

MARCH MEETING PROGRAM

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ANNUAL MARCH MEETING OF THE AMERICAN PHYSICAL SOCIETY

March 10–14, 2008
New Orleans, Louisiana

We welcome you to the 2008 March Meeting in New Orleans, Louisiana. The headquarters hotel is the New Orleans Marriott at 555 Canal Street, just steps away from the French Quarter. All non-technical APS-sponsored and satellite meetings will take place at the Marriott. Busing will be provided to the convention center from all hotels not within walking distance.

GENERAL INFORMATION

The scientific sessions for the March Meeting will be held at the New Orleans Convention Center. An outstanding scientific program will be presented consisting of more than 90 invited sessions and 550 contributed sessions at which approximately 6,500 papers will be presented. In addition, tutorials and workshops will be offered. A larger and enhanced exhibit show will round out the program during which attendees can visit vendors who will be displaying the latest products, instruments and equipment, and computer software, as well as scientific publications related to the research and application of physics.

PARTICIPATING APS UNITS

Divisions: Condensed Matter Physics; Materials Physics; Polymer Physics; Chemical Physics; Biological Physics; Fluid Dynamics; Computational Physics; and Atomic, Molecular and Optical Physics

Topical Groups: Instrument and Measurement Science; Magnetism and Its Applications; Statistical and Nonlinear Physics; Quantum Information

Forums: Industrial and Applied Physics; Physics and Society; History of Physics; International Physics; Education; Graduate Student Affairs

AMERICANS WITH DISABILITIES ACT STATEMENT

The APS wishes to take any steps required to ensure that no individual with a disability is excluded, denied services, segregated or otherwise treated differently due to the absence of auxiliary aids and services identified in the Americans with Disabilities Act. If any such services are necessary in order for you to participate in the March Meeting, please communicate your needs in advance to the APS Meetings Department.

PARENT'S/CHILDREN'S QUIET ROOM

Convention Center • Room B211
Monday, March 10 – Thursday, March 13 • 7:00am – 6:00pm
Tuesday, March 14 • 7:00am – 3:00pm

At the March Meeting APS will designate a small room for parents who are bringing young children to the meeting. The purpose of the room is to provide a quiet place for parents of infants and young children to come for quiet time and relaxation with their

children. This is not intended to be a playroom. The room will be furnished with comfortable furniture and water. Children must be supervised by a parent at all times.

REGISTRATION LOCATION/HOURS

Convention Center • Lobby A

The APS Registration Desk will open and close at the following times.

Sunday, March 9..... 2:00pm – 7:00pm
Monday, March 10 7:00am – 5:00pm
Tuesday, March 11 7:00am – 5:00pm
Wednesday, March 12..... 7:30am – 4:00pm
Thursday, March 13 7:30am – 3:00pm
Friday, March 14..... 7:30am – 10:00am

BADGE MONITORING

All attendees must register for the meeting. Attendees must wear their badges at all times. Security personnel will be checking for badges before allowing admission to the sessions and the exhibit show. Attendees without badges will not be admitted to sessions and exhibits. If you lose your badge, please go to the APS registration desk for a new one. We will give you one replacement badge free. After that replacement badges will cost \$10.00.

SHUTTLE BUS SERVICE

Most hotels in the APS housing block require busing service to the convention center. Shuttle bus service will begin from the hotels listed below on Sunday, March 9 at 1:30pm. The last trip from the hotels to the convention center on Sunday will be at 6:30pm. Registration opens at the convention center at 2:00pm in Lobby A. A schedule of the shuttle busses will be available at your hotel upon your arrival, and printed bus schedules will be available at the convention center when you arrive to register. The following hotels will have shuttle bus service:

New Orleans Marriott (HQ)
JW Marriott
Chateau Sonesta (French Quarter)
Chateau LeMoyne (French Quarter)
DoubleTree Hotel
Drury Hotel
Hilton Garden Inn (French Quarter)
Holiday Inn (French Quarter)
Le Pavillion
Staybridge Suites

CD-ROM PROGRAM

There are a limited number of copies of the Scientific Program on CD-Rom. If you would like one go to the APS Registration Desk.

APS MEMBERSHIP BOOTH

Convention Center • Lobby A

The APS Membership Department staff will be on hand to answer questions about APS Membership, journal subscriptions and other new services.

Monday – Wednesday 8:00am – 5:00pm
Thursday..... 8:00am – 3:00pm

APS SOUVENIR STORE

Convention Center • Lobby A

Come browse our t-shirts, bumper stickers and more.

Monday – Wednesday 9:00am – 5:00pm
Thursday..... 8:00am – 1:00pm

NEW ORLEANS CITY INFORMATION DESK

Convention Center • Lobby A

The New Orleans Convention and Visitors Bureau will host an information desk during the March Meeting. Stop by to get a city map and inquire about sightseeing opportunities.

Sunday, March 9..... 2:00pm – 6:00pm
Monday, March 10 11:00am – 5:00pm
Tuesday, March 11 11:00am – 5:00pm

RESTAURANT RESERVATIONS DESK

Convention Center • Lobby A

If you are looking to make dinner reservations at one of the many fine New Orleans restaurants stop by the Restaurant Reservations Desk for information on restaurant cuisine, cost, and location. They'll make your dinner reservations for you.

BUSINESS CENTER

The New Orleans Convention Center business center is located in the Lobby E Concourse. The business center offers a full range of services and is open Monday through Friday 7:30am-5:30pm. Lobby E is a bit of a walk from Lobby A, so you might consider using the business office in your hotel, or the Marriott across the street from the Convention Center.

APS EXHIBIT SHOW/ATTENDEE LOUNGE

Convention Center • Exhibit Hall A

Monday, March 10 10:00am – 5:00pm
Tuesday, March 11 10:00am – 5:00pm
Wednesday, March 12 9:00am – 4:00pm

The annual exhibit show days are Monday through Wednesday. The exhibits are an important adjunct to the meeting, offering information on a wide variety of physics-related products and services. In addition, book and periodical publishers will be participating as exhibitors. The poster sessions, and food concessions will be located in the exhibit hall, as will the E-mail Pavilion. A wine and cheese reception will be held in the exhibit hall on Monday and Tuesday from 4:00pm-5:00pm. Plan to stop by to visit the exhibits, view the posters and enjoy the refreshments.

NOTE: You must display your badge to be admitted to the exhibit hall.

KAVLI FOUNDATION SPONSORED COFFEE BREAK

Monday, March 10 • 10:45am – 11:30am
Convention Center • Exhibit Hall A

APS gratefully acknowledges the Kavli Foundation for sponsoring this coffee break for March Meeting attendees.

SPECIAL ART EXHIBIT**Modern Physics and the Mystery of Reality**

Monday, March 10 – Tuesday, March 11 • 10:00am – 5:00pm
Wednesday, March 14 • 9:00am – 4:00pm
Convention Center • Exhibit Hall A
Visual Works inspired by Modern Physics
Co-curated by Melody Guichet and Kristin Malia Krolak

This is a collection of 16 original paintings, a collaboration between five physicists from the Department of Physics & Astronomy at Louisiana State University, Baton Rouge, and 16 painters from six Louisiana universities. The physicists wrote short descriptions of concepts such as “relativity of time”, “flying near a black hole”, “superposition”, “quantum entanglement”, “flavor oscillations”, “Schrodinger’s cat”, etc., which the painters rendered in their own medium. The display puts these words by physicist and painter alongside the paintings.

In the words of curator and painter Melody Guichet: “The presentation of these ideas to the greater community and the involvement of a wide range of participants is creating the opportunity to impact many people from a broad spectrum of backgrounds. A major intent of the exhibition is to shed light, in an interesting way, on some of these startling and provocative revelations in modern physics. We also hope to foster a spirit of interactive inquiry among creative thinkers in all fields of interest. Finally, the link between these two fields for me is this: artists spend their lives interpreting reality. The science of physics does the same.”

This project has been supported by the Louisiana College of Art and Design, the LSU School of Art, the LSU Department of Physics & Astronomy, the LSU Center for Computation and Technology, and Coca-Cola.

A-V OFFICE

Convention Center • Room 201

SPEAKER-READY ROOM

Convention Center • Room 202

The speaker-ready room will be open as follows:

Sunday, March 9.....	1:00pm – 7:00pm
Monday, March 10.....	7:00am – 5:00pm
Tuesday, March 11.....	7:00am – 5:00pm
Wednesday, March 12.....	7:00am – 5:00pm
Thursday, March 13.....	7:00am – 5:00pm
Friday, March 14.....	7:00am – 12:00noon

AUDIO VISUAL EQUIPMENT

All rooms will be equipped with an LCD projector, overhead projector, screen, lavalier microphone, and pointer. If you plan on doing a PowerPoint presentation, please bring your presentation on your own laptop computer, and be sure to visit the Speaker Ready Room to run through your presentation to ensure that it goes smoothly during the session. (You might also want to bring your presentation on vugraphs as a back-up to your computer presentation.) When you arrive at the session in which you are speaking, if you are using the LCD projector, please have your laptop turned on and ready to go. Additional A-V may be ordered on-site at the meeting directly through the A-V company. The cost of additional equipment must be covered by the speaker. Note: You are not allowed to bring/use your own projectors at the meeting.

EMAIL SERVICE

An email pavillion will be set up in the exhibit hall for attendees to retrieve and send email messages on Monday, Tuesday, and Wednesday during exhibit hours only. On Thursday, email service will be available during registration hours near the APS registration desk. Email access is available in the business offices at most hotels for a fee. Please be advised that email access is provided as a service to attendees, and that we cannot provide unlimited access to email stations, both in terms of the number of e-mail stations provided and the times they are available.

Convention Center • Exhibit Hall A
Located in Lobby A near APS Registration

Monday, March 10.....	10:00am – 5:00pm
Tuesday, March 11.....	10:00am – 5:00pm
Wednesday, March 12.....	9:00am – 4:00pm
Thursday, March 13.....	7:00am – 6:00pm
Friday, March 14.....	7:00am – 12:00noon

WIRELESS SERVICE

APS will sponsor complimentary wireless in the public space in the New Orleans Convention Center. Wireless service will not be available in the meeting rooms.

APS JOB FAIR

Monday, March 10 • 10:00am – 5:00 pm
Tuesday, March 11 • 10:00am – 5:00 pm
Convention Center • Exhibit Hall A

The Job Fair is the best place to connect with employers and job seekers from all areas of physics. Attendees are encouraged to visit the Job Fair to take advantage of our many recruiting services:

- Showcase your company with a Recruitment Exhibit
- Search our high-powered job and resume database
- Network and interview with companies and job candidates on-site
- Create alerts to inform you of new resumes and jobs
- Manage your interview calendar online

The Job Fair is free of charge to candidates seeking employment. For more information or registration, please visit www.aps.org/careers/employment/jobfairs.cfm or contact Alix Brice at:

APS Job Fairs
One Physics Ellipse
College Park, MD 20740
Tel: 301-209-3187
Fax: 301-209-0841
Email: jobfairs@aps.org

PRESS ROOM

Convention Center • Exhibit Hall B2-2
Monday, March 10 – Thursday, March 13..... 8:00am – 5:00pm
Phone: 504-670-6800
Fax: 504-670-6804

NEWS CONFERENCE ROOM

Convention Center • Exhibit Hall B2-2

A schedule of news conferences can be obtained from the Press Room.

PRE-MEETING PROGRAMS

DPOLY SHORT COURSE: HIGH-THROUGHPUT APPROACHES TO POLYMER PHYSICS AND MATERIALS SCIENCE

Pre-registration only — no on-site registration

Saturday, March 8/Sunday, March 9 • 8:00am – 5:00pm

La Galerie 4

Marriott Hotel • 555 Canal Street

TUTORIALS

Pre-registration only — no on-site registration for tutorials

Sunday, March 9

Marriott Hotel • 555 Canal Street

Tutorial Program Chair: David Jiles, Wolfson Centre for Magnetism, Cardiff University, Cardiff, UK. Eight half-day tutorials will be presented. You must pre-register for tutorials—you will not be able to register on-site for tutorials.

A.M. Tutorials • 8:30am – 12:30pm

T1 Basics of Density Functional Theory, Static and Time-Dependent

La Galerie 6

T2 Spintronics

La Galerie 3

T3 Fundamentals of Quantum Entanglement

La Galerie 2

T4 Advances in Neutron Scattering

La Galerie 1

P.M. Tutorials • 1:30pm – 5:30pm

T5 Will Carbon Replace Silicon? The Future of Graphitic Electronics

La Galerie 3

T6 Nanomagnetism: Manufacture, Physics, Devices, Modeling

La Galerie 6

T7 Quantum Noise, Quantum Limited Measurements, and Conditional Quantum Evolution

La Galerie 2

T8 Ethics Education

La Galerie 1

5TH APS WORKSHOP ON OPPORTUNITIES IN BIOLOGICAL PHYSICS

Sunday, March 9 • 9:00am – 4:30pm

Balcony I – J

Marriott Hotel • 555 Canal Street

Organized by APS Division of Biological Physics

Life provides a wellspring of opportunities for physical analysis. This workshop will introduce two exciting areas in biological physics: biomechanics and genetic networks. Topics will include motion

science, the physics of walking, artificial hands, the physics of cell shape, the dynamics and noise in genetic and signal transduction networks. Speakers from academia and industry will provide extensive tutorial overviews, accessible to non-specialists. There will be ample time for participants to discuss their current and future scientific and career directions with the speakers.

The workshop is aimed at all physicists who are curious about the interface between physics and biology, especially graduate students and post-docs who are eager to apply their expertise in novel ways in the life sciences. The workshop will start at 9:00am and run until approximately 4:30pm. The pre-registration deadline is February 11, 2008. Pre-registration fees are \$50 for students, \$75 for postdoctoral researchers and \$100 for all others. The fee includes continental breakfast and a box lunch. Limited on-site registrations will be allowed with a late fee (\$25) for each category and cash payment only (no credit cards). Availability of box lunches is not guaranteed for on-site registrants.

Speakers

K. C. Huang, *Princeton University*

“The Biophysical Origins of Spatio-temporal Network Dynamics”

Art Kuo, *University of Michigan*

“Mechanics and Control of Human Locomotion: Let your Physics do the Walking?”

John Milton, *Claremont McKenna College*

“Motion Science: A New Frontier for Physicists”

Gurol Suel, *UT Southwestern*

“Cellular Differentiation: Noisy and Dynamic, but Tunable”

Yuhai Tu, *I.B.M. Watson Research*

“From Molecules to Behavior: A Single Cell’s Memory, Computation and Taxis”

Francisco Valero-Cuevas, *U.S.C.*

“Why Haven’t We Made Better Artificial Hands?”

Steering Committee

Chair: Stephen Quake, Vice-Chair, DBP (quake@stanford.edu)

Members: Shirley Chan, Secretary-Treasurer, DBP

(ChanShirley@mailaps.org)

John Milton, Member-at-Large, DBP

(jmilton@jsd.claremont.edu)

Chao Tang, Member-at-Large, DBP

(chao.tang@ucsf.edu)

Financial support provided in part by: Agouron Foundation

PROFESSIONAL SKILLS DEVELOPMENT WORKSHOP FOR POST-DOCS AND NEWLY-TENURED OR TENURE-TRACK WOMEN PHYSICISTS

Sunday, March 9 • 8:00am – 5:00pm

St. Charles Room

Marriott Hotel • 555 Canal Street

Workshop Attendees Reception at 5:00pm

Mardi Gras C

Marriott Hotel • 555 Canal Street

APS is pleased to offer a series of workshops designed to provide women physicists with professional training in effective negotiation, communication and leadership skills. In addition, the workshops offer a special opportunity for networking. Past workshops have been well-attended and have received very enthusiastic evaluations from the participants.

This series of workshops will offer sessions aimed at post-doctoral associates and sessions aimed at women faculty in physics in US institutions. Women of color are especially encouraged to participate. These workshops are intended to produce more women leaders in physics through professional training and networking, to achieve their full potential, advance in their careers and reach the top ranks in their profession. In 2008, the two professional skills development workshops will offer one session aimed at postdoctoral associates and one session aimed at newly tenured (or tenure track) women faculty in physics.

WORKSHOP: OPPORTUNITIES IN ENERGY RESEARCH

Sunday, March 9 • 8:30am – 6:30pm
Balcony M-N
Marriott Hotel • 555 Canal Street

This is a one-day workshop for graduate students and post-docs that will highlight the contributions physics-related research can make toward meeting the nation's energy needs in environmentally friendly ways. The workshop will feature plenary talks by leaders in the field of energy research with lots of time for discussion, a "lunch with the experts," a panel on careers and funding for energy research, and a late afternoon informal reception.

This workshop is aimed at showing physics graduate students and post-docs how they can contribute to environmental solutions while doing exciting scientific research. We hope to attract young physicists who are concerned about the environment and who would like to find ways to use their scientific and quantitative skills to help meet the environmental challenges that the world faces.

The US Department of Energy has provided funding that will enable APS to partially defray the expenses of those who need financial assistance to attend the workshop.

FIAP ENTREPRENEURIAL WORKSHOP

Sponsored by the Forum on Industrial and Applied Physics
Sunday, March 9 • 1:30pm – 5:00pm
Mardi Gras E
Marriott Hotel • 555 Canal Street

Overview and Goals:

If you have an idea for a product or service and would like to take it to market and profitability, come to this free workshop and panel discussion where you will hear sage advice from experts on starting and building a business, intellectual property, financing, technology transfer, and assistance. This workshop is open to all: students, faculty, and non-academics. Even if you currently do not have an idea that you want to convert into an opportunity, you might become inspired! Bring your questions and get answers that will help you as an entrepreneur and improve your position. If you are interested in attending, go to info@chem-consult.com.

WORKSHOP: WRITING AN EFFECTIVE OP-ED

Sunday, March 9 • 2:00pm – 4:30pm
Bacchus Room
Marriott Hotel • 555 Canal Street

Interested in learning how to write a great op-ed? Then register for this op-ed workshop to be conducted by Annette Naake Sisco, Op-ed Editor of the New Orleans Times-Picayune newspaper. The workshop will offer tips on how to craft a well-written piece that's sure to capture an editor's attention. To register contact Tawanda Johnson: tjohnson@aps.org.

CAREER WORKSHOP

Sunday, March 9 • 5:00pm – 8:00pm
Mardi Gras G – H
Marriott Hotel • 555 Canal Street
Cost: Free

Do you need some useful guidance that will take your job search to the next level? Come to this free interactive Career Workshop where you will learn the fine points of networking to tap into the hidden job market, how to improve your resume, and ways to ace your interview, plus a host of other helpful hints. There will also be opportunities to put your new networking skills to practice.

APS MEETINGS / EVENTS

(In chronological order)

CONTACT CONGRESS

Sunday, March 9 • 3:00pm – 6:00pm
 Monday, March 10 – Wednesday, March 12 • 9:00am – 6:00pm
 Thursday, March 13 • 9:00am – 1:00pm
 Convention Center • 2nd Level
 Sponsored by the Division of Condensed Matter Physics and
 the Division of Materials Physics

Q: What's the best-spent minute at the March meeting?

A: Stopping by the Contact Congress booth to sign your name to letters to your Congressional delegation on the importance of federal funding for basic research. It takes only a minute. By doing so, you are making your voice heard in Washington and helping to influence the funding levels for physics research and education. To amplify the impact, the APS Washington Office follows up each letter with a call or visit to congressional staff.

The strongest and most persuasive advocates on Capitol Hill come from a Senator or Representative's constituents. That means you! If you live in the United States, you are qualified to write to your members of Congress.

Contact Congress is run by the APS Washington Office. If you have any questions about what is happening in DC, just stop by to ask the experts.

INTEGRATED COMPUTATIONAL MATERIALS ENGINEERING SESSIONS

Sunday, March 9 – Wednesday, March 12
 New Orleans Convention Center

In March 2008, the Minerals, Metals and Materials Society (TMS) and the American Physical Society (APS) will be holding overlapping technical conferences at the New Orleans Convention Center. Between March 9 and March 12, TMS and APS will be holding collaborative programming highlighting advancements in integrated computational materials engineering (ICME).

The following symposia will be open to attendees of both the TMS 2008 Annual Meeting and the APS March Meeting 2008:

- Creating the ICME Cyberinfrastructure: An Interdisciplinary Technology Forum (TMS)
- Frontiers of Computational Materials Science (APS)
- 9th Global Innovations Symposium: Trends in Integrated Computational Materials Engineering for Materials Processing and Manufacturing (TMS)
- Materials Informatics: Enabling Integration of Modeling and Experiments in Materials Science (TMS / APS)
- Computational Thermodynamics and Kinetics (TMS)

KAVLI FOUNDATION SPONSORED COFFEE BREAK

Monday, March 10 • 10:45am – 11:30am
 Convention Center • Exhibit Hall A

APS gratefully acknowledges the Kavli Foundation for sponsoring this coffee break for March Meeting attendees.

GALLERY OF NON-LINEAR IMAGES

Monday, Tuesday, Wednesday
 During Exhibit Hours
 Convention Center • Exhibit Hall A

The 5th annual Gallery of Nonlinear Images consists of aesthetically pleasing, insightful displays of pictures, computers graphics, and video clips submitted by attendees. Outstanding entries, selected by a panel of referees for originality and ability to convey and exchange information, will be honored during the meeting, placed on display at the Annual meeting of the Division of Fluid Dynamics, and will appear in the annual Gallery of Nonlinear Images article in the December 2008 issue of Chaos.

APS JOURNALS BOOTH/TALK TO THE APS JOURNAL EDITORS

Booths #601-603
 Monday, March 10 – Wednesday, March 12 • 10:00am – 5:00pm
 Convention Center • Exhibit Hall A

Editors from Physical Review Letters, Physical Review B, Physical Review E, Physical Review Special Topics: Physics Education Research, and Reviews of Modern Physics and members of the technical and marketing staffs will be on hand at the APS Journals Booth located in the exhibit hall to answer questions on all matters pertaining to the APS journals. Access to the online journals will be available. Come help us celebrate 50 years with Physical Review Letters. Your ideas, concerns, and suggestions are welcome.

We look forward to interacting with you on any journal matters, and to the opportunity to thank you in person for your contributions as an author or reviewer. We are always pleased to receive feedback on our journals, to hear your ideas and concerns, and to learn more from our community about all aspects of physics research. We hope you will be able to drop by! The APS Booth will be open throughout the Exhibit Show for information on the APS and its journals.

WINE AND CHEESE RECEPTIONS

Monday, March 10 and Tuesday, March 11 • 4:00pm – 5:00pm
 Convention Center • Exhibit Hall A

AWARDS PROGRAM

Monday, March 10 • 5:45pm – 6:45pm
 Convention Center • Room 206

Prizes and awards will be bestowed on several individuals for outstanding contributions to physics. Please plan on attending the Awards Program and join us in honoring these individuals. The names of the awards and awardees will be included in the printed program distributed at the meeting and in the on-line program to be posted to the web in January. The Awards Program will be followed by the Welcome Reception at 7:00pm in Exhibit Hall B.

WELCOME RECEPTION

Monday, March 10 • 6:45pm – 8:00pm
 Convention Center • Exhibit Hall B2

All attendees are invited.

SPECIAL SYMPOSIUM - SESSION G I
25 Years of Scanning Probe Microscopy

Monday, March 10 • 8:00pm – 10:00pm
 Carondelet Room
 Marriott Hotel • 555 Canal Street

Speakers:

Don Eigler, *IBM*
 Classical Computation in Quantum Nanostructures: A Long
 Road to an Uncertain Future

Roland Wiesendanger, *University of Hamburg*
 Scanning Probe Microscopy for Spin Mapping and Spin
 Manipulation on the Atomic Scale

Sergei Sheiko, *University of North Carolina*
 Understanding Polymer Properties Through Imaging
 of Molecules

APS-SPONSORED COFFEE BREAK

Tuesday, March 11 • 10:00am – 11:00am
 Convention Center • Exhibit Hall A

ESTATE PLANNING SEMINAR

Tuesday, March 11 • 1:00pm – 2:30pm
 Convention Center • Room 226

**MEET THE EDITORS OF AIP AND APS AND CELEBRATE
50 YEARS OF PRL**

Tuesday, March 11 • 6:30pm – 8:30pm
 Balcony L – M
 Marriott Hotel • 555 Canal Street

Physical Review Letters turns 50 in 2008, and is still going strong. Please join the editors of the journals of the American Physical Society and the American Institute of Physics, and our special guests from the Physical Society of Japan, in celebrating 50 years of publication of interesting and important physics. Refreshments will be served. Please note that there will be a special symposium on the History of PRL on Tuesday morning at the convention center. (Session J2)

Journals of the American Institute of Physics:

Applied Physics Letters
 Biomicrofluidics
 Chaos
 Journal of Applied Physics
 The Journal of Chemical Physics
 Journal of Mathematical Physics
 Physics of Fluids
 Physics of Plasmas
 Review of Scientific Instruments

Journals of The American Physical Society:

Physical Review A
 Physical Review B
 Physical Review E
 Physical Review Focus
 Physical Review Letters
 Physical Review Special Topics – Physics Education Research
 Reviews of Modern Physics

PHYSICS SING-ALONG/LISTEN-ALONG

Tuesday, March 11 • 8:30pm – 9:30pm
 Regent Room
 Marriott Hotel • 555 Canal Street

TOWN HALL MEETING - SESSION T I 6
Materials Physics at Gigabar Pressures

Sponsoring Unit: GSCCM
 Wednesday, March 12 • 5:30pm – 7:30pm
 Convention Center • Room 208
 Chair: Russell Hemley, *Carnegie Institution for Science*

Speakers

Raymond Jeanioz, *UC Berkeley*
 David Stevenson, *Caltech*
 Richard Martin, *UIUC*

All attendees are invited.

SPECIAL SYMPOSIUM - SESSION T I
From Quarks to Cosmos: Breaking News at the Interface of Particle, Nuclear and Astrophysics

Wednesday, March 12 • 7:30pm – 9:15pm
 Carondelet Room
 Marriott Hotel • 555 Canal Street

Speakers

Joe Lykken, *Fermilab*
 Michael Turner, *University of Chicago*
 Michael Wiescher, *University of Notre Dame*

Profound connections join scales all the way from the very smallest to the very largest that we can explore, and these connections now link the fields of astrophysics, cosmology, nuclear physics and particle physics. Research that crosses these traditional boundaries are beginning to reveal new states of matter, how the Universe began, the role of neutrinos in shaping the Universe, nature of space and time and the unification of the forces, and the nature of dark matter and dark energy. These three talks will showcase these connections, highlight recent exciting results, and look toward the future.

APS EVENTS FOR SPECIAL GROUPS

(In chronological order)

COMPANION'S WELCOME BREAKFAST

Monday, March 10 • 8:30am – 10:00am
 St. Charles Room
 Marriott Hotel • 555 Canal Street
 Cost: Free to companions and families of attendees only.

Companions of the attendees of the March Meeting are invited to a complimentary breakfast to meet other companions and learn about the city of New Orleans. Presentations will be made by a representative of the New Orleans Convention and Visitors Bureau. At the breakfast you will receive information about the sites and attractions in the city. Restricted to companions and families only —registered meeting attendees not admitted.

CSWP/FIAP NETWORKING BREAKFAST FOR WOMEN IN INDUSTRY

Tuesday, March 11 • 7:30am – 9:30am
 St. Charles Room
 Marriott Hotel • 555 Canal Street
 Cost: \$15; \$5 (students) — Seating is limited.

DCMP/DMP/DCOMP/DCP FELLOWS AND AWARD WINNERS RECEPTION

Tuesday, March 11 • 5:30pm-7:00pm
 Mardi Gras D-E
 Marriott Hotel • 555 Canal Street

STUDENT RECEPTION

Sponsored by APS and the Forum on Graduate Student Affairs (FGSA)
 Tuesday, March 11 • 5:30pm – 6:30pm
 Convention Center • Exhibit Hall B2 -1

All students are welcome. Plan to attend and socialize with your fellow students and enjoy the refreshments. The Forum on Graduate Student Affairs (FGSA) will present a short program highlighting their latest activities.

FORUM ON INTERNATIONAL PHYSICS (FIP) RECEPTION

Tuesday, March 11 • 6:00pm– 8:00pm
 Mardi Gras G – H
 Marriott Hotel • 555 Canal Street

COM/CSWP DESSERT RECEPTION

Tuesday, March 11 • 7:00pm – 8:30pm
 Mardi Gras B
 Marriott Hotel • 555 Canal Street

Enjoy a dessert buffet, learn about the work of the Committee on Minorities in Physics and the Committee on the Status of Women in Physics, network with colleagues, and unwind after a long day of sessions.

TUTORIAL FOR AUTHORS AND REFEREES

Wednesday, March 12 • 9:00am – 10:30am
 Convention Center • Room 226

Editors from Physical Review Letters and Physical Review will provide useful information and tips for our less experienced referees and authors. The information presented will be relevant to anyone who is looking to submit to or review manuscripts for any of the APS journals, or to anyone who would like to add to their knowledge and experience of the authoring and refereeing processes. Topics for discussion will include:

- how to write good manuscripts and useful referee reports;
- differences between manuscripts and referee reports for PRL and PR;
- the roles of authors and referees in the review process, etc.

Following a short presentation from the editors, there will be a moderated discussion of these and other topics. Questions from the audience will be most welcome. Refreshments will be served.

STUDENTS LUNCH WITH THE EXPERTS

Wednesday, March 12 • 1:00pm – 2:30pm
 Convention Center • Exhibit Hall B2-1

Students can sign up on-site to enjoy complimentary box-lunch while participating in an informal discussion with an expert on a topic of interest to them. Topics are listed on page 17 Sign-up for Lunch with the Experts will begin on Monday, March 10 at 1:00pm at the APS registration desk, and will be on a first-come, first-served basis. Attendance is limited to eight students per topic.

APS UNIT BUSINESS MEETINGS

TUESDAY, MARCH 11

5:45pm – 6:45pm
Convention Center

GQI Business Meeting Room 207
DBP Business Meeting Room 208
DPOLY Business Meeting Room 210
GSCCM Business Meeting Room 215
GMAG Business Meeting Room 219
G SNP Business Meeting Room 221
FIAP Business Meeting Room 227
GIMS Business Meeting Room 228

TUESDAY, MARCH 11

7:00pm – 8:00pm
Marriott Hotel • 555 Canal Street

DCP Business Meeting Beauregard Room
DCOMP Business Meeting Galvez Room
DMP Business Meeting Audubon Room
DCMP Business Meeting Jackson Room

SATELLITE MEETINGS

(ancillary events sponsored by non-APS groups)

COMMERCIAL WORKSHOP INTRODUCTION TO DOING PHYSICS WITH MATHEMATICA 6

Sponsored by Wolfram Research
 Sunday, March 9 • 2:00pm – 5:00pm
 Mardi Gras F
 Marriott Hotel • 555 Canal Street
 Cost: \$50
 To register go to: www.wolfram.com/aps

CSMN MEETING

Sunday, March 9 • 4:00pm – 8:00pm
 Jackson Room
 Marriott Hotel • 555 Canal Street

COMMERCIAL WORKSHOP HARMONIX IMAGING FOR RAPID MATERIAL MAPPING

Sponsored by Veeco Instruments
 Monday, March 10 • 6:45pm – 8:00pm
 Balcony I
 Marriott Hotel • 555 Canal Street

ELECTRONIC STRUCTURE WORKSHOP: ADVISORY COMMITTEE MEETING

Monday, March 10 • 8:00pm – 10:00pm
 Bacchus Room
 Marriott Hotel • 555 Canal Street

OPEN MEETING OF ADVANCED LAB INSTRUCTORS

Tuesday March 11 • 5:30pm – 7:30pm
 Bacchus Room
 Marriott Hotel • 555 Canal Street

RESEARCH CORPORATION RECEPTION

Tuesday, March 11 • 5:30pm – 7:30pm
 St. Charles Room
 Marriott Hotel • 555 Canal Street

ALUMNI REUNIONS

Tuesday, March 11 • 6:00pm – 8:00pm
 Marriott Hotel • 555 Canal Street

Brown University..... Mardi Gras C
 Cornell University..... La Galerie 3
 IBM..... La Galerie 6
 University of Illinois..... La Galerie 4-5
 Michigan State Mardi Gras A
 Yale University Mardi Gras F
 State of Florida Universities..... La Galerie 2
 Boston University Bonaparte

AMERICAN CHAPTER OF THE INDIAN PHYSICS ASSOCIATION

Tuesday, March 11 • 7:30pm – 9:30pm
 La Galerie 1
 Marriott Hotel • 555 Canal Street

RSI EDITORIAL BOARD MEETING

Wednesday, March 12 • 12:00noon – 2:00pm
 Balcony L
 Marriott Hotel • 555 Canal Street

FUNDING OPPORTUNITIES IN NSF'S DIVISION OF MATERIALS RESEARCH

Wednesday, March 12 • 5:45PM – 7:15pm
 Balcony L
 Convention Center • Room 209

INSTITUTE OF PHYSICS CHINESE ACADEMY OF SCIENCES RECEPTION

Wednesday, March 12 • 6:30pm – 9:00pm
 Balcony M-N
 Marriott Hotel • 555 Canal Street

JOURNAL OF POLYMER SCIENCE PART B EDITORIAL BOARD MEETING

Wednesday, March 12 • 6:30pm – 8:00pm
 Balcony L
 Marriott Hotel • 555 Canal Street

STUDENTS LUNCH WITH THE EXPERTS

Wednesday, March 12 • 1:00pm – 2:30pm
Convention Center • Exhibit Hall B2-1

Students can sign up on-site to enjoy complimentary box-lunch while participating in an informal discussion with an expert on a topic of interest to them. Sign-up will take place beginning on Monday, March 10 at 1:00 p.m. at the APS registration desk, and will be on a first-come, first-served basis. Attendance is limited to eight students per topic.

Topics Sponsored by the Division of Materials Physics (DMP)

1. **Laura Greene**
University of Illinois
High-Temperature Superconductivity: Transforming Science, Policy and the Power Grid
2. **Dan Dahlberg**
University of Minnesota
Condensed Matter Experimentalist
3. **Sam Bader**
Argonne National Labs
Nanomagnetism
4. **Stuart Wolf**
University of Virginia
Spintronics—Is it the “Holy Grail” for Electronics Beyond Moore’s Law?
5. **Suni Sinha**
UCSD
Synchrotron and Neutrons

Topics Sponsored by Division of Condensed Matter Physics (DCMP)

6. **Mark Meisel**
University of Florida
Magnetism: Molecule-Based Systems Where Physics Meets Chemistry
7. **Robert McMichael**
NIST
Magnetic Dynamics
8. **Eric Fullerton**
UCSD
Magnetic Nanotechnology

9. **Alan Dorsey**
University of Florida
Supersolids
10. **Karin Dahmen**
University of Illinois
Non-equilibrium Dynamical Systems
11. **Nitin Samarth**
Penn State
Magnetic Semiconductors and Molecular Beam Epitaxy
12. **Ying Liu**
Penn State
Frontiers in Superconductivity Research
13. **Jun Zhu**
Penn State
Electronic Properties on Nanometer Scale Materials

Topics Sponsored by Topical Group on Magnetism (GMAG)

14. **James Rhyne**
LANL
What’s Cool About Neutron Scattering?
15. **Michael Pechan**
Miami University
Anisotropy in Magnetic Nanostructures
16. **Stephen Hill**
University of Florida
Molecular Magnets

Topics Sponsored by Topical Group of Quantum Information (GQI)

17. **Dave Bacon**
University of Washington
Paul Kwiat
University of Illinois
Quantum Information and Quantum Computation

Topics Sponsored by Division of Computational Physics (DCOMP)

18. **Richard Martin**
University of Illinois
Computational Physics: Electronic Structure
19. **David Ceperley**
University of Illinois
Computational Physics: Challenges in Quantum Monte Carlo
20. **Matthias Troyer**
ETH Zurich
Computational Physics: Strongly Correlated Quantum Systems
21. **Francois Gygi**
University of California, Davis
Computational Physics: First-principles Simulations on Petascale Computers

Topics Sponsored by Topical Group on Statistical and Non-linear Physics (GSNP)

22. **Jennifer Schwarz**
Syracuse University
What’s Up with Correlated Percolation?

PRIZES AND AWARDS

Award Session

Monday, March 10 • 5:45pm – 6:45pm

Convention Center • Room 206



DAVID ADLER AWARD

Session A3I

Karin Rabe
Rutgers University

For research, writings and presentations on the theory of structural phase transitions and for the application of first-principles electronic structure methods to the understanding of technologically important phenomena in ferroelectrics.



JOHN DILLON MEDAL

Session L18

Kari Dalnoki-Veress
McMaster University

For significant and innovative experiments in glass formation and polymer crystallization at the nanoscale.



LEROY APKER AWARD

Session D15

Bryce Gadway
Colgate University

Creation and measurement of a single-proton two-qubit state to test a Bell-Kochen-Specker inequality.



DANNIE HEINEMAN PRIZE

Session U1

Mitchell Feigenbaum
Rockefeller University

For developing the theory of deterministic chaos, especially the universal character of period doubling, and or the profound influence of these discoveries on our understanding of nonlinear phenomena in physics.



OLIVER BUCKLEY PRIZE

Session J1

Mildred Dresselhaus
Massachusetts Institute of Technology

For pioneering contributions to the understanding of electronic properties of materials, especially novel forms of carbon.



FRANK ISAKSON PRIZE

Session U1

Joseph Orenstein
University of California, Berkeley

Session U1

Zeev Valentine Vardeny
University of Utah

For pioneering contributions to the understanding of optical phenomena in complex materials including conducting polymers, semiconductors, and high temperature superconductors.



DELBRUCK PRIZE

Session B7

Steven Block
Stanford University

Citation: For his originality in the direct measurement of forces and motions in single biomolecular complexes undergoing the nucleoside triphosphate hydrolysis reactions that drive intracellular transport, cell motility, and DNA and RNA replication.



KEITHLEY AWARD

Session S4

Björn Wannberg
Gammadata Scienta AB

For advances in the development of angle-resolved electron analyzers for photoelectron spectroscopy.

PRIZES AND AWARDS



JAMES MCGRODDY PRIZE

Session J1

Jun Akimitsu
Aoyama-Gakuin University

Robert C. Haddon
University of California, Riverside

Arthur F. Hebard
University of Florida

For the discovery of high temperature superconductivity in non-oxide systems.



NICHOLSON MEDAL

Session U1

David Landau
University of Georgia

For his work in computational physics recognized internationally, and his creation and leadership of the Center for Simulational Physics that has had great success in educating young scientists from many countries in computer simulations.



LARS ONSAGER PRIZE

Session L1

Tin-Lun Ho
Ohio State University

For his contributions to quantum liquids and dilute quantum gases, both multi-component and rapidly rotating, and for his leadership in unifying condense matter and atomic physics research in this area.



Gordon Baym
University of Illinois

Christopher Pethick
NORDITA

For fundamental applications of statistical physics to quantum fluids, including Fermi liquid theory and ground-state properties of dilute quantum gases, and for bringing a conceptual unity to these areas.



GEORGE PAKE

Session J1

Julia M. Phillips
Sandia National Laboratories

For her leadership and pioneering research in materials physics for industrial and national security applications.



EARLE PLYLER

Session Y7

Steven G. Boxer
Stanford University

For his creation of the new spectroscopic technique of vibrational Stark spectroscopy, and its insightful applications to a variety of condensed phase systems, including the bacterial photosynthetic reaction center.



POLYMER PRIZE

Session H3

Kenneth S. Schweizer
University of Illinois

For outstanding theoretical contributions to the fundamental understanding of structure and dynamics in polymer melts, polymer blends, polymer-particle composites, and glasses.



ANEESUR RAHMAN PRIZE

Session A18

Gary S. Grest
Sandia National Laboratories

For his ground-breaking development of computational methods and their application to the study of soft materials, including polymers, colloids, and granular systems.

FOCUS SESSIONS

DAMOP

- J14 Focus Session: Berezinskii-Kosterlitz-Thouless Regime and Rotating Quantum Gases
 U14 Focus Session: Exotic phases in ultracold Fermi gases
 X9 Focus Session: Spinor Condensates and Dipolar Gases

DBP

- D17 Focus Session: Time-Resolved Structural Investigations on Protein Folding and Function
 L16 Focus Session: Brownian Motors
 Q17 Focus Session: Hydrophobic Interactions at Multiple Scales in Biology
 S16 Focus Session: General Techniques and Radiation Therapies in Biological Physics
 U16 Focus Session: Medical Physics and Radiation Biology
 V16 Focus Session: Medical Imaging and Related Technologies
 W16 Focus Session: Novel Biomedical Techniques

DBP/DFD

- H16 Focus Session: Biochip Physics I
 J16 Focus Session: Biochip Physics II

DBP/DMP

- A38 Focus Session: Biocompatibility
 J17 Focus Session: General Biological Patterns

DPB/DPOLY/DFD

- P16 Focus Session: Cytoskeletal Dynamics and Cell Motility I
 Q16 Focus Session: Cytoskeletal Dynamics and Cell Motility II

DPB/GSNP

- W40 Focus Session: Networks, Regulation, and Pathways in Cell Biology

DCOMP

- U21 Focus Session: General Theory: Density Functional Theory and Beyond

DCMP

- J20 Focus Session: Electronic and Lattice Properties of Surfaces and Thin Films
 Q12 Focus Session: Hidden Order and Heavy Fermions
 Q29 Focus Session: Carbon Nanotubes and Related Materials X: p-n Junctions and Mesoscopic Effects in Graphene
 Q38 Focus Session: Ferroelectric Films and Finite Size Effects
 U28 Focus Session: Semiconductor Qubit Approaches II
 U38 Focus Session: Ferroelectric Oxide Superlattices and Oxide Thermoelectrics
 V38 Focus Session: Multiferroics and Multiferroic Composites
 W37 Focus Session: Multiferrocity in BiFeO₃-based films

DCOMP/DCP

- S13 Focus Session: Frontiers in Electronic Structure Theory I

- U13 Focus Session: Frontiers in Electronic Structure Theory II

DCOMP/DMP/GMAG

- A15 Focus Session: Theory of Magnetization Dynamics
 U33 Focus Session: Theory and Simulations of Magnetism I
 Y32 Focus Session: Theory and Simulations of Magnetism II

COMP/GSCCM

- A13 Focus Session: Simulations of Matter at Extreme Conditions I: Hydrogen Helium, and Planetary Materials
 B13 Focus Session: Simulations of Matter at Extreme Conditions II: Beryllium, Carbon, and Metals
 H13 Focus Session: Simulations of Matter at Extreme Conditions III: Classical MD, Potentials, and Energetic Materials
 J13 Focus Session: Simulations of Matter at Extreme Conditions IV: Crystalline Solids, Liquids, and Methods

DCP

- A26 Focus Session: Photophysics of Cold Molecules I
 B21 Focus Session: Clusters, Cluster Assemblies, Nanoscale Materials I
 B26 Focus Session: Photophysics of Cold Molecules II
 D21 Focus Session: Clusters, Cluster Assemblies, Nanoscale Materials II
 D26 Focus Session: Photophysics of Cold Molecules III
 H21 Focus Session: Clusters, Cluster Assemblies, Nanoscale Materials III
 H26 Focus Session: Photophysics of Cold Molecules IV
 J21 Focus Session: Clusters, Cluster Assemblies, Nanoscale Materials IV
 J26 Focus Session: Quantum Control I
 L26 Focus Session: Quantum Control II
 P21 Focus Session: Fundamental Issues in Catalysis I
 P26 Focus Session: Quantum Control III
 Q21 Focus Session: Fundamental Issues in Catalysis II
 S21 Focus Session: Fundamental Issues in Catalysis III
 S26 Focus Session: Advances in Atmospheric Aerosol Science I
 U26 Focus Session: Advances in Atmospheric Aerosol Science II
 V26 Focus Session: Advances in Atmospheric Aerosol Science III
 W26 Focus Session: Advances in Atmospheric Aerosol Science IV

DCP/DCOMP

- V13 Focus Session: Frontiers in Electronic Structure Theory III

DFD

- D9 Focus Session: Turbulence
 H8 Focus Session: Glassy Dynamics in Colloids
 Q9 Focus Session: DNA and Biofluid Analysis with Micro and Nano Fluidic Devices
 X8 Focus Session: Wormlike Micellar Fluids and Vesicles

DFD/DBP

- A9 Focus Session: Fluid Dynamics of Animal Motion

FOCUS SESSIONS

DFD/GSNP

D8 Focus Session: Granular Flows: Vibrated

DMP

A11 Focus Session: MgB₂-like: Exotic Behavior in MgB₂-like Materials
 A20 Focus Session: Quantum Dots and Semiconductor Surface Nanostructures
 A24 Focus Session: Transport in Nanostructures I: STM and Atomic Control
 A28 Focus Session: Optical Properties of Nanostructures I: Carbon Nanotubes
 A29 Focus Session: Carbon Nanotubes and Related Materials I: Graphene Transport
 B20 Focus Session: Growth, Kinetics and Quantum Effects in Metal Thin Films
 B24 Focus Session: Transport in Nanostructures II: Strong Correlations
 B28 Focus Session: Optical Properties of Nanostructures II: Graphene, Graphite and Related Materials
 B29 Focus Session: Carbon Nanotubes and Related Materials II: Graphene Transport
 B30 Focus Session: Carbon Nanotubes and Related Materials III: Synthesis
 D10 Focus Session: Hybrid Magnetic-Superconducting Systems I
 D19 Focus Session: Dopants and Defects in Semiconductors I
 D20 Focus Session: Growth and Properties of Novel Semiconductor and Related Nanostructures
 D28 Focus Session: Transport in Nanostructures III: Single Molecules
 D29 Focus Session: Carbon Nanotubes and Related Materials IV: Graphene
 D30 Focus Session: Carbon Nanotubes and Related Materials V: Nanotube Transport
 H11 Focus Session: MgB₂-like: Computational Design of Novel Superconductors
 H20 Focus Session: Assembly of Nanowires and Related Structures
 H23 Focus Session: Probing and Modifying Materials with Lasers I
 H24 Focus Session: Optical Properties of Nanostructures III: Functional Nanowires
 H29 Focus Session: Carbon Nanotubes and Related Materials VI: Transport in Graphene
 J11 Focus Session: MgB₂-like: Novel Non-Boride Superconductors
 J24 Focus Session: Optical Properties of Nanostructures IV: Quantum Dots
 J29 Focus Session: Carbon Nanotubes and Related Materials VII: Electronic Properties
 J36 Focus Session: Materials for Photovoltaics and Photocatalysis I
 L10 Focus Session: Electronic and Vortex Mechanisms for Higher Performing Superconductors
 L19 Focus Session: Dopants and Defects in Semiconductors II
 L20 Focus Session: Self-Assembled Organic Overlayers

L23 Focus Session: Probing and Modifying Materials with Lasers II
 L24 Focus Session: Transport in Nanostructures IV: 2DES, Dots, and QPCs
 L29 Focus Session: Carbon Nanotubes and Related Materials VIII: Electronic Structure of Graphene
 P11 Focus Session: MgB₂-like: Disorder in Novel Superconductors
 P20 Focus Session: Engineering Interfaces for New Materials I: Internal Interfaces
 P24 Focus Session: Optical Properties of Nanostructures V: Plasmonics and Metallic Nanostructures
 P29 Focus Session: Carbon Nanotubes and Related Materials IX: Graphene Electronic Structure
 P35 Focus Session: Materials for Photovoltaics and Photocatalysis II
 Q11 Focus Session: Hybrid Magnetic-Superconducting Systems II
 Q15 Focus Session: Semiconductor Qubit Approaches I
 S19 Focus Session: Dopants and Defects in Semiconductors III
 S20 Focus Session: Engineering Interfaces for New Materials III: Heterogeneous Interfaces
 S29 Focus Session: Carbon Nanotubes and Related Materials XI: Optical Spectroscopy
 U11 Focus Session: MgB₂-like: Enhancement of Superconducting Properties
 U20 Focus Session: Metal Surfaces, Interfaces, and Thin Films
 U24 Focus Session: Transport in Nanostructures VI: Nonequilibrium phenomena and noise
 U29 Focus Session: Carbon Nanotubes and Related Materials XII: Graphene Transport
 V28 Focus Session: Optical Properties of Nanostructures VI: Nanoscale Metamaterials
 V29 Focus Session: Carbon Nanotubes and Related Materials XIII: Synthesis
 W10 Focus Session: Hybrid Magnetic-Superconducting Systems III
 W29 Focus Session: Carbon Nanotubes and Related Materials XIV: Theory and Sensing
 W36 Focus Session: Materials for Photovoltaics and Photocatalysis III
 X11 Focus Session: MgB₂-like: Properties of Exotic Superconductors
 X28 Focus Session: Optical Properties of Nanostructures VII: Surface Plasmons and Periodic Arrays
 X29 Focus Session: Carbon Nanotubes and Related Materials XV: Electronic Structure and Optical Properties

DMP/DCMP

Q20 Focus Session: Engineering Interfaces for New Materials II: Surfaces

DMP/DCOMP

B31 Focus Session: Computational Nanoscience I: Electronic and Optical Properties of Nanoclusters
 D31 Focus Session: Computational Nanoscience II: Nanowires and Transport

FOCUS SESSIONS

- H31 Focus Session: Computational Nanoscience III: Ferroelectrics, Surfaces, and Water
 H40 Focus Session: Earth and Planetary Materials I
 J31 Focus Session: Computational Nanoscience IV: Nanocrystals
 J40 Focus Session: Earth and Planetary Materials II
 P31 Focus Session: Computational Nanoscience V: Mechanical Properties and General Methods

DMP/DPOLY

- B22 Focus Session: Organic Electronics: FETs I
 D22 Focus Session: Organic Electronics: Synthesis and Materials
 P22 Focus Session: Organic Electronics: FETs II
 S22 Focus Session: Organic Electronics: Contacts and Interfaces
 W22 Focus Session: Organic Photovoltaics and LEDs

DMP/FIAP

- D36 Focus Session: Hydrogen Storage I: Chemical Hydride and Complex Metal Hydride Materials I
 J28 Focus Session: Thermoelectricity in Semiconductor Nanostructures
 L36 Focus Session: Hydrogen Storage II: Chemical Hydride and Complex Metal Hydride Materials II
 Q28 Focus Session: Thermoelectricity in Bulk Materials
 S36 Focus Session: Hydrogen Storage III: Novel Porous and Sorbent Materials
 V35 Focus Session: Thermoelectric Phenomena in Nanostructured Materials

DMP/GMAG

- A23 Focus Session: Manganites I
 A31 Focus Session: Oxide Interfaces I
 B23 Focus Session: Perovskite Cobaltites
 D23 Focus Session: Triangular Lattice and Spinels
 J23 Focus Session: Cuprates and Nickelates
 P23 Focus Session: Multifunctional Oxides: BiFeO₃ and Thin Films
 Q23 Focus Session: Bilayer Manganites
 S23 Focus Session: Nanostructured Oxides and Thin Films
 S31 Focus Session: Multiferroics I: 113 and 125
 U23 Focus Session: Manganite Thin Films
 U31 Focus Session: Multiferroics II: Theory and LuFe₂O₄
 V23 Focus Session: Charge/Orbital Ordering in Complex Oxides
 V31 Focus Session: Oxide Interfaces II
 W23 Focus Session: Manganites II
 W31 Focus Session: New Materials and Properties of Complex Oxides
 X23 Focus Session: Multiferroics III: Other
 X31 Focus Session: Ruthenates
 Y23 Focus Session: Electronic Structure of Complex Oxides
 Y31 Focus Session: Sodium Cobaltites

DMP/GMAG/FIAP

- A33 Focus Session: Spin Dependent Phenomena in Semiconductors: I
 B33 Focus Session: Spin Dependent Phenomena in Semiconductors: II
 D33 Focus Session: Spin Dependent Phenomena in Semiconductors: III

DMP/GSNP

- J39 Focus Session: Friction and Contact

DPOLY

- A22 Focus Session: Hybrid Organic-Inorganic Nanomaterials I: Patterning and Self Assembly
 L18 Focus Session: John H. Dillon Medal Symposium
 Q22 Focus Session: New Methods in Polymer Physics
 U22 Focus Session: Nonequilibrium Fluctuations in Biomolecules
 V18 Focus Session: Properties of Block Copolymers
 V25 Focus Session: Interfaces and Adhesion I
 X18 Focus Session: Dynamics and Structures in Polymer Melts, Gels and Glasses

DPOLY/DBP

- A21 Focus Session: Reversibly Associating Polymers: Theory and Experiments
 J25 Focus Session: Biopolymers: Molecules, Solutions and Networks I
 P25 Focus Session: DNA and Protein Analysis with Micro and Nano Fluidics
 W18 Focus Session: Dynamics of Nucleic Acid-Protein Interactions
 W25 Focus Session: Biopolymers: Molecules, Solutions and Networks II

DPOLY/DCOMP/DBP

- A18 Focus Session: Multiscale Modeling: Polymers, Nanocomposites, and Biomacromolecules

DPOLY/DMP

- V22 Focus Session: Organic Electronics: Molecular Junctions

DPOLY/FIAP

- B18 Focus Session: Mechanical Properties of Polymers: Fracture and Adhesion

FED

- J19 Focus Session: How to Develop an Education Component for an NSF Proposal

FIAP

- A35 Focus Session: Negative Index Materials I
 D35 Focus Session: Negative Index Materials II
 H35 Focus Session: Negative Index Materials III

FOCUS SESSIONS

W35 Focus Session: Nanotechnology II

Y36 Focus Session: Artificial Neurons

FIAP/DMP

B35 Focus Session: Emerging Materials and Devices I

J35 Focus Session: Emerging Materials and Devices II

Q35 Focus Session: Emerging Materials and Devices III

GIMS

A36 Focus Session: X-ray and Electron Optics and Microscopy

B36 Focus Session: Advances in Scanned Probe Microscopy I: Low Temperatures

H36 Focus Session: Advances in Scanned Probe Microscopy II: Force Methods

P36 Focus Session: X-ray and Neutron Instrumentation and Science

Q36 Focus Session: Advances in Scanned Probe Microscopy III: Force Methods

GMAG

A27 Focus Session: Pyrochlores

B27 Focus Session: Molecular Magnets I

J27 Focus Session: Triangular Lattice

L27 Focus Session: Low-dimensional Spin Systems

P27 Focus Session: Low-dimensional Magnetism

Q27 Focus Session: One-dimensional Spin Chains

V27 Focus Session: Frustrated Theory

W27 Focus Session: Spin Glasses and $\text{SrCu}_2(\text{BO}_3)_2$

X27 Focus Session: Exchange Bias and Magnetic Interactions

X32 Focus Session: Magnetic Sensors

Y27 Focus Session: Kagome Magnets

GMAG/DMP

B32 Focus Session: Nanocontacts and Inhomogeneous Magnetic States

D27 Focus Session: Magnetic Nanowires and Nanodots I

H32 Focus Session: Magnetic Imaging

Q32 Focus Session: Molecular Magnets II

S27 Focus Session: Magnetic Nanowires and Nanodots II

U32 Focus Session: Magnetic Multilayers and Nanostructures

V32 Focus Session: Magnetic Semiconductors and Novel Magnetic Materials

GMAG/DMP/FIAP

D32 Focus Session: Spin Transfer Torque I

J32 Focus Session: Damping and Spin Relaxation

L32 Focus Session: Spin Transfer Torque II

S32 Focus Session: Magnetic Tunneling

W32 Focus Session: Domain Wall Motion and Itinerant Magnetism

GMAG/FIAP

P32 Focus Session: Magnetic Media and Hard Magnetic Materials

GMAG/FIAP/DMP

H33 Focus Session: Optical Properties of Magnetic Semiconductors

J33 Focus Session: Mostly Spins in Group IV Semiconductors and Organics

L33 Focus Session: Spins in Quantum Dots

P33 Focus Session: Mostly Spin Injection in Si

Q33 Focus Session: Spin Polarization in Compound Semiconductors

S33 Focus Session: Mostly III-V Semiconductors

V33 Focus Session: Theory of Spin Phenomena in Semiconductors

W33 Focus Session: Spins in Narrow Gap Semiconductors

X33 Focus Session: Magnetic Resonance in Magnetic Semiconductors

33 Focus Session: Diluted Magnetic Oxides

GQI

D15 Focus Session: Foundations of Quantum Theory I

H15 Focus Session: Superconducting Qubits I

L14 Focus Session: Foundations of Quantum Theory II

L15 Focus Session: Progress toward Scalable Quantum Information Processing

P15 Focus Session: Superconducting Qubits II

U15 Focus Session: Open Quantum Systems and Decoherence

Y15 Focus Session: Quantum Metrology and Control: Fundamental Limits and Applications

GQI/DAMOP

A14 Focus Session: Quantum Simulation of Condensed Matter Systems With Ultracold Atoms

GSNP:

A39 Focus Session: Elasticity and Geometry of Thin Objects

D39 Focus Session: Econophysics and Applications Outside of Physics

Q39 Focus Session: Models and Materials Far from Equilibrium

U39 Focus Session: Structure and Dynamics of Complex Networks

V39 Focus Session: Jamming I: Theory

GSNP/DBP

V17 Focus Session: Nonequilibrium Thermodynamics of Small Systems

GSNP/DFD

B39 Focus Session: Collective Dynamics of Self-Driven Particles

GSNP/DMP

L39 Focus Session: Deformation and Fracture

GSNP/DPOLY

U18 Focus Session: Polymer Collapse and Protein Folding

POSTER SESSIONS

Convention Center • Exhibit Hall A

Poster sessions will be held on Monday, Tuesday and Wednesday.

Posters will be on display from 10:00am to 5:00pm on Monday and Tuesday, and from 10:00am to 4:00pm on Wednesday. Authors should be in attendance at the times listed below. APS is not responsible for poster materials that are left in the exhibit hall after the session is over. No A-V is allowed in posters sessions. A wine and cheese reception will be held in Exhibit Hall F on Monday and Tuesday from 4:00pm-5:00pm.

CI: POSTER SESSION I

Monday, March 10

Authors in Attendance from 2:00pm to 5:00pm
(DPOLY poster session, 11:15am – 2:15pm)

1–101.....	Polymeric and Organic Materials I
102–179.....	Complex Structured Materials
180–182.....	Quantum Fluids and Solids
183–189.....	Quantum Information, Concepts, and Computation I
190–196.....	High Pressure Physics
197–199.....	General Physics
200–212.....	General Theory Including Computational Methods: Many Body and Strongly Correlated Systems
213–234.....	Instrumentation and Measurements
235–245.....	Metals
246–282.....	Statistical and Nonlinear Physics
283–312.....	Phase Transitions and Strongly Correlated Systems
313–341.....	Post–deadline Abstracts

RI: POSTER SESSION III

Wednesday, March 12

Authors in Attendance from 1:00pm to 4:00pm
(DPOLY poster session, 11:15am – 2:15pm)

1–101.....	Polymeric and Organic Materials II
102–143.....	Applications
144–174.....	Atomic, Molecular & Optical (Amo) Physics
175–210.....	Artificially Structured Materials
211–217.....	Computational Methods: Dynamics, Transport, and Plasma
218–263.....	Biological Physics
264–279.....	Insulators and Dielectrics
280–284.....	Supplementary Abstracts
285–350.....	Post–deadline Abstracts

KI: POSTER SESSION II

Tuesday, March 11

Authors in Attendance from 2:00pm to 5:00pm

1–50.....	Superconductivity
51–121.....	Magnetism (Experiment, Theory, Applications)
122–160.....	Chemical Physics
161–214.....	Semiconductors
215–225.....	Society of Physics Students
226–235.....	Physics Education
236–239.....	History of Physics
240–247.....	General Theory Including Simulations of Matter at Extreme Conditions; Computational Nanoscience; and Computational Methods: Multiscale Modeling
248–296.....	Fluids and Soft Matter
297–304.....	Quantum Information, Concepts, and Computation II
305–325.....	Surfaces, Interfaces and Thin Films
326–341.....	Post–deadline Abstracts

PROGRAM FORMAT

PROGRAM TIME-BLOCKS

Contributed and invited sessions at APS general meetings are three hours in length—three sessions per day at 8:00am, 11:15am, and 2:30pm. The time-blocks are designated in alpha order beginning with time-block “A” on Monday at 8:00am, and ending with “Y” designating the 11:15 time-block on Friday.

SESSION CODES

The number following the alpha that designates the time-block represents the sequential numbering of the sessions within the time-block. Session A1 is one of several sessions taking place in parallel in the first time-block on Monday. The number following the decimal in the session code represents the sequence of the papers to be presented in that session. For example: B3.004 = Time-block B (Monday at 11:15am); Session 3 (of several) within that time-block; and the 4th paper to be presented in that session.

POSTER CODES

The poster sessions will take place on Monday, Tuesday, and Wednesday in the Exhibit Hall. A breakdown of the topics presented in each category is listed on page 20.

Monday poster session (2:00 – 5:00pm) = Sessions C1

Tuesday poster session (2:00 – 5:00pm) = Sessions K1

Wednesday poster session (1:00 – 4:00pm) = Sessions R1

Each poster presentation (board) within each poster session is numbered sequentially. Each poster board is 4' x 8'.

GUIDELINES FOR SPEAKERS

Oral Presentations

Please arrive at least 15 minutes prior to the scheduled time of your talk. Contributed papers are allocated 12 minutes each—10 minutes for presentation and 2 minutes for questions from the audience, unless otherwise specified. Invited papers are allocated 36 minutes—30 minutes for presentation and 6 minutes for questions from the audience.

Note: Occasionally (and unfortunately) the chair for a session may not appear, in which case we ask that the first presenter serve as chair of the session.

Poster Presentations

If you are presenting a poster, please be sure to have your poster up prior to 10:00am on the day of your poster presentation to which you have been assigned, and taken down immediately at the end of the day. You must be on hand at the beginning of the poster session (see Epitome for times). APS will not be responsible for posters left up after the end of each poster session. No A-V is allowed in the poster sessions. Posters will be on display between the hours of 10:00am to 5:00pm Monday, Tuesday; 10:00am to 4:00pm, Wednesday. Consult the Poster Session Schedule for exact times and a breakdown of poster topics. Each poster board is 4' x 8'.

GUIDELINES FOR SESSION CHAIRS

- Prior to the session, check the Corrigenda distributed with the Bulletin, as well as the Program-Changes Board in the registration area to see if any papers in the session you are chairing have been withdrawn.

- Arrive at the meeting room about 15 minutes prior to the start of the session and familiarize yourself with the controls for lights, microphones, A-V equipment and the timer. Technicians will be on hand to assist. If you encounter problems, you should immediately alert the A-V tech by picking up the extension on any of the marked “A-V Hotline” phones.

- Start the session on time. Briefly introduce yourself, announce the first paper and author, and start the timer.

- Please adhere to the time schedule listed in the Bulletin, so that simultaneous sessions are as closely synchronized as possible. Many attendees move from session to session in order to hear specific papers. Note: any time used by the speaker and/or technicians to set up laptops for LCD (Powerpoint) presentations is deducted from the time allocated for the talk.

- The allotted time for contributed papers is 12 minutes; for invited papers—36 minutes. If you are chairing a session that includes both contributed and invited papers please be aware of the different times allocated for each and set the timer as follows:

Contributed papers - set timer for 8 minutes to give initial warning, then set the final bell to go off 2 minutes later. When this time is up, allow 2 additional minutes for questions relating to the paper, thank the speaker and promptly introduce the next paper and speaker.

Invited papers - set timer for 25 minutes for initial warning, and the final bell to ring 5 minutes later. Then set the timer for 6 additional minutes for questions from the audience.

Explain the timing system to the audience prior to the start of the session, and as often during the session as you think necessary.

- The By-Laws of the Society request that speakers be asked to stop when their allotted time is up in a courteous but firm manner. Keep in mind that the session must end on time, and that the last speaker has just as much right to an audience as does the first speaker.

- Should a speaker fail to appear, you must wait 12 minutes before going on to the next speaker. At the end of the session, call again for the regularly scheduled paper, if time allows.

- When two or more papers are submitted by an author, only one of these will be assigned a scheduled presentation time within that session. It is assumed that the first author listed in the abstract is the person who will present the paper at the meeting. A second abstract submitted by the same author is automatically assigned to a poster.

PROGRAM FORMAT

- If any problems arise that you are unable to handle relative to successfully chairing the session, please inform the A-V tech in the room, or go immediately to the APS registration desk to alert APS staff.

GENERAL A-V POLICY

In keeping with our legally binding contract with our A-V vendor, speakers are not permitted to bring their own projection equipment for use at the meeting.

Standard A-V in all Sessions

The standard A-V package consists of an LCD projector, overhead projector, screen, laser pointer and 2 lapel microphones – one for the chair and one for the speakers. Any additional A-V equipment must be rented by the speaker directly through APS's designated A-V provider located in Room 202. The speaker is responsible for the cost of renting any additional equipment.

Policy and Guidelines on Use of LCD Projectors

The responsibility for a smooth, technically trouble-free presentation ultimately rests with the presenter. Speakers who plan to use LCDs must do the following:

- Bring your own laptop computer, power cord, and any proprietary cords required for your computer. Do not bring your own projector to the meeting. NOTE: APS is not responsible for the security of personal laptop computers.

- Visit the Speaker-Ready room located in Room 202 to run through the presentation to ensure a smooth and technically trouble-free talk. Testing your presentation in the Speaker-Ready room prior to your presentation is strongly recommended to minimize equipment compatibility difficulties. Remember that time used to set up equipment reduces the time you have to make your presentation.

- Bring a back-up vu-graph presentation in case there are set-up difficulties with the LCD equipment

MARCH MEETING UNIT ACRONYMS

DIVISIONS

DAMOP Division of Atomic, Molecular and Optical Physics
 DBP Division of Biological Physics
 DCP Division of Chemical Physics
 DCMP.. Division of Condensed Matter Physics
 DCOMP. Division of Computational Physics
 DFD Division of Fluid Dynamics
 DMP Division of Materials Physics
 DPOLY . Division of Polymer Physics

FORUMS

FEEd Forum on Education in Physics
 FGSA Forum on Graduate Student Affairs
 FHP Forum on History of Physics
 FIAP Forum on Industrial and Applied Physics
 FIP Forum on International Physics
 FPS Forum on Physics and Society

TOPICAL GROUPS

GHP Topical Group on Hadronic Physics
 GIMS.... Instrumentation and Measurement Science Topical Group
 GMAG.. Magnetism and Its Applications Topical Group
 GSNP.... Statistical and Non-linear Topical Group
 GSCCM Shock Compression of Condensed Matter
 GQI..... Quantum Information, Concepts and Computation

COMMITTEES

COM..... Committee on Minorities
 CSWP... Committee on the Status of Women in Physics

MARCH MEETING EXHIBITORS & SHOW GUIDE 2008

EXHIBIT SCHEDULE

Monday, March 10 & Tuesday, March 11 • 10:00am – 5:00pm

Wednesday, March 12 • 9:00am – 4:00pm

A&N Corporation
Advanced Research Systems, Inc.
Agilent Technologies
AJA International, Inc.
American Institute of Physics
American Magnetics Inc.
American Physical Society
Amuneal Manufacturing Corporation
Andeen-Hagerling, Inc.
Applied Surface Technologies
AR RF Microwave Instrumentation
Asylum Research
Attocube Systems AG
Blake Industries, Inc.
Bruker Axs Inc.
Bruker BioSpin Corporation, EPR Division
Cambridge Magnetic Refrigeration
Cambridge University Press
Computing in Science & Engineering (CiSE)
Cryo Industries of America, Inc.
Cryogenic Control Systems, Inc.
Cryogenic Ltd.
Cryomagnetics, Inc.
Cryomech Inc.
DCA Instruments
Dryogenic
Electro Optical Components
Gems & Crystals Unlimited
GMW Associates
Hamamatsu Corporation
High Precision Devices, Inc.
HTS-110
ICE Oxford
IET/Inspec
IOP Publishing
J.A. Woollam Co., Inc.
Janis Research Company, Inc.
Keithley Instruments
Kepco Inc.
Kimball Physics, Inc.
KLA-Tencor Corporation
Kurt J. Lesker Co.
Lake Shore Cryotronics, Inc.
Lambda Americas
MacKichan Software
Mad City Labs, Inc.
Mantis Deposition
Materials Research Society
MDC Vacuum Products
NanoAndMore USA, Inc.
Nanomagnetics Instruments
Nanonics Imaging Ltd
Nanonis GmbH
National Research Council of the National Academies
Nature Publishing Group
New Focus, a Division of Bookham
Nor-Cal Products, Inc.
Omicron Nanotechnology USA
Optical Society of America
OriginLab Corporation
Oxford Applied Research
Oxford Instruments
Oxford University Press
Park Systems, Inc.
Photonics Spectra
Physics Today
Physics Today
Princeton Scientific Corp
Princeton University Press
Quantum Design
Raith USA, Inc.
RHK Technology, Inc.
Rigaku Americas Corporation
Ripplon Software Inc.
Sciencetech Inc.
Scientific Instruments, Inc.
Scientific Magnetics Ltd.
Signal Recovery
SPECS USA, Inc.
Springer
Staib Instruments, Inc.
Stanford Research Systems
STAR Cyroelectronics
Taylor & Francis Group LLC - CRC Press
Teachspin, Inc.
The Institute of Pure and Applied Physics
Time-Bandwidth, Inc.
Varian Inc.
Veeco Instruments
VG Scienta, Inc.
WebAssign
Wiley
Witec Instruments Corp.
Wolfram Research
World Scientific Publishing Company
Wyatt Technology Corporation

SHOW GUIDE 2008

A&N Corporation #403

www.ancorp.com

A&N Corporation, manufacturer of high vacuum components since 1965, offers researchers and laboratories an extensive line of standard high and ultra high vacuum components, as well as custom valves and process chambers.

A&N products are designed to meet or exceed the standards required by industrial and academic users.

Advanced Research Systems, Inc. #500, 502

www.arscryo.com

ARS offers integrated Displex and Helitran Cryostats for Material Characterization. Cryostats are available for Optical, Transport, XRD, UHV and other applications. The Closed Cycle, ARS Displex Cryostats have been redesigned for a temperature range of sub 1.5 - 300K or 3 - 800K. With the lowest vibrations at the sample it is the cryocooler of choice for sample characterization. Low vibrations systems available for Mossbauer, Optical and Ellipsometry applications. ARS is introducing the low cost 77K closed cycle cryostats for optical and non-optical experiments as well as the Cryogenic Probe Station with up to 4 probes. ARS manufactures the Open and Closed Cycle cryocoolers, the vacuum shrouds, radiation shields and sample holders resulting in the most effective design with commitment to integrity and quality of the product.

Agilent Technologies #200,202

www.agilent.com

Agilent Technologies offers a wide range of high precision Atomic Force Microscope systems to meet your unique research needs. Agilent's industry-leading environmental/temperature options and fluid handling enable superior control for materials & life sciences including electrochemistry & polymer applications. Agilent delivers worldwide support, provided by experienced application scientists and technical service personnel.

AJA International, Inc. #401

www.ajaint.com

Sputtering and E-beam Systems for R&D and Pilot Production; Static and Rotating Magnetron Sputter Sources for HV and UHV; Substrate Holders with Rotation, RF Biasing, Heating and Cooling; Sputter Targets / Deposition Materials; Microwave, RF and DC Power Supplies; Microwave Components and Plasma Sources; RF/ Ion/Plasma Sources.

American Institute of Physics #700, 702

www.aip.org

AIP offers an open-access publishing option, Author Select, to contributors to AIP journals. RSS feeds are available for AIP journal content by topic and for the journals full content. Purchase an AIP Article Pack; prepay for a set number of articles from AIP journals for as low as \$2.50 per article.

American Magnetics Inc. #419

www.americanmagnetics.com

AMI offers liquid helium cooled and cryogen free superconducting magnet systems for a wide range of applications. These systems are offered with sample inserts going down to a few mK using He3 cryostats or dilution refrigerators. Different types of SPM probes are also available for use with our standard magnet systems. AMI also works with industry partners to produce cryogen free dilution refrigerators for our MAXes (multi-axis) magnets. Near zero loss liquid helium Dewars are also available for use with our magnet systems. These use 4K pulse-tube or GM cryocoolers to recondense helium back into the Dewar, thereby facilitating use of existing magnets and sample inserts. AMI also offers custom cryogen free magnets to fit compact goniometers. These are very popular for use in synchrotron facilities around the world. Other product offerings include power supplies for superconducting magnets, low loss current leads, liquid helium level instrumentation and cryogenic autofill systems.

American Physical Society #601,603

www.aps.org

The American Physical Society is the publisher of the world's most prestigious and widely-read physics research journals: Physical Review A, B, C, D, E, Physical Review Letters, Reviews of Modern Physics, PROLA (Physical Review Online Archive), PR-Special Topics-Accelerators and Beams, PR-Special Topics-Physics Education Research and PR Focus. PROLA's fully searchable content and full-text articles included everything published by APS back to 1893. 2008 marks the 50th anniversary of Physical Review Letters. Visit booth 601 for details.

Amuneal Manufacturing Corporation #219

www.amuneal.com

Amuneal Manufacturing Corporation designs and fabricates custom magnetic shield components and assemblies for both room temperature and cryogenic applications, and is a world leader in providing cost-effective shielding solutions to the applied physics community. From shield design and attenuation calculations to 3D modeling, we work with you to provide the design for your specific application. All Amuneal fabricated magnetic shields are hydrogen annealed in our in-house heat treat center for maximum shielding properties.

Andeen-Hagerling, Inc. #615

www.andeen-hagerling.com

Andeen-Hagerling (AH) manufactures the world's most precise capacitance/loss bridges and capacitance standards. AH bridges are fully automatic and resolve sub-attofarad measurements. Loss (dissipation factor) is measured down to 1.5×10^{-8} tan δ . Capacitance standards are available from 0.1 pF to 100+ pF. Standards have a temperature coefficient of .01 ppm/C, stability of 0.3 ppm/year, and are NIST traceable to 2 ppm accuracy.

Applied Surface Technologies #405

www.co2clean.com

Surface cleaning with the CO2 Snow Jet will be demonstrated. The Snow Jet is a simple, yet novel surface cleaning process that can remove particles of all sizes and also organic residues from surfaces. This cleaning process works well for cleaning substrates, vacuum parts, analytical samples (AFM), optics, and many other applications. The Snow Jet process is, nondestructively, residue-free with no environmental limitations. Bring test samples!

AR RF/Microwave Instrumentation #625

www.ar-worldwide.com

AR RF/Microwave Instrumentation will be exhibiting its new broadband amplifier, model 800A3 (800 watts, 10kHz to 3MHz), for applications that require high voltage and high impedance. The 800A3 drives loads without mismatch by a switchable impedance matching output transformer that can be set to 12.5, 25, 50, 100, 150, 200 and 400 ohms. If higher impedance is required, an external matching transformer is available. For higher power requirements, model 1500A3 provides 1500 watts and the model 5000A3 provides 5000 watts of power over the same frequency range.

Asylum Research #335

www.asylumresearch.com

Featured is the MFP-3D™ AFM with unprecedented precision, accuracy and image resolution—setting the industry standard for advanced operation and flexibility. New advances include the new Piezo Force Module that enables very high sensitivity, high bias, and crosstalk-free measurements on piezoelectrics; iDrive for effortless fluid imaging; exclusive Dual AC imaging mode; and a variety of environmental accessories.

Attocube systems AG #213, 215

attocube systems AG offers a wide range of high-precision nanopositioning systems, easy-to-use scanning probe microscopes and probe stations. Temperatures down to 10 mK, high magnetic fields up to 28 T, and ultra-high

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vacuum conditions – our nanopositioners solve your experimental task at the cutting edge. Our instruments enable to analyze samples in various ways with atomic precision – even at Milli-Kelvin-temperatures. Enhance your productivity and time efficiency by implementing our innovative products in experimental setups ranging from scientific research to industrial applications!

Blake Industries, Inc. #235

Will be exhibiting the Blake-Huber line of x-ray and synchrotron instruments and accessories, including rotary tables, goniometers, translation stages and Eulerian Cradles.

Bruker AXS Inc. #300

www.bruker-axs.com

Bruker AXS provides Advanced X-ray Solutions for chemistry, life and material sciences. A wide range of single module CCD systems is available in the PLATINUM series of detectors which feature the newest 4K CCD chip, with lower noise, faster readout and highest sensitivity. Nanotechnology research systems include a range of powder diffraction and single crystal solutions.

Bruker BioSpin Corporation, EPR Division #334

www.bruker-biospin.com

Bruker BioSpin Corporation highlights the ELEXSYS line of FT-EPR spectrometers featuring Linux workstations. Complementing the EMX Series, the ELEXSYS spectrometers provide the ultimate in CW, Pulse-FT-EPR, CW, High Frequency and Pulse ENDOR/Triple instrumentation. The EMX series offers simplicity and reliability for traditional continuous wave EPR.

Cambridge Magnetic Refrigeration #307

CMR will be displaying its mFridge range of general purpose demagnetization refrigerators for hassle free cooling to as low as 30mK. You will be able to talk to our scientists about how ADR technology can benefit your work and discover the full temperature range and convenience of the modular and reliable mFridge family. CMR—Setting new standards in cooling technology.

Cambridge University Press #434,436

www.cambridge.org/us

Please stop by the Cambridge University Press booth. On display we have the classic books Principles of Condensed Matter Physics by Chaikin and Lubensky, and Electronic Structure by Martin. Exciting new titles include Mermin's Quantum Computer Science, Kardar's Statistical Physics of Particles and Statistical Physics of Fields, and Methods in Molecular Biophysics by Serdyuk, Zaccai and Zaccai

Computing in Science & Engineering (CiSE) #703

www.cise.aip.org

CiSE is a bimonthly magazine providing computational tools and methods for 21st-century science. It is peer-reviewed and multi-disciplinary. APS members can subscribe for \$45/year (instead of \$75). Readers say that CiSE bridges the communications gap between researchers and IT professionals. Come by for free back issues, pens and CDs!

Cryo Industries of America, Inc. #319

www.cryoidustries.com

Our new generation of cryogenic systems addresses the growing liquid helium shortage! The XE102 flow cryostat with lowest LHe losses ever, microscopy at 50% cryogen savings, DStat (storage dewar mount) with static losses only 0.020 l/hr and cryogen-free superconducting magnets with sample temperatures down to 1.5 K.

Cryogenic Control Systems, Inc. #513

www.cryocon.com

Manufacturers of precision electronic instrumentation for both laboratory and industrial process control applications. Cryo-con offers a full line of cryogenic temperature controllers, monitors, cryogenic accessories and temperature

sensors. We will be demonstrating our new 2 and 4 channel controllers perfect for He3 applications. Also on display will be our new 8 channel monitor and new sensors

Cryogenic Ltd. #629

www.cryogenic.co.uk

Cryogenic is a recognized leader in the design and manufacture of high field measurement systems to +18 Tesla for the study of electrical, magnetic or thermal properties of material. This includes magnetic moment, specific heat, Hall effect, Seebeck effect and Resistivity. The company provides high field superconducting magnets to +20 Tesla, Cryogen Free magnets to +16 Tesla, split pair/optical magnets to +12 Tesla, ESR/EPR magnet to 16 Tesla, He-3 and Low temperature inserts. Visit our stand number 830 to find out more on the wide range of low temperature systems offered by Cryogenic Ltd.

Cryomagnetics, Inc. #516

www.cryomagnetics.com

Offers a complete superconducting magnet system, related electronic instrumentation, and cryogenic accessory line. New products include our Model 4G Superconducting Magnet Power Supply. Our C-Mag line of cryogen-free superconducting magnet systems includes options for variable temperature and optical access in a compact package. Cryomagnetics is committed to staying at the forefront of superconducting magnet technology and welcomes the opportunity to discuss your requirements.

Cryomech Inc. #412

www.cryomech.com

Cryomech manufactures Gifford McMahon and Pulse tube style cryorefrigerators that are capable of temperatures from 2.8K to 100K in various capacities. We are introducing the Cryomech Liquid Helium Plant which can produce more than 12 liters of liquid helium a day. Our portable Liquid Nitrogen Plants are capable of producing liquid nitrogen directly from the air in most locations around the world

DCA Instruments #402

www.dca.fi

Designs and manufactures a wide range of UHV deposition systems and components. The products includes MBE, UHV sputtering, PLD and UHV cluster tools. These DCA deposition systems are suitable for deposition of thin films of semiconductors, magnetics, oxides, metals under UHV

Dryogenic #305

The Dryogenic Cryogen-Free Measurement System: State of the art integrated performance, with fast turnaround automated measurement options. Combines ultra-low-vibration pulse-tube cooling with optional and affordable millikelvin ADR technology. The next generation system for sample characterization and device measurement.

Electro Optical Components..... #318

www.eoc-inc.com

Electro Optical Components provides advanced components for laser and optoelectronic systems (UV to the far IR). Products include FEMTO signal recovery and lock-in amplifiers, and photoreceivers; DEXTER thermopile detectors; IFW UV detectors; INTEx IR Sources; IMM visible and IR laser diodes and modules; CO2 optics; NOC IR interference filters; LEYSOP E-O modulators and drivers.

Elsevier #439, 441

www.elsevier.com

FEMTO Messtechnik GmbH #318

FEMTO offers a line of high quality specialty amplifiers for signal recovery and processing. These products include Low Noise Current Amplifiers, High and Low Frequency Voltage Amplifiers, Photoreceivers, High Speed GHz Amplifiers and Lock-In Amplifiers. New Products: HCA-S-400M - 400 MHz

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photoreceivers. HCA-400M-5K-C high speed current (transimpedance) amplifier.

Gems & Crystals Unlimited #210,212

Outstanding gemstones, diamonds, rubies, sapphires, emeralds, tanzanites, etc. Customized gold and platinum jewelry. Complete custom work, including engagement, anniversary and any special celebrations for you! Huge array of antique jewelry in gold, platinum and silver, cameos, cufflinks, pins and collectibles. Also available are crystals and minerals of excellent quality and price. Specialize in custom cutting of research minerals for industry, NASA, Goddard, etc. Jeweler@mindspring.com www.gemsandcrystalsunlimited.com

GMW Associates #631

www.gmw.com

Resistive and HTS Electromagnet Systems with power supply, field measurement and control, computer interface options. Applications to sensor calibration, device development, biological studies, EPR, FMR and NMR Spectroscopy, magnetic processing and magnetic separation. Field measurement Instrumentation: 1- and 3-component Fluxgates for low fields, 1- and 3-component Hall Analog Transducers and Digital Teslameters for control and mapping, NMR Teslameters for very high resolution and accuracy.

Hamamatsu Corporation #619

www.sales.hamamatsu.com

Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of infrared, visible, UV light and x-rays. These devices include photomultiplier tubes, photodiodes, image sensors, CCD cameras, and light sources.

High Precision Devices, Inc. #414

www.hpd.online.com

High Precision Devices (HPD) will be exhibiting the popular Model 102 Denali Pulse Tube/ADR cryostat and introducing the new Model 103 Rainier Pulse Tube/ADR cryostat. Both of these cryostats incorporate Adiabatic Demagnetization Refrigerators (ADR) producing PT stage temperatures of 45K and 3K and ADR stage temperatures of 900mK and 45mK.

HTS-110 #709

www.hts-110.com

HTS-110 is the world's leading firm in the development HTS magnet solutions. HTS-110 designs, manufactures and markets HTS products for the medical, scientific, energy and transportation industries. HTS-110 will be displaying a complete product range from small scale OEM components (HTS current leads and coils) to fully integrated, turn key magnet systems and HTS-NMR machines

IET/Inspec #634

www.theiet.org

The Institution of Engineering and Technology (IET) is one of the world's leading professional societies for the engineering and technology community with more than 150,000 members. The IET produces Inspec, the leading English-language database in the fields of electronics, computer science, physics, electrical, control, production and mechanical engineering.

IOP Publishing #711, 713

www.journals.iop.com

IOP Publishing is not-for-profit, learned society publisher and a world leader in the electronic dissemination of peer-reviewed research. Stop by our booth #635 for a personal demonstration of our award-winning electronic journals service, new open-access community websites, and to join us in celebrating New Journal of Physics 10th Anniversary.

J.A. Woollam Co., Inc. #503

www.jawoollam.com

J. A. Woollam Company offers a wide range of spectroscopic ellipsometers for nondestructive materials characterization, including thin film thickness (single and multilayer), optical constants, composition, growth/etch rates, and more. Instruments available for research and manufacturing metrology covering spectral ranges from vacuum ultra-violet to far infrared. Offering table-top, in-line, and in-situ

Janis Research Company, Inc. #701

www.janis.com

Recipient of NASA achievement awards (1996 & 2000), R&D-100 award (1998), offers a complete line of standard and customized cryogenic systems. These include dilution refrigerators (10mK), ADRs (50mK), He-3 & He-4 superconducting magnet systems (0.3K & 6-17T), cryocoolers (3K-800K), VT cryostats (2K-800K), noble gas cold traps, micromanipulated probe stations, and more.

Keithley Instruments #510

www.keithley.com

Keithley Instruments continues its leadership tradition in measurement innovation, providing the best in measurement tools from DC to pulse to RF for a variety of research applications in the physical sciences. New and featured products include the new Low Current 2635/2636 System SourceMeters®, 6GHz Vectors Signal Generators and Analyzers, and a new integrated CV option for the Model 4200 Semiconductor Characterization System.

Kepeco Inc. #234

www.kepecopower.com

Kepeco, Inc offers fast analog and digitally programmable instrumentation DC power supplies capable of producing one, two, or four quadrant outputs. Our new BTM series optimizes our bipolar operational amplifiers (BOP) for controlling correcting magnets. KLP series offers 1.2KW of programmable power in a 1U package with LXI Ethernet control.

Kimball Physics, Inc. #610

www.kimballphysics.com

Electron Guns and Ion Guns: Energies up to 100keV. Applications: Surface, Vacuum, Space, and Plasma Physics, Neutralization, Cathodoluminescence, Semiconductor processing, FEL, RHEED, ESD, Custom. Features: Modular optics, Compact fiber-optic control, LabView, RS-232, RS-422, Energy sweeping, Rastering, Pulsing, Feedback stabilization. Components: Multi CF Fittings, Compact Vacuum Chambers, eV Parts®, Cathodes, Faraday cups.

KLA-Tencor Corporation #710

www.kla-tencor.com

At KLA-Tencor's Surface Metrology product group, our market segments span from semiconductor and data storage manufacturing, to MEMS, optoelectronics, material science and general scientific research a range of industries that measure surface topography to either control their process or research new material characteristics. Typical parameters measured include flatness, roughness, curvature, peak-to-valley, asperity, waviness, texture, volume, sphericity, slope, density, stress, bearing ratio, and distance mainly in the micron to nanometer range. Our products range from benchtop stylus and optical profilers used in research environments to automated high resolution profilers for advanced IC and data storage production facilities.

Kurt J. Lesker Co. #511

www.lesker.com

Deposition systems and components for all vacuum applications, including: sputtering, e-beam evaporation, organics, and atomic layer deposition (ALD). Manufacturer/distributor of: vacuum chambers; subassemblies; standard and custom vacuum hardware; feedthroughs, vacuum pumps. Deposition materials and services including our exclusive NanoBond® for backing plate bonding to ceramics, oxides, or metals.

SHOW GUIDE 2008

Lake Shore Cryotronics, Inc. #604, 606

www.lakeshore.com

Stop by booth 604 to see our Model TTP4 micro-manipulated probe station and to learn more about our full line of cryogen-free, cryogenic, magnet-based, load-lock, and high vacuum probe stations. Also on display will be our Model 370 AC resistance bridge and our Model 475 gaussmeter, the only gaussmeter with a built in field control algorithm. Our knowledgeable staff will be on hand to discuss your research requirements.

Lambda Americas #306

Genesys(TM)AC/DC power supplies provide high power density, low ripple and complete user-friendly interfaces. Outputs to 600V and 1,000A. Genesys series contains extensive features that provide excellent performance and flexibility in materials research laboratories and test systems. Users now have a complete family with identical features and interfaces from 750W to 15kW.

MacKichan Software #501

www.mackichan.com

Scientific WorkPlace 5.5 simplifies writing, sharing, and doing mathematics. A click of a button allows you to typeset in LaTeX. The integrated computer algebra system lets you solve and plot equations; animate 2D and 3D plots; rotate, move, and fly through 3D plots; create 3D implicit plots; and more

Mad City Labs, Inc. #505, 507

www.madcitylabs.com

The largest American manufacturer of precision nanopositioning systems. The proprietary PicoQ sensing technology incorporated into all nanopositioner designs provides usable resolution down into the picometer range. Applications for nanopositioners include AFM, NSOM, SPM, fiber positioning, interferometry, single molecule spectroscopy, imaging and nanolithography.

Mantis Deposition #612

www.mantisdeposition.com

Mantis Deposition provides high quality deposition components and systems for the thin-film coating community. Our products are designed for all cutting-edge materials research (MBE, Surface Science, PVD, nanocoatings...) and pre-production coating applications.

Materials Research Society #721

www.mrs.org

The Materials Research Society (MRS), renowned for its Spring and Fall Meetings, now offers its members FREE unlimited online access to both the MRS Bulletin and the MRS Online Proceedings Library - over 20,000 proceedings papers covering a wide range of materials topics, from nano- and biomaterials, to semiconductors, polymers/organic materials, surfaces/interfaces/thin films, and more. Visit www.mrs.org/benefits for details

NanoAndMore USA, Inc. #311

www.nanoandmore.com

ales of NANOSENSORS, NanoWorld and BudgetSensors AFM probes and accessories into North & South America. Digital Holographic Microscope, reflection and transmission mode, from Lyncee tec - produces real time 3D imaging with a capture rate up to 20MHz. NanoSight NanoParticle Size Analyzers - Reports total distribution of all particles in solution from 10nm to 1000nm

Nanomagnetics Instruments #417

www.nanomagnetics-inst.com

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Oxford University Press #535,537

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Oxford University Press. Booth #s 535 & 537. Our list of books includes the recently published S. Weinberg: Cosmology, X.G. Wen: Quantum Field Theory of Many Body Systems, J. Zinn-Justin: Phase Transitions and Renormalization Group, R. Skomski: Simple Models of Magnetism, H. Bruus: Theoretical Microfluidics, A. Kavokin et al: Microcavities

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