

FACULTY PROFILE



NANDITA LAHKAR

M. Sc., M.Phil, Ph.D

SLET qualified

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Designation: Assistant Professor,
Department of Physics, Guwahati College, Guwahati.

Working Experience

- 1) Working as Assistant Professor in the Department of Physics, Guwahati College since 24th September, 2022 till date.
- 2) Worked as an Assistant Professor in the Department of Physics, Girijananda Chowdhury Institute of Management and Technology (G.I.M.T.), Guwahati from 24th of August, 2009 till 23rd September, 2022 (13 years and 1 month).

Branch of Specialization : Astrophysics.

Field of Research : Theoretical Astrophysics aiming at stellar physics, stellar nucleosynthesis and galactic structure and dynamics.

Research Experience

- 1) Currently working on galactic astrophysics.
- 2) PhD thesis entitled “A Study on the Heavy Rare Isotopes in the Cosmos” submitted to Gauhati University in 2015.
- 3) Submitted Dissertation paper on High Energy Physics entitled “Some Aspects of Parton Model and QCD” during M.Phil in 2009.
- 4) Submitted Dissertation paper on Astrophysics entitled “An Introductory Study On Quasars” during M.Sc. Course in 2007.

Publications

- 1) “**Element Synthesis in the Cosmos: Progress and Prospects**”, Nandita Lahkar, HORIZON-A Journal of Physics, Vol. 4, ISSN: 2250-0871, PP39-61 (2017).
- 2) “**Abundances of La 138 and Ta 180 through ν nucleosynthesis in 20 M_{\odot} type II supernova progenitor guided by stellar models for seeds**”, N. Lahkar, S. Kalita, H. L. Duorah and K. Duorah, J. Astrophys. Astr., Vol. 38 (1), article id 0008, DOI 10.1007/S12036-017-9428-Y (2017)
- 3) “**A comparative study on SN II progenitors for the synthesis of Li7 and B11 with the help of neutrinos**”, N. Lahkar, S. Kalita, H.L. Duorah and K. Duorah, J. Astrophys. Astr. Vol. 36, 375-383, (2015)
- 4) “**Synthesis of Rare Elements in Sun**”, Nandita Lahkar, K. Duorah and H.L. Duorah, Proceedings of National Seminar on Recent Developments in Natural Sciences, organized by D.K.D. College, Dergaon and North East Centre for Research & Development (IGNOU), 2012, ISBN : 978-81-924389-0-0
- 5) “**Neutrino emission from non-superfluid and superfluid neutron star core due to neutron-neutron collision**”, Nandita Lahkar, K. Duorah, Journal of Assam Science Society ISSN: 0587-1921, vol. 52 (1), 2011.
- 6) “**Synthesis of Rare Elements in Sun**”, Nandita Lahkar, K. Duorah and H.L. Duorah, Proceedings of National Seminar on Recent Developments in Natural Sciences, organized by D.K.D. College, Dergaon and North East Centre for Research & Development (IGNOU), 2012, ISBN : 978-81-924389-0-0

Faculty Development Programmes attended

- 1) Participated and successfully completed the 5-day online FDP on the theme “Inculcating Universal Human Values in Technical Education” organized by All India Council for Technical Education (AICTE) from 11th July to 15th July, 2022.
- 2) Participated in the Six-day AICTE sponsored Short Term Training Program on “Recent Developments in the Teaching and Research” organised by the Department of Business Administration, Girijananda Chowdhury Institute of Management & Technology, Guwahati during 15th to 20th March, 2021
- 3) Attended and successfully completed the online Refresher Course ARPIT (Annual Refresher Programme in Teaching) - 2019 course on Astronomy and Astrophysics entitled “Stars and stellar systems” under SWAYAM.
- 4) Participated in the Workshop on “ **Induction Programme for Students**” organized by Assam Science & Technology University under TEQIP – III at Girijananda Chowdhury Institute of Management & Technology, Guwahati on 10th July, 2018.
- 5) Participated in the Faculty Development Programme on “**Behavioural Remodelling for Enhancing the Classroom Delivery of Teachers**” organized by E&ICT Academy IIT Guwahati in association with Girijananda Chowdhury Institute of Management & Technology, Guwahati during 21st – 26th May, 2018.
- 6) Participated in the Workshop on “**Outcome based Education for NBA Accreditation**” organized by Assam Science & Technology University, Assam under TEQIP –III project of MHRD Govt. of India on 20th and 21st April, 2018.
- 7) Participated in the Faculty Development Programme on “**Data Science with PYTHON**” organized by Girijananda Chowdhury Institute of Management & Technology, Guwahati during 12th June to 16th June, 2017.
- 8) Participated in the Faculty Development Programme on “**Meeting Global Challenges in Higher Technical Education**” organized by Girijananda Chowdhury Institute of Management & Technology, Guwahati during 28th July to 1st August, 2015.
- 9) Participated in the National Seminar on “**Frontiers in Nanotechnology (FNT)**”, organized by Department of Basic Science and Humanities, Royal School of Engineering and Technology, held on 16th November, 2013, at Royal Group of Institutes, Guwahati.
- 10) Participated in the National Workshop on “**Deployment and Use of NPTEL Courses**” jointly organized by Royal Group of Institutions, Guwahati and IIT-G during 29th to 30th April, 2013.

Conferences attended and paper presentations

- 1) Presented a paper entitled “**Neutrino emission from non-superfluid and superfluid neutron star core due to neutron-neutron collision**” at 55th Technical Session of Assam Science Society held in Gauhati University on 15th February, 2010.
- 2) Participated in the National Conference on Recent Trends in Mathematics and its Applications, held at Department of Mathematics, Gauhati University, during 12-13 September, 2009.
- 3) Presented paper entitled “**Cesium in Sun**” at UGC Sponsored National Seminar on Recent Developments in Natural Sciences organized by Dergaon Kamal Duwera College, Dergaon in collaboration with N.E.C.R.D., IGNOU, Guwahati on 20 & 21 January, 2012.
- 4) Presented paper entitled “**Synthesis of rare heavy isotopes in sun with neutrinos**” at the National Conference on Recent Trends of Research in Physics organized by Department of Physics, Tripura University on 3 & 4 February, 2012.
- 5) Presented paper entitled “**Synthesis of rare isotopes in stars with neutrinos**” at 57th Technical Session of Assam Science Society held in Gauhati University on 16 March, 2012.
- 6) Presented poster entitled “**Stellar nucleosynthesis with neutrinos**” at the One Day UGC-SAP National Seminar on New Frontiers in Physics held in Department of Physics, Gauhati University on 11th May, 2012.
- 7) Presented paper entitled “**Low mass X-ray binaries with general relativistic effects**” at the National Seminar on Frontiers in Science and Technology held in Gauhati University on 8th & 9th March, 2013.
- 8) Presented paper entitled “**Ramanujan’s Contribution and String Theory**” at the National Conference on Mathematics Commemorating Birth Anniversary of Srinivasa Ramanujan organized by Department of Mathematics, G.I.M.T., Guwahati on 23rd December, 2013.
- 9) Presented paper at the IXth Biennial National Conference of Physics Academy of North East organized by North Eastern Regional Institute of Science & Technology, Nirjuli, Arunachal Pradesh, during 18th-20th December, 2014.
- 10) Presented paper entitled “**Synthesis of Li and B in SN II progenitors with the help of neutrinos**” in the 33rd meeting of the Astronomical Society of India held at the National Centre for the Radio Astrophysics of Tata T.I.F.R, Pune during 17-20 February, 2015.
- 11) Presented paper entitled “**Astrophysical Nucleosynthesis in presence of Neutrinos and Axion**” in the North East Meet of Astronomers (NEMA-2015) held at Tezpur University during 26-28 October, 2015.
- 12) Presented paper entitled “**Additional Cooling agents for neutron stars and implications for nucleosynthesis on neutron star crust**” in the Xth Biennial National Conference of Physics Academy of North East organized by St. Anthony’s College, Shillong, during 10th – 12th November 2016.

- 13) Presented paper entitled “**Synthesis of Li7 and B11 in type II supernovae and implications for galactic La138 and Ta180 abundances**” in the North East Meet of Astronomers (NEMA-2015) held at Tezpur University during 12th – 14th December, 2016.
- 14) Presented paper entitled “**Element synthesis in the Universe**” in UGC sponsored National Workshop on General Relativity and Astronomy organized by Department of Physics, Tinsukia College during 4 – 6 January, 2018.
- 15) Presented paper entitled “**Element synthesis in extreme astrophysical environment**” in UGC-SAP sponsored National Seminar on Progresses in Nuclear and High Energy Physics, organized by Department of Physics, Gauhati University during 30 – 31 March, 2018.

Workshops attended

- 1) Participated in the “**Workshop on Recent trends in Astronomy and Astrophysics**” held during 21-23 October, 2009, in Tezpur University, Assam, sponsored by IUCAA.
- 2) Participated in the “**Introductory Workshop on Astronomy and Astrophysics**” organized by NECRD, IGNOU; sponsored by and in collaboration with IUCAA during 15-17 December, 2010.
- 3) Participated in the “**Introductory Workshop on Astronomy and Astrophysics**” organized by Department of Physics, Manipur University and sponsored by IUCAA, Pune during 10-12 February, 2014.
- 4) Participated in the “**Introductory Workshop on Relativistic Astrophysics**” organised by Department of Physics, Gauhati University in collaboration with IUCAA, Pune during 21-23 August 2014.
- 5) Participated in the “**National Workshop on Gravitational Wave Astronomy**” organised by Department of Physics, Dibrugarh University in collaboration with IUCAA, Pune during 2-4 November 2016.
- 6) Participated in UGC sponsored “**National Workshop on General Relativity and Astronomy**” organized by Department of Physics, Tinsukia College during 4 – 6 January, 2018.

Organizational membership

- 1) Life member of the Physics Academy of the North East (PANE).
- 2) Life member of the Assam Science Society.
- 3) Visiting Associate of Inter University Centre or Astronomy & Astrophysics (IUCAA), Pune since 1st August 2017.