

**A Workshop on
Experiments in Materials Engineering and Technology
From NEW:Update 98**

**James A. Jacobs
School of Science and Technology
Norfolk State University**

The experiments demonstrated at this workshop resulted from the National Educators' Workshop:Update 98 - Experiments in Engineering Materials, Science and Technology (**NEW:Update 98**). The workshop was held in New York, on November 1 - 4, 1998 and hosted by Brookhaven National Laboratory, Columbia University and University of Stony Brook with the sponsorship of BNL, NASA, NIST, Norfolk State University and the Gateway Engineering Coalition. This **13th annual NEW:Update** continued the work of strengthening materials education. About 100 participants witnessed demonstrations of experiments, discussed issues of materials science and engineering (MSE) with people from education, industry, government, and technical societies, heard about new MS&E developments, and chose from nine, three-hour mini workshops in state-of-the-art research facilities at BLN, Columbia, and USB. Faculty in attendance represented high schools, community colleges, smaller colleges, and major universities from the US, Costa Rico and Mexico. Undergraduate and graduate students also attended and presented.

NEW:Update 98 participants saw the demonstration of about forty experiments and aided in evaluating them. We also heard updating information relating to materials science, engineering and technology presented at plenary sessions.

NEW:Updates have concentrated on enhancing MSE education. The annual gatherings have placed emphasis on updating educators and students and providing laboratory experiments and on emerging technology for teaching fundamental and newly evolving materials concepts. The events have also resulted in a national materials education network to enhance MSE education at the community college and university levels as well as providing support to math, science, and technology education to pre college students.

The NEW:Update series, has become a rational focus for improved materials engineering education and research. Keeping the series of workshops going annually has been a challenge due to ever decreasing of funds to support these important activities. NASA, DOE, NSU, NIST, and Boeing Airplane Company have provided crucial support to maintain the workshops' continuation. The automotive industry has recently joined our partnership. The project relies on scores of peopling helping to make it successful, including authors of experiments, volunteers who organize and manage each workshop, college and university faculty who participate and spread the word, and staff and members of technical societies as ASEE, ASMI, MRS, and ICME.

This combined effort of private industry, governmental laboratories, technical societies, colleges and universities has provided materials education at many levels with very valuable resources. The International Council for Materials Education publishes selected experiments from NEW:Updates in *The Journal for Materials Education*. Each year, ASEE's Materials Division devotes one or more sessions at the annual conference to help disseminate experiments from to previous NEW:Update.

Additional Resources for Experiments and Educational Materials

The web page for NEW:Updates is <http://coulomb.nsu.edu/NEW> and is also linked to several other materials education resources web sites. A main web site on materials education (<http://www2.tms.org:900>) has recently been added and promises to offer many resources to those interested in materials education.

The *Experiments in Materials Science, Engineering, and Technology (EMSET - CD ROM)* is an extensive collection of experiments and multimedia content from NEW:Updates. The CD content can be adapted to many environments for teaching materials science, engineering and technology. Using the popular Adobe Acrobat Reader, users can search for topics and authors, read, select and edit experiments to fit their student's unique needs. The CD is available as ISBN 0-13-648486-7 with demonstrations/ordering on web site <http://www.prenhall.com> or at 1-800-526-0485.

NEW:Update 99

The Partnership for the Next Generation Vehicle's subgroup, United States Automotive Materials Partnership which is comprised of DOE, DiamelerChrysler, Ford and General Motors will host NEW:Update 99 in Auburn Hills, Michigan, October 31 through November 3, 1999 with the aid of local universities. To obtain information on NEW:Update 99 see our web page at <http://coulomb.nsu.edu/NEW>.

JAMES A. JACOBS

James A. Jacobs is Professor of Technology at Norfolk State University. He developed the concept and has been co-director of all the NEW:Updates. He has twenty-eight years of teaching experiences in public schools, community colleges, and universities. He has developed curricula offerings at all three levels, including courses in material science, materials and processes technology, engineering materials technology, and principles of manufacture. He has industrial experience with Westinghouse Corp., and Tenneco, Ford Motor Co. He is the author of numerous articles and technical papers/presentations. Dr. Jacobs co-authored *Engineering Materials Technology*, in its fourth edition and published by Prentice-Hall Inc. He has been involved as consultant and director with numerous grants, seminars, and curriculum development efforts in engineering materials, manufacturing, robotics, and CAD/CAM.