



THE OHIO STATE UNIVERSITY



Prof. Sultana Nurun Nahar (US Citizen)

APS Fellow, Woman Physicist of the Month of APS, BPS Fellow

Dept of Astronomy, The Ohio State U. Columbus, OH 43210

Tel: (614)292-1888 (O), (614)299-9809(H), Fax: (614)292-2928

Email: nahar.1@osu.edu, Web: <http://www-astronomy.ohio-state.edu/~nahar>

PRESENT POSITIONS:

- *Research Professor*, Dept of Astronomy, The Ohio State University, Columbus, Ohio, 2015-
- *Co-Director (Research & Chief Liaison)*, Indo-US APJ Abdul Kalam Center for STEM Education and Research of AMU-OSU, 2013 - present
- Adjunct Professor, Department of Physics, Aligarh Muslim University, India, 2017 -
- Adjunct Professor, Department of Physics, Cairo University, Egypt, 2018-

RESEARCH AREAS:

- Atomic Astrophysics - Iron opacity, Exoplanetary spectroscopy
- Photoionization - established characteristic features
- Electron-Ion Recombination (developed unified method with Pradhan)
- Photo-Excitations of ions
- Electron Impact Excitations of ions
- Dielectronic Satellite Lines - Extended unified theory for DES lines
- Theoretical Spectroscopy (developed quantum defect based spectroscopy algorithm for R-matrix method)
- Member: International collaborations, “the Opacity Project” & “the Iron Project” - develop theory to study characteristics & compute high accuracy large scale data for radiative and collisional atomic processes in astrophysical plasmas - ”**Iron Lady**” for work on iron ions
- Co-leader: Multi-disciplinary (Astronomy, Physics, Chemistry, Pathology, Radiation Oncology) Biomedical Nanoscience program “Resonant Nano-Plasma Theranostics” (RNPT) for cancer treatment using x-rays - RNPT is one of the 4 high-impact contributions of astronomy along with GPS, wireless internet, laser eye surgery (**Astronomy Magazine**, May 2012)

PUBLICATIONS IN SCIENTIFIC RESEARCH: ~ 178

PUBLICATIONS IN STEM RESEARCH & EDUCATION, OUTREACH: 32

GRADUATE TEXTBOOK: “*Atomic Astrophysics and Spectroscopy*” By: A.K. Pradhan, S.N. Nahar (Cambridge Univ Press, 2011) (Bridging Physics & Astronomy)

On-line Database: NORAD-ATOMIC DATA:

- Energies, - Oscillator Strengths, - Photoionization Cross Sections, - Electron-Ion Recombination rates, - Lifetimes, etc (by Nahar et al) - 154 atoms & ions
<http://norad.astronomy.ohio-state.edu>

National/International TEACHING & COMPUTATIONAL WORKSHOPS : 22

FOUNDING MEMBER OF SOCIETIES/NETWORK/TRUST: 8

- Co-founder: Frontiers of Physics (FOP) for advancement of science education in Bangladesh (with Dr. Charles Clark of NIST), Established 2019
- Co-founder and Co-Director, Indo-US A.P.J. Abdul Kalam Centre for STEM Education and

Research of OSU-AMU, India, 2013 -

- Founder: International Society of Muslim Women in Science, Over 300 members from 31 countries, Established: 2010
 - Founder: International Society of Muslim Women in Science at Ohio State, Student Chapter, Established: 2017
 - ISMWS student chapter at East Carolina University, USA
 - ISMWS student chapter at Aligarh Muslim University, India
 - Co-Founder: International Society of Arab Women in Science (with Prof. Lotfia El Nadi of Cairo University), 250 members from 7 countries, Established: 2010
 - Founder: A Network of Scientists in Developing Countries: 29
- Exchange of information on science issues, conferences, APS memberships etc.
- Founder & Sponsor: STEM Research & Education Programs:
Universities and institutions: USA, Bangladesh, Egypt, India, Pakistan, Palestine
 - Founder and sponsor: Abdur Razzaq & Shamsun Nahar Trust for Education, Bangladesh