2006 International Metallographic Contest Winners

Best In Show, Jacquet-Lucas Award

Analysis of 19th Century Boat Anchor Using Field Metallography Techniques

Ryan Deacon
Lehigh University
Department of Materials Science and Engineering
5 East Packer Ave
Bethlehem PA 18015

CLASS 1: Light Microscopy - Metals and Metal Alloys

1st Place

Analysis of 19th Century Boat Anchor Using Field Metallography Techniques
Ryan Deacon
Lehigh University
Department of Materials Science and Engineering
5 East Packer Ave
Bethlehem PA 18015

2nd Place

Martensitic Structures Produced by the Cryogenic Quenching of Oriented Single Crystals of an Fe-Ni-Cr Alloy
Lynn A. Boatner, Hu Longmire, Allison Gray
Materials Science & Technology Division
Oak Ridge National Laboratory
1 Bethel Valley Road, MS-6056, Bldg 3150
Oak Ridge, TN 37831

3rd Place

Metallographic Confirmation of a Martensite Boundary on the WRC-1992 Weld Constitution Diagram
Tim Anderson
Lehigh University
Department of Materials Science and Engineering
5 East Packer Ave
Bethlehem, PA 18015
Honorable Mention

Quasicrystalline Alloy Al-Cu-Fe
Mrs. Boncina Tonica
University of Maribor, Faculty of Mechanical Engineering
Smetanova ulica 17, SI-2000 Maribor, Slovenija

CLASS 2: Light Microscopy - All Other Engineering Materials

1st Place

Polycrystalline Glacier Ice
Rachel W. Obbard
Thayer School of Engineering at Dartmouth College
1420 North Street
Montpelier, Vermont 05602
and
Ian Baker
Thayer School of Engineering at Dartmouth College
8000 Cummings Hall
Hanover, NH 03755

2nd Place

no entries

3rd Place

no entries

Honorable Mention

no entries

CLASS 3: Electron Microscopy - Transmission and Analytical

1st Place

Precipitates with Peculiar Morphology Consisting of a Disk-Shaped Amorphous Core
Masahiko Nishijima, Kenji Hiraga Yoshida
Institute for Materials Research
Tohoku University
Sendai, 980-8577, Japan
and
Makoto Matsuura, Kazuya Konno, Mitsuhiko Yoshida
Miyagi National College of Technology
Nodayama Natori Miyagi, 981-1239, Japan
2nd Place

Dynamic Observation of Magnetization Process in Mn-Zn Ferrite by Electron Holography
T. Kasahara, H.S. Park, J.J. Kim, D. Shindo, H. Yoshikawa, T. Sato, K. Kondo
Institute of Multidisciplinary Research for Advanced Materials
Tohoku University
1-1, Katahira, 2-Chrome, Aobaku
Sendai 980-8577, Japan

3rd Place

no entries

Honorable Mention

no entries

CLASS 4: Electron Microscopy - Scanning

1st Place

Mineral Filaments in Ice
Rachel W. Obbard
Thayer School of Engineering at Dartmouth College
1420 North Street
Montpelier, Vermont 05602
and
Ian Baker
Thayer School of Engineering at Dartmouth College
8000 Cummings Hall
Hanover, NH 03755

2nd Place

Porous Alumina Ceramic
Rachel W. Obbard
Thayer School of Engineering at Dartmouth College
1420 North Street
Montpelier, Vermont 05602
and
Chris Pekor, Ian Nettleship
University of Pittsburgh
BENDM 848 Pittsburgh
Pittsburgh, PA 15260

3rd Place

Understanding the Growth Mechanism of Lanthanum Cobalt Based Mixed Ionic-Electron Conductors
Siddhartha Pathak  
Drexel University  
3141 Chestnut Street, LeBow 344, Philadelphia PA 19104

Honorable Mention

9-Fold Symmetry of the Surface Termination Steps of (La.9Sr.1).95Cr.85Mg.10Ni.05O3  
Rachel Rosten, Dr. Nina Orlovskaya  
Michigan Technological University  
1400 Townsend Drive  
Houghton, Michigan 49931-1295

CLASS 5: Unique, Unusual, and New Techniques in Microscopy

1st Place

STM Observation of Surface Atomic Arrangement and Surface Relief in Parent and Martensite Phases  
Yuichi Ozawa, Toshiyuki Ito, Hee Young Kim, Shuichi Miyazaki  
Institute of Materials Science  
Tsukuba University  
Tsukuba, 305-8573, Japan

2nd Place

Anomalous Surface Structures on ZnO Single Crystal Hexagonal Plates  
Lynn Boatner, Allison Gray  
Materials Science & Technology Division  
Oak Ridge National Laboratory  
1 Bethel Valley Road, MS-6056, Bldg 3150  
Oak Ridge, TN 37831  
and  
Miria Varela, Ulrike Diebold, Olga Dulub  
Department of Physics  
Tulane University

3rd Place

Crack Morphology of TiN Ceramic Film after Deformation  
Yukio Inokuti  
Steel Research Lab  
JFE Steel Corp.  
1, Kawasaki, Chuo, Chiba  
260-0835, Japan

Honorable Mention

Improved Jet Electropolishing and Thinning of TEM Foils using New Type Cathode Gun and Secondary Anode Leak Current Sensor
CLASS 6: Color Microscopy

1st Place

Thermochemical Reactions on the Zinc and Oxygen-Therminated Surfaces of ZnO -a fast Scintillator
Lynn A. Boatner, Hu Longmire, John Neal, Allison Gray
Center for Radiation Detection Materials & Systems
Oak Ridge National Laboratory
1 Bethel Valley Road, MS-6056, Bldg 3150
Oak Ridge, TN 37831

2nd Place

Engine Cylinder Liner
Dr. Asim Bag
# 05-03 Hong Leong Garden Condominium
85, West Coast Drive
Singapore 128 001

3rd Place

Development of Clear Ultrasonic Detectability by Aspiration Biopsy
Yukio Inokuti
Steel Research Lab, JFE Steel Corp.
1, Kawasaki, Chuo, Chiba 260-0835, Japan
and
Masaharu Oishi
Taigold Corp.
516 Yokota Sanbu, Chiba 289-1226, Japan
and
Hiroyuki Fukuda
Dept. of Medicine and Clinical Oncology
Graduate School of Medicine, Chiba University
Inohana 1-8-1, Chuo-ku, Chiba 260-0856, Japan

Honorable Mention

Vacuum Pump Shaft
Dr. Asim Bag
# 05-03 Hong Leong Garden Condominium
85, West Coast Drive
Singapore 128 001
CLASS 7: Artistic Microscopy - Color Only

1st Place

**Amoebic Steadite in Pearlite Sea**  
Dr. Asim Bag  
# 05-03 Hong Leong Garden Condominium  
85, West Coast Drive  
Singapore 128 001

2nd Place

**Aluminum - 40% Copper**  
Chris Samuel, Dr. Srinath Viswanathan, Dr. M. Shamsuzzoha  
University of Alabama  
Dept. of Metallurgical & Materials Engineering A-129 Bevill Building  
201 Seventh Ave. PO Box 870202  
Tuscaloosa, AL 35487-0202

3rd Place

**Coral Dream**  
Maria I. Lopez  
The University of Texas at El Paso  
Dept. of Metallurgical and Materials Engineering  
Engineering Science Complex Room M-201  
500 W. University Ave.  
El Paso, TX 79968-0520

Honorable Mention

no entries

CLASS 8: Artistic Microscopy - B&W Only

1st Place

**Terraced Fracture Landscape**  
Rick Noecker  
Lehigh University  
Department of Materials Science and Engineering  
5 East Packer Ave  
Bethlehem, PA 18015  
and  
Gerry Neugebauer  
Lockheed Martin Corp.
2nd Place

**Cellular Towers**
Rick Noecker
Lehigh University
Department of Materials Science and Engineering
5 East Packer Ave
Bethlehem, PA 18015
and
Gerry Neugebauer
Lockheed Martin Corp.

3rd Place

**Feeding of a Quasicrystal**
Mrs. Boncina Tonica
University of Maribor
Faculty of Mechanical Engineering
Smetanova ulica 17, SI-2000 Maribor, Slovenija

Honorable Mention

**Bat Bearing a Cross on it's Back**
Rick Noecker
Lehigh University
Department of Materials Science and Engineering
5 East Packer Ave
Bethlehem, PA 18015
and
Gerry Neugebauer
Lockheed Martin Corp.

**CLASS 9: Undergraduate Student - Metals and Metal Alloys**

1st Place and George L. Kehl Plaque

**Surface Termination Steps as Active Catalyst Sites in La.6Sr.4Fe.8Co.2O3**
Rachel Rosten, Dr. Nina Orlovskaya
Michigan Technological University
1400 Townsend Drive
Houghton, Michigan 49931-1295

2nd Place

no entries

3rd Place
CLASS 10: Undergraduate Student - All Other Engineering Materials

1st Place and George L. Kehl Plaque

Debris Analysis of the Space Shuttle Columbia
Katie Strader, Hubert Gibson, Emily Simonds, Benjamin Petersen, Mike Manrod
(all secondary school students attending an ASM Materials Camp)
and
Jaret Frafjord
Y12 National Security Complex
1010 Commerce Park
Oak Ridge, TN 37830

2nd Place

no entries

3rd Place

no entries

Honorable Mention

no entries

CLASS 11: Digital Microscopy

1st Place

Moons
Michael L. Morgan
ArvinMeritor Inc./Columbus Technical Center
950 W 450S Building 1
Columbus, IN 47201

2nd Place

Cast A356 Aluminum Alloy
Masakazu Kobayashi
Uesugi, Toda, Ohgaki, Kobayashi
Dept of Production Systems Eng.
Toyohashi University of Technology
3rd Place

**Stained Glass**
Erika V. Esquivel
The University of Texas at El Paso
Dept. of Metallurgical and Materials Engineering
Engineering Science Complex Room M-201
500 W. University Ave.
El Paso, TX 79968-0520

Honorable Mention

**Star Burst**
Sara M. Gaytan
The University of Texas at El Paso
Dept. of Metallurgical and Materials Engineering
Engineering Science Complex Room M-201
500 W. University Ave.
El Paso, TX 79968-0520

CLASS 12: DuBose-Crouse Award

**Al-Si Phase Diagram**
George Vander Voort
Buehler, Ltd.
41 Waukegan Rd.
Lake Bluff, IL 60044