
Sultana Nahar and Anil Pradhan



Researchers

Sultana Nahar, Ph.D., serves as a senior research scientist in the Department of Astronomy at The Ohio State University. Her research focuses on atomic processes in astronomy: photoionization, electron-ion recombination, photoexcitation and particle collisions. Her scholarly contributions include the development of the unified method for total electron-ion recombination, theoretical spectroscopy for the Breit-Pauli R-matrix method and the resonant nano-plasma theranostics (RNPT) method for more efficient use of X-rays in cancer diagnostics and therapy. Because of her extensive study of iron ions, Nahar is known as the Iron Lady. Prior to her position at Ohio State, Nahar held a postdoctoral position at Georgia State University.



Nahar has promoted physics research and education in the developing countries since 1995. For her contributions, the American Physical Society (APS) honored her with the John Wheatley Award in 2013. She is an APS Fellow and also was named the Woman Physicist of the Month by APS, a once-in-a-lifetime recognition. Additionally, she is a founder of the International Society of Muslim Women in Science.

Nahar holds doctorate and master's degrees, both in quantum optics, from Wayne State University. Earlier, she earned master's and bachelor's degrees, both in theoretical physics from Dhaka University in Bangladesh.

Anil Pradhan, Ph.D., serves as a professor of astronomy, chemical physics and biophysics at The Ohio State University. In addition to atomic physics, Pradhan has led an interdisciplinary team of biomedical researchers from physics, chemistry, astronomy, radiation oncology and pathology dedicated to a project called Resonant Nano-Plasma Theranostics (RNPT) on X-ray irradiation of nanoparticles embedded in cancerous tumors. He is a 2013-14 Fulbright Scholar and the director of a U.S.-India project for training the next generation of science, technology, engineering and mathematics (STEM) faculty in India under the Obama-Singh 21st Century Knowledge Initiative Award. Nahar is the associate director of the project.

Pradhan is a Fellow of the American Physical Society. He held a postdoctoral fellowship at the Joint Institute for Laboratory Astrophysics at the University of Colorado-Boulder and a five-year National Science and Research Council

Pradhan earned a doctorate in physics from University College London in England. He also earned bachelor's and master's degrees, both in physics, from the University of Windsor in Canada.

Pradhan and Nahar have worked closely for many years, co-authoring the first textbook in atomic astrophysics, *Atomic Astrophysics and Spectroscopy* (Cambridge University Press, 2011). Their astronomy research relates to most classes of objects: stars, nebulae, black hole environments, etc. They are regular users of OSC resources, friends of the consortium and guest contributors to the OH-TECH Blog.

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Organization: Department of Astronomy, The Ohio State University