

Bhakta B. Rath

2004-2005 President of ASM International

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Nearly 50 years after becoming a member, Dr. Bhakta B. Rath, Associate Director of Research for Materials Science and Component Technology at the Naval Research Laboratory, has become the President of ASM International.

Dr. Rath took a long and sometimes difficult path to come to the United States to pursue graduate education and his love for science. He adopted this nation and seized the opportunity to create new advances in materials science and technology for all humanity. His many technical and managerial achievements and his many honors validate his success. He has done so as an individual who leads by example with high moral and ethical values, incredible intelligence and innovation, and an appreciation for the human characteristics of each and every person with whom he interacts. I am confident that Bhakta will lead ASM with great distinction, innovation, and vision for the future.

Educator and industrial researcher

Bhakta received his B.S. in Physics and Mathematics in India, M.S. in Metallurgical Engineering from Michigan Technological University, and Ph.D. from Illinois Institute of Technology.

In 1961, he joined the faculty of Washington State University and held a tenured position until 1965. From 1965 until 1972, he was a member of the staff of the Edgar C. Bain Laboratory for Fundamental Research of U.S. Steel Corporation, and from 1972 to 1976, he headed the Metal Physics Research Section of the McDonnell Douglas Research Laboratories.

In this position, he was the principal engineer in solving a number of technical problems, including failure of the Skylab active coolant system, structural integrity of air-superiority fighter aircraft, and several proprietary technologies of the U.S. Navy and the Department of Defense. In the period after 1972, he served at various times as an Adjunct Professor at Carnegie Mellon University, the University of Maryland, and the Colorado School of Mines.

Service to the Navy and the nation

Bhakta joined Naval Research Laboratory (NRL) in 1976 as head of the Physical Metallurgy Branch. From 1982 to 1986, he served as the Superinten-

dent of the Materials Science and Technology Division. In 1986, he assumed his present position, where he is responsible for planning, supervision, and administration of all basic and applied research at NRL, in all fields of natural science.

As head of the Materials Science and Component Technology Directorate, innovation and leadership by example have been the benchmark of his management style. Through his creative planning, supervision, and administration, he has brought significant improvements to NRL quality and productivity. He has been proactive in exploiting new opportunities. For example, he established a workshop program for the Directorate that explores several emerging areas of technology each year. He also reorganized the Directorate structure, and renovated the NRL Materials and Chemistry Focus Area.

Supporting innovative research

Bhakta has long recognized that NRL's principal asset is its people. Through the years, based on the concept of equal opportunity for all, he has fostered a laboratory environment renowned for research excellence.

Outstanding research requires constant renovation in research facilities. Bhakta has established a number of unique capabilities, including the NRL EpiCenter for Advanced Semiconductor Research, and a materials research station on the Synchrotron light source at Brookhaven National Laboratory.

Foreseeing the tremendous opportunities now reflected in the National Nanotechnology Initiative, he persisted over 15 years to successfully acquire military construction funds for a new building dedicated to nanoscience research, and capital funds for the specialized equipment to measure/manipulate materials at the nanoscale.

Bhakta has always emphasized productivity with impact as the most important measure of effective science and engineering management. NRL has been recognized as one of the top ten institutions worldwide for "most cited papers in

NRL discoveries and innovations have been rapidly transitioned into Naval/DoD technology applications.

Selected examples include:

- The Surface Acoustic Wave miniaturized chemical sensor, which has been commercialized by at least two different companies and is under performance test evaluation by the DoD as its new chemical warfare field sensor.
- Several different coating technologies with special properties — skid-resistance for carrier

materials science" (*Science*, Oct 20, 1995).

In terms of U.S. Patents, a National Science Foundation study showed NRL's research in physics, and in engineering and technology, ranked fifth and eighth respectively out of 430 U.S. institutions (*JOM*, July 1998). Most of these cited research efforts were conducted under Bhakta's stewardship.

Awards and recognition

Among his many honors, in 1999 and again in 2004, Bhakta received the Presidential Rank Award, given by the President of the United States for sustained outstanding achievements of a senior executive. In 2004, NRL presented Bhakta with its highest recognition, the Lifetime Achievement Award, for his exemplary performance and dedication to NRL, the Department of the Navy, and the Department of Defense. He also received the Chief of Naval Research's Group Achievement Award in 1996 for his contributions to the Sea Wolf submarine program.

Bhakta has served in many planning and steering committees and panels for the U.S. Navy, Air Force, Army, DOD, DOE, NSF, and NASA. He is a member of the Advisory Board of six universities and has actively participated in a number of National Materials Advisory Board panels. He is a Fellow of ASM (1982), TMS (1992), Indian Materials Research Society (1990), Indian National Academy of Engineering (1995), and the Institute of Materials, U.K. (2002).

He has published over 170 technical papers and reports, edited over 20 books on various topics in Materials Science and Engineering, and serves

decks, corrosion prevention for holding tanks, and solar energy reflection for reduced hull heat loading.

- A Nuclear Quadrupole Resonance system for the detection of explosives in containers, which has been commercialized and has been deployed to several Washington locations in response to the 9-11 attacks.

- High-temperature superconductors that have been incorporated into a full-scale ship propulsion system with higher power density.



Dr. Bhakta B. Rath, 2004-2005 president of ASM International.

on the editorial boards of a number of international technical journals.

Personal side

For an individual with such outstanding credentials, recognition, and accomplishments, Bhakta is very approachable and personable. His guiding light is Sushie, his wife of 41 years, a gentle lady with great inner strength. Daughter Mina is a computer specialist working in the Information Technology business sector. Twin sons Manesh and Manik are lawyers. Although justifiably proud of both of them, Bhakta has wondered out loud to me, "Why lawyers and not scientists? I just don't know where I went wrong."

He has also been successful at balancing his Indian heritage with that of America's multicultural society: he has immense pride in both. He is an individual whose core values of dedication, patience, perseverance, and hard work have served him well. Epitomizing these attributes is one of his favorite passages taken from the quotations of Thomas Jefferson, who said, "I am a great believer in luck. The harder I work, the more I have."

For 2004-2005, this hard-working man is going to be the enthusiastic President of ASM International. We ASM members are the lucky ones. ●

"In 1956, I was a starry-eyed student at Michigan Tech, adjusting to minus 30 degree temperatures and hundreds of inches of snow. I was approached by Prof. Harold Meese, who introduced me to ASM. In his hands, he held the 1948 Edition of the Metals Handbook, and he assured me that this book would become my new bible. I cannot tell you how right he was."

— Bhakta Rath, ASM Awards Dinner, October 2004.