



Subrata Chakrabarti

SUBRATA K. CHAKRABARTI

1941–2009

Elected in 2002

“For major contributions to the field of hydrodynamics and fluid structure interaction in the design of harbor, coastal, and offshore structures.”

BY ZEKI DEMIRBILEK AND R. CENGIZ ERTEKIN
SUBMITTED BY THE NAE HOME SECRETARY

With great sadness we observe the passing of our renowned friend SUBRATA KUMAR CHAKRABARTI on January 23, 2009. Like his family, friends, and students throughout the world, his colleagues in the engineering profession were shaken by this great loss. Before we recognize his outstanding works, we acknowledge his great love for his wife Prakriti, son Prabal and daughter Sumita, and two grandchildren Sajni and Anandi.

Subrata was born February 3, 1941, and in 1963 received his BS degree from Jadavpur University, India, where he was awarded the Jadavpur Gold Medal, and his MS and PhD degrees in 1965 and 1968, respectively, from the University of Colorado, winning a scholastic citation. He had a long and illustrious career at Chicago Bridge and Iron (CBI) Company in Plainfield, Illinois, from 1968 to 1996, much of it as director of marine research. This was followed by a varied career as a consultant; as a founder and president of Offshore Structure Analysis Inc.; and as a teacher and member of the College of Engineering faculty at the University of Illinois in Chicago.

Adapted from Demirbilek Z, Morrison D, Ertekin R. 2009. Tribute to Subrata Kumar Chakrabarti. *Journal of Waterway, Port, Coastal, and Ocean Engineering* 135(4):125–126.

Subrata loved to teach and to share his shining intellect. He reached out to industry by teaching his famous courses on dynamics of floating structures and model testing and on the theory and practice of risers and mooring systems. And his long list of invited lectures took him from coast to coast in North America and to Brazil, Italy, France, Denmark, India, China, and Australia, among other countries. He lectured at many prestigious schools, such as the Technical University of Denmark/Lyngby, the Indian Institute of Technology (Madras), and the US Naval Academy (Annapolis).

The fruits of Subrata's professional life are as stunning in quantity as in quality. In addition to seven books on offshore engineering, numerical modelling of fluid-structure interactions, hydrodynamics and vibrations, offshore structure modelling, and nonlinear methods in offshore engineering, he authored more than 125 refereed journal publications and over 75 conference proceedings. He was an internationally known expert on wave-structure interactions related to offshore and coastal structures, and made important contributions in hydrodynamics, floating structure dynamics, numerical and experimental fluid mechanics, structural vibrations, and statistical methods for metocean data analyses.

His projects included the development of software for on-board monitoring of drilling rig risers and mooring systems, hydrodynamic software development and verification, and model testing supervision. He was responsible for the promotion of testing facilities; design of wave tanks, wave generators, instrumentation, and numerous model tests; research, analytical studies, and software development in fluid-structure interaction; and testing of hydrodynamic projects. He led the design and analysis of various offshore projects, including the Dubai storage tanks, the CBI submersible, the Garoupa mooring tower (a North Sea production platform), Gulf of Mexico platforms, and the development of a deepwater-compliant drilling platform in the Santa Barbara channel.

He studied viscous flow effects and their coupling with wave-structure interaction, and was involved in the analysis of heave plates for added mass and damping for wave energy structures

and in the integrated hydrodynamic and structural analyses of deepwater-compliant offshore systems, including spars, tension leg platforms (TLPs), floating production storage and offloading systems (FPSOs), and semisubmersible concepts. His success in developing a world-class laboratory testing facility at CBI and his skillful consulting efforts led him to assist others in establishing wave tanks, for example, to refurbish basins at Escondido, California, and to launch the world's largest model basin at the University of Rio de Janeiro's Coimbra Institute of Graduate Studies and Research in Engineering (COPPE).

Subrata's son Prabal informed us that his father loved and appreciated his native Bengali culture, especially music and the works of the Bengali poet and Nobel laureate Rabindranath Tagore. Tagore said, "I slept and dreamt that life was joy. I awoke and saw that life was service. I acted and behold, service was joy." This attitude permeated Subrata's life. According to Prabal, "Our Baba always felt that he, and everyone, was obligated to serve. I think he regarded his desire to serve as God's gift to him. Service to his profession was his calling."

Subrata gave an enormous amount of his time and energy to our profession by organizing international conference series such as the Offshore Mechanics and Arctic Engineering (OMAE) Offshore Symposium. He was also active in a variety of roles on numerous editorial boards:

- technical editor, *Applied Ocean Research* (Elsevier; 1998–2009) and ASME's *Journal of Offshore Mechanics and Arctic Engineering* (1986–1996);
- proceedings coeditor, OMAE and ASME (1985–2004) and *Fluid-Structure Interaction*, Vol. I (2001), Vol. II (2003);
- associate editor, *Ocean Engineering* (Elsevier; 2006–2009), *Applied Ocean Research* (Elsevier; 1991–1998), ASME's *Journal of Energy Resources Technology* (1984–1986);
- editorial board member, *Topics in Engineering*, CML Publications (1987); *Applied Ocean Research* (1982–1991), and *Marine Structures Journal* (1988–1991);
- publication committee member, WPCOE, ASCE (1978–1984); and

- international editorial board member, *Advances in Fluid Mechanics Series* (1993–2009).

Although his colleagues tried to reward him, it was always evident that Subrata took his real reward in a deep love for his profession. Still, the awards and honors accorded him demonstrate his exceptional services, which his colleagues continually sought and appreciated. In addition to his election to the National Academy of Engineering, he was recognized as a fellow of the American Society of Civil Engineers, American Society of Mechanical Engineers, and American Association for the Advancement of Science. And he won the following awards:

- J. James R. Croes Medal (ASCE, 1974);
- Freeman Scholar (ASCE, 1979);
- Outstanding New Citizen, Chicago (1981);
- Ralph James Award (ASME, 1984);
- Ocean, Offshore, and Arctic Engineering (OOAE) Division Special Achievement/Service Awards (ASME, 1988, 1990, 1991) and Distinguished Service Award (ASME, 1998); and
- OOAE Division–ASME Life-Time Achievement Award (2005).

Subrata distinguished himself in all areas.

In 2011 ASME's OOAE Division honored Subrata by establishing the prestigious OMAE Subrata Chakrabarti Young Professional Award, given annually at the OMAE conference to a young professional who has presented an outstanding paper. The award recognizes both the originality and technical merit of the manuscript and the delivery of the presentation.

Subrata lectured worldwide and served as an expert and consultant to industry and governments, but his greatest virtue was his humility. He was kind, considerate, and friendly, and his hallmark was a great smile. We are blessed to have had the opportunity to serve with a cordial colleague and a master teacher who inspired us by setting a great example of how we can serve our profession, and by loving and working with

people of different origins, religions, and cultures. As George Bernard Shaw said, "Life ranks all men, but death reveals the eminent." It appears that these words were meant to describe our esteemed colleague.

Farewell to our "gentle giant," compassionate leader, articulate diplomat, dedicated professional, loving husband and father, and efficient organizer, as well as an approachable, patient, and persevering human being. In closing, we use the words of Subrata's admired Tagore: "Death is not extinguishing the light; it is only putting out the lamp because the dawn has come." We will all miss Subrata, and take comfort in his light that lives on in his works and in our memories.