



## 2017 MRS Fall Meeting honors Dresselhaus, presents inaugural awards

[www.mrs.org/fall2017](http://www.mrs.org/fall2017)

More than 6500 people attended the 2017 Materials Research Society (MRS) Fall Meeting and Exhibit held in Boston from November 26 through December 1. The Meeting Chairs, **Ilke**

**Arslan** (Argonne National Laboratory), **Jason A. Burdick** (University of Pennsylvania), **Tao Deng** (Shanghai Jiao Tong University), **James B. Hannon** (IBM T.J. Watson Research Center), and

**Sanjay Mathur** (University of Cologne), organized 54 symposia and organized them into seven topical areas: Broader Impact; Biomaterials and Soft Materials; Electronics, Magnetics, and Photonics; Energy and Sustainability; Nanomaterials; Processing and Manufacturing; and Theory, Characterization, and Modeling.

To complement these sessions, tutorials were offered in several technical areas, more than 240 exhibitors were on-site, and poster sessions were held during the evenings. An international exhibit showcased products and services of interest to the materials community. In addition, several special events highlighted science outreach.

A special workshop was held on nanomaterials and their applications in honor of Professor **Millie Dresselhaus** for her lifelong contribution and impact to materials research. Four sessions featured carbon nanotubes, thermoelectrics, graphene and two-dimensional materials, and frontier topics.

A Quantum Materials Special Session was held in conjunction with Symposium EM08—Emerging Materials for Quantum Information. It featured a panel of experts who discussed and defined quantum materials and their growing interest in regards to materials research. The panelists also discussed the tools for analysis of quantum materials and the super low temperatures required for quantum information systems. A list of sample articles in all MRS publications is posted at [www.mrs.org/quantum](http://www.mrs.org/quantum).

The Public Outreach Committee featured a program on “Materials Needs for Energy Sustainability by 2050—The Role of the Circular Materials Economy.” The *MRS Energy & Sustainability* journal and the MRS Focus on Sustainability Subcommittee convened top experts to discuss the role of the circular economy in bringing about this vision, including related materials science



**Gold Graduate Student Awards.** Top row, left to right: **Longji Cui**, University of Michigan; **John Sypek**, University of Connecticut; **Susan Trolrier-McKinstry**, 2017 MRS President; **Judith Driscoll**, incoming 2018 MRS Awards Committee Co-chair; **Naveen Mahenderkar**, Missouri University of Science and Technology; **Sirimuvva Tade palli**, Washington University in St. Louis. Bottom row, left to right: **Ryan Truby**, Harvard University; **Yuzhang Li**, Stanford University; **Patrick Pietsch**, ETH Zürich. Missing from photo: **Michelle Sherrott**, California Institute of Technology; **Birgitt Stogin**, The Pennsylvania State University (Arthur Nowick Award winner).



**Silver Graduate Student Awards.** Top row, left to right: **Maher Damak**, Massachusetts Institute of Technology; **Yiping Wang**, Rensselaer Polytechnic Institute; **Albert Liu**, Massachusetts Institute of Technology; **David Frazer**, University of California, Berkeley; **Akinola Oyedele**, University of Tennessee, Knoxville; **Alex Ganose**, University College London. Middle row, left to right: **Yongping Fu**, University of Wisconsin–Madison; **Yuanwen Jiang**, The University of Chicago; **Wennie Wang**, University of California, Santa Barbara; **Grace Gu**, Massachusetts Institute of Technology; **Susan Trolrier-McKinstry**, 2017 MRS President; **Judith Driscoll**, incoming 2018 MRS Awards Committee Co-chair; **Shuya Wei**, Cornell University; **Chen Wang**, University of California, Los Angeles; **Arif Abdullah**, University of Illinois at Urbana-Champaign; **Prashant Kumar**, University of Minnesota Twin Cities. Bottom row, left to right: **Hyojin Yoon**, Pohang University of Science and Technology; **Yu Tian**, University of Delaware; **Akanksha Menon**, Georgia Institute of Technology; **Kang Hee Ku**, Korea Advanced Institute of Science and Technology; **Dennis Christensen**, Technical University of Denmark; **Rong Ye**, University of California, Berkeley. Missing from photo: **Jessica Swallow**, Massachusetts Institute of Technology; **Elizabeth Tennyson**, University of Maryland.

challenges and socio-economic and policy factors. The Public Outreach Committee also held an “International Summit of the MRS University Chapters on Sustainability and Nanotechnology.” It included two days of invited talks, panel discussions, and a poster session, which focused on biomedicine, catalysis, sensors, and energy harvesting, and emphasized the concept of sustainability and materials criticality.

The iMatSci Innovation Showcase exhibited technologies that have not yet been productized, but where there is a working prototype or evidence of a repeatable process. The

entities behind these innovations are generally early stage and pre-revenue. Two featured panels were “Raising Capital as an Early-Stage Innovator” and “Corporate

and Institutional Innovation.” Three other presentations featured “Bringing Products to Market—Intellectual Property Considerations and Strategies,” “The Engine:

Venture Capital for Tough Tech,” and “Turning Stuff into Money.”

The Career Fair provided an opportunity for Meeting participants and top



### 2017 Materials Research Society Fall Meeting Symposium Support

1-Material Inc.  
 ACS Nano | ACS Publications  
 ACS Photonics | ACS Publications  
 Alnylam Pharmaceuticals, Inc.  
 Anarghya Innovations and Technology Private Limited  
 Anasys Instruments  
 Angstrom Engineering Inc.  
 APL Photonics | AIP Publishing  
 Applied Diamond, Inc.  
 Applied Materials, Inc.  
 Applied Physics Letters | AIP Publishing  
 Argonne National Laboratory—Advanced Photon Source  
 Arios Ltd.  
 Biomatik Corporation  
 CARAT Systems  
 CEM Corporation  
 Chemistry of Materials | ACS Publications  
 CIVIDEC Instrumentation GmbH  
 Cline Innovations, LLC  
 Dataphysics Instruments GmbH  
 DiamFab  
 Direct Electron, LP  
 Michigan State University—Fraunhofer Center for Coatings and Diamond Technologies

Gatan  
 GDRI Mecano, CNRS  
 Google, Inc.  
 Guangzhou ChinaRay Optoelectronic Materials Co., Ltd.  
 IBM  
 ICDAT LTD.  
 JEOL USA, Inc.  
 Journal of Applied Physics | AIP Publishing  
 Kenosistec  
 Lawrence Livermore National Laboratory  
 Manchester Biomaterials Network (ManBioMat)  
 MDC Vacuum Products, LLC  
 Medtronic  
 Microsoft  
 Microwave Enterprises, Ltd.  
 MilliporeSigma (Sigma-Aldrich Materials Science)  
 Modelling and Simulation in Materials Science and Engineering | IOP Publishing  
 Multifunctional Materials | IOP Publishing  
 Nano Futures | IOP Publishing  
 Nanobio Delivery Pharmaceutical Co., Ltd.  
 Nanoscribe GmbH  
 National Renewal Energy Laboratory

National Science Foundation  
 Nature Catalysis | Springer Nature  
 Nature Energy | Springer Nature  
 New Diamond Technology, LLC  
 NNCrystal US Corporation (NN-Labs)  
 NovaCentrix  
 Ohio University—Nanoscale and Quantum Phenomena Institute (NQPI)  
 Phase Holographic Imaging Photon etc.  
 Precision NanoSystems  
 Princeton Instruments  
 Quantum Science and Technology | IOP Publishing  
 Raith America, Inc.  
 Science | AAAS  
 Seki Diamond Systems  
 Shanghai Runshuo Medical Instrument Co., Ltd.  
 Mr. and Mrs. Bartlett Sheinberg  
 Strem Chemicals, Inc.  
 Sustainable Energy & Fuels | Royal Society of Chemistry  
 Thermo Fisher Scientific  
 University of Delaware  
 ZEISS Microscopy



employers to discuss career opportunities and featured recruiters and on-site interviews, career development, resume critique and mock interviews, professional photos, and job seeker/employer networking. All services are free of charge to MRS members.

Attendees learned about MRS/OSA and MRS/TMS Congressional Fellowships during a Congressional Science and Engineering Fellowship Program Information Session. Current

and former Fellows shared their experiences as scientists in the Senate and House of Representatives. Materials Voice was available on-site to gather support for sustained federal research funding through personalized letters addressed to representatives on Capitol Hill.

Award recipients at the Fall Meeting were Monica Jung de Andrade, who received the MRS 2017 Woody White Service Award, Andy Tay, who

received the inaugural *MRS Bulletin* Postdoctoral Publication Prize, and the team of Fabien Debrot, Jean Cattin, Esteban Rucavado, and Elliot Morgan, who won first place in the Science in Video Competition.

These highlights and more from the 2017 MRS Fall Meeting are available through news coverage of the Meeting in *Meeting Scene*<sup>®</sup> and on MRS TV. **Further information can be accessed at [www.mrs.org/fall2017](http://www.mrs.org/fall2017).**

## Science in Video Awards

[www.mrs.org/sci-vid](http://www.mrs.org/sci-vid)

This past fall, the Science in Video (SciVid) competition accepted submissions of short, two-minute videos about a wide range of materials science topics that were intended to teach, amaze, and amuse a broad audience. During the 2017 MRS Fall Meeting, SciVid spotlighted the finalists from the competition, where 23 video entries were received. Sponsors included the MRS Foundation, Goodfellow Corporation, and A.J. Drexel Nanomaterials Institute. First place was awarded \$1000, second place \$500, third place \$300, and People's Choice received \$700.

The video finalists were posted to YouTube, where viewers were able to

vote for their favorite submission for the People's Choice Award. There were 6500 video views in less than 10 days, with more than 1400 people voting.

Babak Anasori, Drexel University, created and chaired the competition. "It takes weeks to make a good video. It is much more difficult than a photo. I saw this competition as a way to encourage students to work with other departments and to help them learn communication skills without 'teaching' them," said Anasori.

Because of the success of the competition, it has received funding to continue through 2018.

### 1st Place

#### *Let There Be Light*

Produced by **Fabien Debrot, Jean Cattin, Esteban Rucavado, and Elliot Morgan**, École Polytechnique Fédérale de Lausanne.

### 2nd Place

#### *Dissolving Microneedle Patch for Polio Vaccination*

Produced by **Chandana Kolluru**, Georgia Institute of Technology.

### 3rd Place

#### *Advanced Porous Materials for Fuel Cells*

Produced by **Rodrigo Ortiz de la Morena and Antoni Forner-Cuenca**, University of St Andrews and Massachusetts Institute of Technology.

### People's Choice Award

#### *From Denticles on Shark Skin to Ship Coating*

Produced by **Charlton Chai Gao Jun, Poh Yu Hui, Reneita Manogaran, Shi Yan Wen, and Sandy Sim Xue Qi**, Republic Polytechnic.

### Honorable Mention

#### *The Journey to Make Better Batteries*

Produced by **Armin Vahid Mohammadi, Jafar Orangi, Andrew Tormanen, Emre Kayali, Hengze Chen, and Majid Beidaghi**, Auburn University.



Back row, left to right: Armin Vahid Mohammadi, Honorable Mention; Babak Anasori, Drexel University; Stephen Aldersley, President, Goodfellow Corporation; Yury Gogotsi, Drexel University. Front row, left to right: Antoni Forner-Cuenca, 3rd place; Monica Morales, accepted award on behalf of 1st place team; Chandana Kolluru, 2nd place.