

Stephen J. Pennycook Guest Editor for this issue of MRS Bulletin Oak Ridge National Laboratory, Oak Ridge,

TN 37831, USA: tel. 865-574-5504; and email pennycooksj@ornl.gov.

Pennycook is a corporate fellow in the Materials Sciences and Technology Division at Oak Ridge National Laboratory and leader of the Electron Microscopy Group. He holds a BA, MA, and PhD degrees from the University of Cambridge, UK. His current research interests focus on the development of Z-contrast scanning transmission electron microscopy and electron energy-loss

spectroscopy with sub-Angstrom resolution, and applications to materials science, catalysis, biology, and nanoscience. He has been awarded the Materials Research Society Medal and the Thomas Young Medal of the Institute of Physics.



Christian Colliex

Guest Editor for this issue of MRS Bulletin

Centre National de la Recherche Scientifique, Solid State Physics Laboratory at Université Paris Sud, Orsay, France; and email colliex@lps.u-psud.fr.

Colliex is the research director for the Centre National de la Recherche Scientifique in the Solid State Physics Laboratory at Université Paris Sud, Orsay, France. He has led the electron microscopy group for more than 30 years, focusing on instrumental and methodological developments, in particular in EELS spectros-

copy and STEM imaging. Colliex has thus focused many efforts on promoting spectroscopic imaging to the identification of a single atom. From 2006 to 2010, he was president of the International Federation of Microscopy Societies. He also has been the laureate of several national and international awards over the past few years (the France-Taiwan grand prize, the Holweck medal from the Institute of Physics and the Société Française de Physique, and the Grande Médaille of the French Society for Metallurgy and Materials Science).



Leslie J. Allen

School of Physics, University of Melbourne, Parkville, Victoria 3010, Australia; and email lja@unimelb.edu.au.

Allen is an Australian Research Council (ARC) Australian Professorial Research fellow and leads the Theoretical Condensed Matter Physics Group at the University of Melbourne. He obtained a PhD degree in theoretical physics from the University of South Africa. His research interests are in the area of atomic resolution electron microscopy and spectroscopy. He was awarded the John Sanders Medal of the Australian Micros-

copy and Microanalysis Society in 2006 for his work in this area. Allen also is a member of the editorial board of Ultramicroscopy.



Maria A. Aronova

National Institutes of Health, Bethesda, MD 20892, USA; tel. 301-451-3858; and email aronovaa@mail.nih.gov.

Aronova is a research fellow in the Laboratory of Cellular Imaging and Macromolecular Biophysics at the National Institute of Biomedical Imaging and Bioengineering, National Institutes of Health. She received her BS degree from the State University of New York, Binghamton, and her PhD degree in physics from the University of Maryland. Her recent interests include correlative imaging of cells and research to combine energy-filtered imaging with

electron tomography to determine three-dimensional compositional maps of cells.



Gianluigi Botton

Department of Materials Science and Engineering, McMaster University, Hamilton, Ontario, Canada; tel. 905-525-9140, ext. 24767; and email gbotton@mcmaster.ca.

Botton joined the Department of Materials Science and Engineering at McMaster University in 2001. He is currently a professor at McMaster University and scientific director of the Canadian Centre for Electron Microscopy. After earning his PhD degree in materials engineering at Ecole Polytechnique in Montreal, he was a research associate in the Department of Mate-

rials Science and Metallurgy at Cambridge University and then a research scientist at the Materials Technology Laboratory of Natural Resources Canada in Ottawa. He holds the Tier 1 Canada Research Chair in Electron Microscopy of Nanoscale Materials.



Adrian J. D'Alfonso

School of Physics, University of Melbourne, Parkville, Victoria 3010, Australia; and email adrian@dalfonso.com.au.

D'Alfonso is a postdoctoral research fellow in the Theoretical Condensed Matter Physics Group at the University of Melbourne. He obtained a PhD degree in theoretical physics from the University of Melbourne in 2010 on the topic of atomic resolution imaging in two and three dimensions. He was awarded both the FEI Cowley-Moodie Award of the Australian Microscopy and Microanalysis Society and the 2011 Bragg Gold

Medal of the Australian Institute of Physics for this work.



Bert Freitag FEI Company. The Netherlands: and

email Bert.Freitag@fei.com.

Freitag works at FEI Company, The Netherlands. He obtained his PhD degree in experimental physics from the University of Cologne (Germany) in 1995. He was a postdoctoral researcher in the Institute for Inorganic Chemistry in Bonn (Germany) before joining FEI in 2000 as an application specialist for material science TEM research. During his time at FEI his role has changed to product manager for Cs-corrected and monochromated S/TEM products and to

marketing manager for the entire high-end TEM research market served by the Titan platform.



F. Javier García de Abajo

IQFR-CSIC, Serrano 119, 28006 Madrid, Spain; tel. 34-653-700-342; and email J.G.deAbajo@csic.es.

García de Abajo is currently a research professor at the Spanish CSIC. He received his PhD degree from the University of the Basque Country in 1993. He also was a research fellow at Lawrence Berkeley National Laboratory. García de Abajo is a fellow of the American Physical Society and the Optical Society of America. His main interests lie in electron microscopy and plasmonics.

DOI: 10.1557/mrs.2011.338



Jaume Gazquez

Institut de Ciència de Materials de Barcelona ICMAB-CSIC, Campus de la UAB, 08193 Bellaterra, Spain; tel. 34-935801853; and email jgazquez@icmab.es.

Gazquez has been a researcher in the Department of Superconducting Materials and Large Scale Nanostructuration at the Institute of Materials Science of Barcelona (ICMAB), Spain, since September 2010. He received his PhD degree in physics from Universitat Autònoma de Barcelona, Spain, in 2007. Then he joined the STEM Group of the Oak Ridge National Laboratory as a post-

doctoral researcher. There, he focused on characterizing functional materials by means of advanced electron microscopy techniques. His main research interest is to study the relationship between atomic and the electronic structure of complex oxide materials and their properties.



Dmitri O. Klenov

FEI Company, The Netherlands; and email Dmitri.O.Klenov@fei.com.

Klenov works at FEI Company, The Netherlands. He obtained his PhD degree in engineering from the University of Birmingham (UK) in 2001. His graduate research involved materials characterization using conventional transmission electron microscopy and related techniques. After working as a postdoctoral researcher at the University of California, Santa Barbara, Klenov joined FEI as an application scientist. He works on novel electron microscopy techniques and their

application for structural characterization of interfaces and extended defects in thin films.



Haruka Kobayashi

National Institute of Advanced Industrial Science and Technology, AIST Central 5, 305-8565, Japan; tel. 81-29-861-0290; and email haruka-kobayashi@aist.go.jp.

Kobayashi is a member of the technical staff at the National Institute of Advanced Industrial Science and Technology (AIST), Japan. After earning her BE degree from the faculty of science and technology at Waseda University, she was an engineer at Toppan Printing Co. before joining AIST in 2009.



Mathieu Kociak

Laboratoire de Physique des Solides, Bâtiment 510. CNRS/UMR8502. Université Paris Sud. Orsay F-91405, France; tel. 33169155361; and email mathieu.kociak@u-psud.fr.

Kociak is an associate researcher at the Centre National De La Recherche Scientifique in Orsay, France. He received a PhD degree from the University of Paris XIth on superconductivity and plasmons in carbon nanotubes in 2001. He then moved to the Meijo University, Nagoya, Japan, where he performed in situ transport measurements on individual carbon nanotubes. Afterward,

he spent one year in the Condensed Matter Laboratory (SPEC) in Saclay, France. working on designing a Magnetic Force Microscope. He then got a position at the Laboratory for Solid States Physics in Orsay, France. His main research interests include the study of the correlations between the structure and the optical and electronic properties of individual nano-objects. He is currently working on nano-optics with fast electrons using EELS and nanocathodoluminescence. Kociak's awards include the Guinier Prize of the French Physical Society (2002).



Masanori Koshino

Nanotube Research Center, National Institute of Advanced Industrial Science and Technology, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8565, Japan; tel. 81-29-861-4479; and email m-koshino@aist.go.jp.

Koshino is a research scientist at the National Institute of Advanced Industrial Science and Technology (AIST), Japan. He joined AIST after working as a group leader of ERATO at the Japan Science and Technology Agency. Koshino also was a researcher and a lecturer at Kyoto University where he received his DSci degree. His research

interests include characterizations of organic- and biomaterials, nanocomposites, quantum dots, and photovoltaic solar cells and their theoretical interpretations. He received the Young Scientists' Prize from MEXT Japan (2011).



Richard D. Leapman

National Institutes of Health, Bethesda, MD 20892, USA; tel. 301-496-2599; and email leapmanr@mail.nih.gov.

Leapman is scientific director of the National Institute of Biomedical Imaging and Bioengineering at the National Institutes of Health, where he also is a principal investigator and heads the Laboratory of Cellular Imaging and Macromolecular Biophysics. He received his BA, MA, and PhD degrees in physics from the University of Cambridge, UK. His interests include the development of electron energy loss spectroscopy, scanning transmission

electron microscopy, and electron tomography for application to biological systems. Leapman has more than 150 publications in these areas of research. He also is a fellow of the Microscopy Society of America and recipient of the Society's Burton Medal.



Kazu Suenaga

National Institute of Advanced Industrial Science and Technology, AIST Central 5, 305-8565, Japan; tel. 81-29-861-6850; and email suenaga-kazu@aist.go.jp.

Suenaga is a senior research fellow at the National Institute of Advanced Industrial Science and Technology (AIST), Japan. He obtained his PhD degree from the University of Tokyo in the field of materials science. After working as a postdoctoral researcher at the Ecole Nationale Superieure des Mine de Paris and the Solid State Physics Laboratory in the University Paris-Sud, he joined

the Japan Science and Technology Agency and then the AIST Nanotube Research Center. Suenaga's research interests involve electron microscopies for individual atomic imaging and spectroscopy.



Maria Varela

Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA, and Universidad Complutense de Madrid, Madrid 28040, Spain; tel. 865-574-6287; and email mvarela@ornl.gov.

Varela has been a research staff member in the STEM group of the Materials Science and Technology Division of the Oak Ridge National Laboratory (ORNL) since 2002. She also is a professor in the Department of Fisica Aplicada III of the University Complutense of Madrid (UCM), where she got her PhD degree in physics in 2001. She has wide experience in high spatial resolution

electron microscopy and spectroscopy and also in the growth, physical properties, measurements, and structural characterization of thin films, in particular, magnetic or high-temperature superconducting thin films and superlattices. She has authored more than 130 papers and is a recipient of several awards, including the Royal Spanish Physics Society Award for Novel Researchers, the Oak Ridge National Laboratory Wigner Fellowship, and the European Research Council Starting Investigator Award.