and proceed toward 33rd Street.

Parking will be available south of 33rd Street between Michigan Avenue and State Street.