

ANIL K. PRADHAN (Resume)

Homepage: <http://www-astronomy.mps.ohio-state.edu/~pradhan/>

Degrees:

B.Sc. (Hons. Physics), University of Windsor, Ontario, Canada

M.Sc. (Physics), University of Windsor

Ph.D. (Physics and Astronomy), University College London, U.K.

Appointments (1983 -)

Professor, Biophysics Graduate program, The Ohio State University (OSU), 2009-

Professor, Department of Astronomy (OSU) 1994-

Professor, Chemical Physics Program (OSU) 1991-

Adjunct Professor, The Ohio Supercomputer Center, 1989-1991

Associate Professor, Department of Astronomy (OSU), 1989-1994

Associate Professor (Attendent Rank), Department of Astrophysical, Planetary and Atmospheric Sciences, University of Colorado (CU), Boulder, 1986-1989

Senior Research Associate and Member, Joint Institute for Laboratory Astrophysics (CU), 1983-1989

NSERC University Research Fellow (Assistant Professor Level), University of Windsor, Canada, 1981-1983

Multi-disciplinary Research: (*Over 100 news media items are listed on the Homepage above*)

- Atomic processes in laboratory and astrophysical plasmas
- Spectral analysis of space and ground based astrophysical observations
- Computational and experimental nanoscience for biomedical applications in cancer theranostics

Publications: Approximately 300 publications — Over 180 refereed papers and 100 review articles, book chapters, invited conference proceedings, etc.

Textbook: *Atomic Astrophysics and Spectroscopy*, Cambridge University Press (2011), Co-author: Sultana N. Nahar

Patent (pending): *Monochromatic X-Ray Devices and Their Uses*, International Patent Cooperation Treaty (PCT) Application (2011).

Selected Consulting & Visiting

- High-Energy Division, Harvard-Smithsonian Center for Astrophysics (CfA) (1981, 1982)
- General Atomic Technologies, San Diego (1985)
- Lawrence Livermore National Laboratory (1988)
- National Institute for Standards and Technology (1990-1991)
- Center for Extreme Ultraviolet Astrophysics, UC Berkeley (1993-1995)
- Visiting Lecturer, Universite de Paris (1999,2005)
- Observatoire de Paris, Meudon (2001, 2005)
- Institute for Theoretical Atomic and Molecular Physics (ITAMP), CfA (2004, May-August 2005)

Selected Honors and Awards

- Fulbright-Nehru Distinguished Fellowship in Teaching and Research, 2013-14.
- Distinguished Research Mentor, Denman Undergraduate Research Forum, The Ohio State University 2013.
- Large Interdisciplinary Grant Award, PI, *Computational Nanoscience at Fundamental Atomic and*

Molecular Scales, The Ohio State University, 2004.

- Innovation Award, Advanced Technology Summit, Ohio Supercomputer Center, (Finalist, 2007)
- Fellow, American Physical Society (Division of Atomic, Molecular, Optical and Plasma Physics), Elected 2000
- Natural Sciences and Engineering Research Council (NSERC) of Canada Award, 1980 (5-yr University Research Fellowship)

Major Research Areas and Projects

- Spectral analysis of astrophysical objects: active galactic nuclei, stars, and nebulae
- Magnetic and inertial nuclear fusion plasma diagnostics
- The Opacity Project and The Iron Project — Computations for stellar opacities
- Biomedical research on X-ray irradiation of high-Z nanomaterials

Member Editorial Boards: (i) *Journal of Atomic, Molecular, and Optical Physics*, (ii) *Journal of Atomic, Molecular, Condensate and Nano Physics*.

Selected Administration and Service Assignments

International:

- Director: Indo-US Center for STEM Education and Research — Joint OSU-AMU APJ Abdul Kalam Center, Aligarh Muslim University, India (2013 -).
- Principal Investigator: *US-India STEM Education and Research Faculty Project*, Indo-US 21st Century Knowledge Initiative, Ohio State-Aligarh Muslim University Partnership (2013-2017).
- Senior Adviser, Vice Provost, Global Strategies and International Affairs (OSU)
- Principal Investigator and Chair - Indo-US Forum for Space Collaboration, Conference on *Challenges to Solar Cycle 24*, Physical Research Laboratory, India, January 22-27, 2007

National:

- Chairman and Organiser, session on "New Astrophysical Opacities", The AAS meeting, Columbus, Ohio, June 7-11, 1992
- Chairman and organiser, session on "Molecular Astrophysics and Opacities", Symposium on Molecular Spectroscopy, Columbus Ohio, June 15-19, 1992

University:

- Faculty Senate (2005-)

College of Biological, Mathematical and Physical Sciences:

Promotion and Tenure Committee (2001-2005, Chair — 2006,2007); Computer Committee (1997)

Department:

Steering Committee (1992), Chair — Graduate Studies Committee (1991-93,1999-2001); Chair — Computer Committee (1990-1995, 2005)

Professional Affiliations: American Physical Society (Fellow), American Astronomical Society, International Astronomical Union

Teaching

- *Graduate courses:* Scattering Theory, Atomic Physics, Astrophysical Spectroscopy
- *Undergraduate courses:* Introductory Astronomy (I. Planets and the Solar System, II. Stars and the Universe), Introduction to Stellar Astrophysics

Supervision of Graduate Students and Postdoctoral Fellows

- 16 graduate students, 6 postdoctoral fellows