Twenty First Annual Conference on Properties and Applications of Magnetic Materials

May 13-15, 2002

PROGRAM

Illinois Institute of Technology
Hermann Hall
Chicago
Monday, May 13

1:00 Registration

1:50 Introduction: J. Saniie, Illinois Institute of Technology
Welcome: R.R. Judd, Judd Consulting Associates

Session 1: Magnetic Measurement of Electrical Steel
Session Chairman, Philip Beckley

2:00 “Challenges of Non-sinusoidal Flux and Voltage Waveforms”
A. J. Moses, Wolfson Centre, Cardiff University, United Kingdom

2:25 “Digital Waveform Control for Magnetic Measurement”
S. Siebert, Brockhaus, Germany

2:50 “Magnetic Measurements on Eleven-Tonne 3-Phase Transformer Cores”
H. J. Stanbury, H. A. Smith, and C. H. Porter, Cogent Power Ltd., Newport, South Wales, United Kingdom

3:15 Coffee Break

3:45 “Effect of Grain Size on the Static and Dynamic Losses of Non-oriented SiFe”
M. Pasquale, Istituto Elettrotecnico Nazionale Galileo Ferraris, Torino, Italy

4:10 “Magnetic Assessment of Soft Magnetic Composite (SMC) Materials”
P. Jansson, Höganäs AB, Sweden

4:35 Special Tutorial: “Power Electronics and Motor Drives”
A. Emadi, Illinois Institute of Technology, Chicago, Illinois, United States

5:15 Wine and Cheese Party

Tuesday, May 14

Session 2: Developments in Non-oriented Sheet
Session Chairman, Ted Bloom, Ispat-Inland Steel Company

9:00 “Determination of Grain Growth Mechanisms during Secondary Annealing in a CRML Steel”
S. Cheong(a), E. J. Hilinski(b), and A. D. Rollett(a)
(a) Carnegie-Mellon University, Pittsburgh, Pennsylvania, United States
(b) U. S. Steel Corporation, Monroeville, Pennsylvania, United States

9:25 “On the Origin of Grain Boundary Embrittlement of Non-oriented Electrical Steel Sheet”
P. M. Predmersky(a) and S. Longauer(b)
(a) U. S. Steel Kosice, s.r.o., Kosice, Republic of Slovakia
(b) Technical University of Kosice, Kosice, Republic of Slovakia

9:50 “The Angular Dependence of Magnetic Properties of Electrical Steels”
M. A. da Cunha(a), N. C. S. B. Zwirman(b), V. W. Wolgrien(b), R. S. Germano(b), F. J. G. Landgraf(c), T. Yonamine(d), R. Takanohashi(d), and N. B. Lima(d)
(a) Acesita, Tomoteo, Minas Gerais, Brazil
(b) CSN, Volta Redonda, Rio de Janeiro, Brazil
(c) Institute for Technological Research (IPT), Sao Paolo, Brazil
(d) Institute for Nuclear Energy Research (IPEN), Sao Paolo, Brazil

10:15 Coffee Break

10:45 “Non-oriented Electrical Steel for High-Efficiency Motors”
A. Fujita, M. Kawano, and M. Komatsubara, Kawasaki Steel Company, Mizushima, Japan

11:10 “Columnar Grain Growth in Non-oriented Electrical Steels”
F. Kovac(a), M. Dzubinsky(a), P. M. Predmersky(b), and Y. Sidor(a)
(a) Slovak Academy of Science, Kosice, Republic of Slovakia
(b) U. S. Steel Kosice, s.r.o., Kosice, Republic of Slovakia
“Rolling and Recrystallization Textures of Non–Oriented Electrical Steels”
M. Černík(a), A. Leško(b), and L. Hrabčáková(b)
(a) U. S. Steel Kosice, s.r.o., Kosice, Republic of Slovakia
(b) Slovak Academy of Science, Kosice, Republic of Slovakia

12:00 Lunch

1:00 Messinger Lecture - “Applications of Giant Magnetostriective Alloys”
J. Snodgrass, ETREMA Products Inc., Ames, Iowa, United States

Session 3: Higher Alloy Electrical Steel
Session Chairman, Erik Hilinski, U. S. Steel Corporation

2:00 “Effects of Magnetic Annealing on Magnetic Properties of Grain Oriented Si Steel”
S. Y. Cha(a), I. B. Chudakov(b), S. K. Chang(a), J. S. Woo(a), and J.-K. Kim(a),
(a) Technical Research Laboratories, POSCO, Pohang, Kyungbuk, Korea
(b) I.P. Bardin State Scientific Center, Moscow, Russia

2:25 “Advances in the Production of High-Silicon Steel through Hot Dipping and Diffusion Annealing”
T. Ros-Yañez and Y. Houbaert, Ghent University, Gent, Belgium

2:50 “Workability of High Silicon Steel (≥4 wt.%) for Electrical Applications”
Y. Houbaert(a), T. Ros-Yañez(a), D. Ruiz(a), R. Colás(a,b) and J. Barros(a,c),
(a) Ghent University, Gent, Belgium
(b) Universidad Autónoma de Nuevo León, Monterrey, Mexico
(c) Valladolid University, Valladolid, Spain

3:15 Coffee Break

3:45 “Development of Semi-Processed Electrical Steels for Compressor Motor and EI Lamination Cores”
Y-S. Hwang and L. Chang, China Steel Corporation, Kaohsiung, Taiwan, Republic of China

4:10 “Recent Progress on Electrical Steel Sheet for Eco-Design of Electrical Equipment”
T. Kubota, Nippon Steel Company, Futtsu, Chiba, Japan

4:35 “A Paradigm Shift in the Magnetic Test Criteria for Motors”
K. E. Blazek and T. A. Bloom, Ispat-Inland Steel Company, East Chicago, Illinois, United States

5:00 Wine and Cheese Party

Wednesday, May 15

Session 4: Use of Magnetic Effects in NDE
Session Chairman, Massimo Pasquale, Istituto Elettrotecnico Nazionale Galileo Ferraris

9:00 “Effect of Grain Size and Dislocation Density on Magnetic Properties and Application to NDE Monitoring of Tensile Strength and NDE of Welds”
M. J. Sablik, Southwest Research Institute, San Antonio, Texas, United States

9:25 “Use of Magnetoacoustic Emission for NDE of Creep Damage in Power Plant Applications”
B. Augustyniak, Technical University of Gdansk, Gdansk, Poland

9:50 Coffee Break

10:20 “Laser Ultrasonics, Microstructure, Magnetism and NDE”
A. Moreau, Industrial Materials Institute, National Research Council of Canada, Boucherville, Quebec, Canada

10:45 “Magnetic NDE Technologies for Pipeline Inspection”
A. Teitsma, Gas Technology Institute, Chicago, Illinois, United States

11:00 “Stress Effects and Magnetic NDE Techniques for Pipeline Applications”
L. Clapham, Queens University, Kingston, Ontario, Canada

11:35 Closing Remarks
Organizing Committee
R.R. Judd, Chairman
Judd Consulting Associates
J. Sanie, Coordinator
Illinois Institute of Technology
T. Bloom, Treasurer
Inland Steel
E. Hilinski
US Steel
Massimo Pasquale
Istituto Elettrotecnico Nazionale, Italy
V.R.V. Ramanan
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M. Komatsubara
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Nippon Steel Co.
C. Riviello
A. O. Smith
M. J. Sablik
Southwest Research Institute
D. Snell
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Hotel Information
Hotel Intercontinental Chicago
505 N. Michigan Ave.
Chicago, IL 60611
(312) 944-4100, (800) 628-2112
Transportation between Hotel Intercontinental and IIT will be provided by the hotel.

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.