

Curriculum Vitae

Himadri Sekhar Das, Ph.D.

Professor, Department of Physics

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Education

- **Ph.D.**, Assam University, Silchar 2000 - 2005
Thesis title: *Photopolarimetric studies of comets and other objects* ([Link to Thesis](#)).
- **M.Sc. Physics**, Assam University, Silchar 1997 - 1999

Employment History

- **Faculty** 2007 - Present
(Assam University, Silchar)
- **Postdoctoral Fellow** Sep 2013 - Dec 2013
(Department of Astronomy, University of Maryland, College Park, USA)

Administrative Responsibilities

- **Head of Physics Department** March 21, 2024 - Present
(Department of Physics, Assam University, Silchar)
 - Provided strategic leadership for the department, overseeing faculty, curriculum advancement, and resource allocation.
 - Enhanced student mentorship and academic programs to strengthen educational outcomes and research engagement.
- **Proctor** January 03, 2022 - April 03, 2024
(Assam University, Silchar)
 - Maintained discipline among students and enforced university rules and regulations.
 - Investigated cases of student misconduct and imposed appropriate disciplinary actions.
 - Ensured campus security by overseeing security personnel and responding to security emergencies.
- **Dean of Student Welfare (DSW)** April 06, 2021 - January 02, 2022
(Assam University, Silchar)
 - Oversaw student welfare initiatives and support services.
 - Collaborated with faculty and administration to enhance student experience.
 - Oversaw the administration of university hostels, ensuring a conducive living environment for students.

Research Interests

- **Cosmic Dust Scattering:** Exploring the scattering properties of cometary, asteroidal, and interstellar dust to understand their physical and chemical composition.
- **Polarimetric Studies of Small Bodies:** Analyzing the polarization of light scattered by comets and asteroids to probe their surface properties and internal structure.
- **Star Formation Processes:** Investigating the role of magnetic fields and turbulence in the formation of stars, with a focus on the evolution of protostellar cores and disks.

Supervision

- **M.Phil. Scholars:**

5. **Ms. Saonli Datta Majumder** (2009): Aggregate dust model to describe the polarization properties of comet.
4. **Mr. Abinash Suklabaidya** (2008): *Modelling of the light scattering by cometary dust using fractal aggregates.*
3. **Ms. Tapasree Paul** (2008): *Study of light scattering by aggregate particles in comet Levy 1990XX.*
2. **Mr. Dipankar Paul** (2009): *To study the dust grain characteristics of comet by comparing the theoretical polarization values with the observed polarization values for comet* (Registered to Periyar University, Salem through distant mode).
1. **Mr. Sujit Ranjan Das** (2008): *Polarimetric studies of comet Halley using T-matrix theory* (Registered to Madurai Kamaraj University, Madurai through distant mode).

- **Ph.D. Scholars:**

15. **Bhaskar Goswami** (awarded on 11-12-2025) (PhD Enrolment No.: 0120200161, dtd. 21-09-2020): *Study of optical properties of cosmic dust through light scattering.*
14. **Rajat Subhra Paul** (awarded on 25-09-2025) (PhD Enrolment No.: 0120210180, dtd. 30-12-2021): *Investigation of some selected molecular clouds through Photo-Polarimetry.*
13. **Tanuj Kumar Dhar** (awarded on 25-07-2025) (PhD/2834/2015 dtd. 12-09-2015): *Study of Light Scattering Properties of Cometary and Interstellar Dust.*
12. **Gulafsha Begom Choudhury** (awarded on 02-05-2024) (PhD Enrolment No, & Date: 0120180122 dtd. 25.01.2018): *Study of Molecular Clouds through Photometry and Polarimetry.* ([Link to Thesis](#))
11. **Ayesha Maryam Mazarbhuiya** (awarded on 23-04-2024) (PhD/2837/15 dtd. 12.09.2015): *Polarimetry as a Tool to Study the Dust Properties of Comets.* ([Link to Thesis](#))
10. **Prithish Halder** (awarded on 01-05-2019) (PhD/2380/13 dtd. 11.09.2013): *Study of Physical Properties of Cosmic Dust from Light Scattering.* ([Link to Thesis](#))
9. **Jaydeep Paul** (awarded on 10-10-2018) (PhD/2276/13 dtd. 03.04.2013): *A Theoretical Study of Double Layers and Sheaths in Various Plasma Configurations.* ([Link to Thesis](#))
8. **Ajoy Barman** (awarded on 13-08-2018) (PhD/2031/12 dtd. 12.09.2012): *Photometric and Polarimetric Studies of Some Selected Dark Clouds.*
7. **Arup Das** (awarded on 07-08-2018) (PhD/2384/13 dtd. 11.09.2013): *Photopolarimetric Study of some Selected Dark Clouds.*

6. **Parizath Deb Roy** (awarded on 26-07-2017) (PhD/1787/11 dtd. 22.09.2011): *A comprehensive dust model to describe the polarization properties of comet.*
5. **Arindwam Chakraborty** (awarded on 26-07-2017) (PhD/1788/11 dtd. 22.09.2011): *Study of optical properties of cosmic dust by numerical simulations and observations.*
4. **Abinash Suklabaidya** (awarded on 07-08-2013) (PhD/1114/10 dtd. 07.04.2010): *Modelling of light scattering properties of cometary dust.* ([Link to Thesis](#))
3. **Chinmoy Bhattacharjee** (awarded on 16-04-2013) (PhD/ 719/2009/ dtd. 16.04.2013). *Study of Light Scattering properties of cosmic dust (as a Co-supervisor).* ([Link to Thesis](#))
2. **Dipankar Paul** (awarded on 26-09-2012) (PhD/718/09/ Dtd. 11.02.09). *Study of Polarisation properties of comets and other objects (as a Co-supervisor).*([Link to Thesis](#))
1. **Sujit Ranjan Das** (awarded on 16-11-2011) (PhD/650/08 dtd. 17.04.08). *Modelling of Optical characteristics of cometary dust by fractal aggregates (as a Co-supervisor).* ([Link to Thesis](#))

Skills

- **Languages:**
Strong reading, writing and speaking competencies in English, Bengali, Hindi, and Assamese.
- **Experience in Computer:**
 - **Operating Systems:** WINDOWS, UNIX (LINUX).
 - **Programming languages:** Python, C++, FORTRAN.
 - **Image Processing Software:** IRAF, IRIS, APT, fv.
 - **Other Software Packages:** Latex, Gnuplot, Super Mongo, Mathematica, etc.

Awards, Fellowships, and Achievements

- **Honored by Rotary Club of Hailakandi (2018):**
Honored by the Rotary Club of Hailakandi for contributions to the field of Astronomy & Astrophysics on **July 01, 2018**.
- **Paragon Excellence Award (2015):**
Honored by *Paragon*, an NGO in Badarpur (Assam), with the **Paragon Excellence Award-2015** on **January 30, 2016** for service in the fields of Education and Nation Building.
- **Inspired Teachers' In-Residence Programme at Rashtrapati Bhavan (2015):**
Honored by the Hon'ble President of India, **Shri Pranab Mukherjee**, during the *Inspired Teachers' In-Residence Programme at Rashtrapati Bhavan* held from **6th June to 12th June, 2015**. The title *Inspired Teacher* (alternatively referred to as President's Inspired Teacher) represents the highest civilian recognition for university-level teachers in India, awarded as part of an In-Residence Programme with the President of India at Rashtrapati Bhavan, New Delhi.
- **Indo-US Research Fellowship (2013):**
Awarded the **Indo-US Research Fellowship** for 2013 to conduct advanced research in **Physical Sciences (Astrophysics)** for a duration of three months (September 15 – December 15, 2013) under **Prof. Ludmilla Kolokolova** at the **University of Maryland, USA**. This fellowship was supported by the Indo-US Science and Technology Forum (IUSSTF) in association

with the Science and Engineering Research Council (SERC) of the Department of Science and Technology (DST), Govt. of India.

- **DAE Fellowship (2000 - 2004):**

Worked as a Research Fellow (RF) in the Department of Physics, Assam University, Silchar, under the guidance of **Dr. Asoke Kr. Sen** from March 29, 2000, toward Ph.D. research in a project (BRNS/98/37/6) titled *Photopolarimetric Studies of Comets*, funded by the Department of Atomic Energy (Govt. of India) in collaboration with Bhabha Atomic Research Centre (BARC), Mumbai.

- **Saktipada Das Memorial Award (1992):**

Recipient of the *Saktipada Das Memorial Award* for the year 1992 for securing the highest position in the H.S.L.C. Examination 1992 among students from Nilmani H.S. School, Karimganj, Assam.

- **Sushama Paul Memorial Award (1992):**

Recipient of the *Sushama Paul Memorial Award* for the year 1992 for securing the highest position in the H.S.L.C. Examination 1992 among students from Nilmani H.S. School, Karimganj, Assam.

Visiting Positions and Memberships

- **Member of the Executive Council of the ASI:**

Councillor of the Executive Council of the Astronomical Society of India for the triennium 2025-27.

- **Visiting Scientist:**

Visited University of Maryland, Maryland, USA under Indo-US Science and Technology Forum (IUSSTF) Fellowship, during September-December 2013, March-April 2017 to carry out collaborative research work.

- **Visiting Associate:**

Inter University for Astronomy and Astrophysics (IUCAA), Pune, India since August 01, 2007.

- **Visiting Observer:**

Aryabhata Research Institute of Observational Sciences (ARIES), Manora Peak, Nainital, India.

- **Member:** International Astronomical Union (IAU) (Membership No. 17910).

- **Life Member:** Astronomical Society of India (ASI) (Life Membership No. L 2158).

- **Life Member:** Physics Academy of North East (PANE) (Life Membership No. LM-0255).

Research Project

- **Principal Investigator (PI):**

Department of Science & Technology (DST) (SR/FTP/PS-092/2011), Govt. of India, under the FAST Track scheme. Project funded by DST at Assam University, commencing from July 2012 and completed in 2016. The project title was '*Study of Light Scattering Properties of Cosmic Dust Using Cluster Computation*'.

Astronomy Outreach and Observation Programs

- Organized and conducted numerous night sky observation programs using telescopes at Assam University, providing students with hands-on experience in astronomical observations and fostering interest in the field of Astronomy.
- Engaged in extensive outreach activities, visiting various schools, colleges, and universities to promote Astronomy and raise awareness about space sciences.
- Conducted interactive sessions, practical demonstrations, and presentations tailored to inspire interest in Astronomy among young students and the general public.
- Aimed to bridge the gap between theoretical knowledge and real-world astronomical phenomena, making complex topics accessible and exciting to a broader audience.

Research Publications

In Journals:

55. B. Barman, **H. S. Das**, B. Prasad, S. Yadav, R. S. Paul, D. Paul, A. Suklabaidya, G. B. Choudhury, B. J. Medhi, J. C. Pandey, and N. Panwar. **2026**. *Magnetic Criticality Across Scales: From Support to Collapse in the L1287 Molecular Cloud*. The Astronomical Journal, **XX**, XXXX. (IF: 5.8)
54. S. Biswas, B. J. Medhi, S. Messina, Z. Zhu, S. Qin, S. Deb, A. H. Sheikh, **H. S. Das**, M. Tamura, and R. Sagar, **2026**. *Discovery of an Unbound Flyby Companion of UBC 63: In the Immediate Aftermath of a Close Encounter*. The Astronomical Journal, **XX**, XXXX. (IF: 5.8)
53. R. S. Paul, and **H. S. Das**, **2026**. *Distance Estimates to Five Bok Globules Using Gaia DR3 Parallaxes and Near-Infrared Photometry: Validation with 3D Dust Maps*. Astrophysics and Space Science (ASS), **371**, 80 ([Link to Paper](#)). (IF: 2.1)
52. B. Prasad, B. Goswami, and **H. S. Das**, **2026**. *High phase-angle polarimetry of Near-Earth Asteroids and comparison with Main-Belt Asteroids*. Advances in Space Research (AISR), **XX**, XXXX ([Link to Paper](#)). (IF: 3.2)
51. N. N. Devi, **H. S. Das**, G. B. Choudhury, J. C. Pandey, B. J. Medhi, D. Paul, R. S. Paul, B. Barman, B. Prasad, S. Nath Mazumdar, B. Goswami, and M. Chakravorty, **2026**. *Photopolarimetric studies of comets C/2023 H5 and 333P/LINEAR*. Monthly Notices of the Royal Astronomical Society (MNRAS), **547**, 1–13 ([Link to Paper](#)). (IF: 5.2)
50. S. Biswas, B. J. Medhi, M. Tamura, **H. S. Das**, and J. Kwon, **2026**. *Probing dust and magnetic fields in the young embedded star-forming region AFGL 6366S using IR and optical linear polarimetry*. Astrophysical Journal (ApJ), **1000**, 126 ([Link to Paper](#)). (IF: 5.7)
49. B. Barman, **H. S. Das**, G. B. Choudhury, J. C. Pandey, B. J. Medhi, R. S. Paul, D. Paul, S. Nath Mazumdar, B. Prasad and N. N. Devi, **2026**. *Magnetic Field Morphology and Physical Properties of Two Small Molecular Clouds: L1604 and L121*. Monthly Notices of the Royal Astronomical Society (MNRAS), **545**, 1–20 ([Link to Paper](#)). (IF: 5.2)
48. B. Prasad, **H. S. Das**, T. K. Dhar, G. B. Choudhury, J. C. Pandey, B. J. Medhi, R. S. Paul, D. Paul, B. Barman, S. Nath Mazumdar, B. Goswami, and N. N. Devi, **2026**. *Phase-Polarization Analysis of Asteroids 13 Egeria and 511 Davida: New Low Phase Angle Observations and C-Type Comparisons*. Solar System Research, **60**:7, 1–9 ([Link to Paper](#)). (IF: 0.7)
47. S. N. Mazumdar, **H. S. Das**, G. B. Choudhury, J. C. Pandey, B. J. Medhi, D. Paul, R. S. Paul, B. Barman, B. Prasad, and N. N. Devi, **2026**. *A Combined Photometric and Polarimetric Study of L1578 and L1607: Dust Properties and Magnetic Field Structures*. Astronomical Journal, **171**, 8 ([Link to Paper](#)). (IF: 5.8)
46. N. N. Devi, **H. S. Das**, A. Suklabaidya, & B. Goswami, **2025**. *The Umov effect in polydisperse dust aggregates*. Journal of Quantitative Spectroscopy and Radiative Transfer (JQSRT), **347**, 109617 ([Link to Paper](#)). (IF: 2.0)
45. S. Biswas, B. J. Medhi, S. Deb, **H. S. Das**, & M. Tamura, **2025**. *Structural and Dynamical Characterization of a Young Embedded Cluster AFGL 6366S: A Statistical Approach*. Monthly Notices of the Royal Astronomical Society (MNRAS), **541**, 1557 ([Link to Paper](#)). (IF: 5.2)
44. B. Barman, **H. S. Das**, & P. Byakti, **2025**. *Turbulence and Magnetic Field Alignment in Small Molecular Clouds: the Role of Cloud Size, Mass and Density*. Astrophysical Journal (ApJ), **980**, 252 ([Link to Paper](#)). (IF: 4.9)

43. S. Nath Mazumdar, **H. S. Das**, & S. Wolf, **2025**. *Investigating the correlation between the magnetic field orientation and molecular outflow direction in some molecular clouds*. Monthly Notices of the Royal Astronomical Society (MNRAS), **536**, 2381 ([Link to Paper](#)). (IF: 4.8)
42. R. S. Paul, P. Halder, **H. S. Das**, A. M. Mazarbhuiya, & B. J. Medhi, **2024**. *Investigating the extinction and magnetic field geometry in the Bok globule CB26*. Monthly Notices of the Royal Astronomical Society (MNRAS), **535**, 3353 ([Link to Paper](#)). (IF: 4.8)
41. B. Goswami, **H. S. Das**, N.N. Devi, & P. Halder, **2024**. Influence of porosity on the Umov effect in silicate and organic refractory aggregates. Journal of Quantitative Spectroscopy and Radiative Transfer (JQSRT), **323**, 109019 ([Link to Paper](#)). (IF: 1.9)
40. S. Biswas, B. J. Medhi, S. Deb, S. Deb, **H. S. Das**, & G I Perren, **2024**. *A statistical approach to polarimetric and photometric investigation of the intermediate-age open cluster NGC 1912*. Monthly Notices of the Royal Astronomical Society (MNRAS), **532**, 1241 ([Link to Paper](#)). (IF: 4.8)
39. B. Prasad, & **H. S. Das**, **2024**. *Unveiling the properties of asteroids: linking photopolarimetry to spectral classification*. Monthly Notices of the Royal Astronomical Society (MNRAS), **532**, 22 ([Link to Paper](#)). (IF: 4.8)
38. B. Barman, & **H. S. Das**, **2024**. *Magnetic field alignment in low-mass molecular clouds: The role of turbulence and density of the clouds*. Monthly Notices of the Royal Astronomical Society (MNRAS), **529**, 1715 ([Link to Paper](#)). (IF: 4.8)
37. G. B. Choudhury, B. Goswami, **H. S. Das**, B. J. Medhi, J. C. Pandey, **2024**. *Probing the magnetic field and dust grain properties of two dark clouds L1495 and L1498 through photopolarimetry*. Monthly Notices of the Royal Astronomical Society (MNRAS), **528**, 7156 ([Link to Paper](#)). (IF: 4.8)
36. B. Goswami, and **H. S. Das**, **2023**. *A study of the correlation between polarization maximum to minimum ratio and scattering parameters in a spheroid dust model*. Journal of Quantitative Spectroscopy and Radiative Transfer (JQSRT), **309**, 108689 ([Link to Paper](#)). (IF: 2.3)
35. A. M. Mazarbhuiya, **H. S. Das**, B. J. Medhi, P. Halder and P. Deb Roy, **2022**. *Study of dust coma of comets 32P/Comas Sola and C/2015 V2 (Johnson) by imaging polarimetry*. Astrophysics and Space Science, **367**, 98 ([Link to Paper](#)). (IF: 1.909)
34. G. B. Choudhury, **H. S. Das**, B. J. Medhi, J. C. Pandey, S. Wolf, T. K. Dhar, and A. M. Mazarbhuiya, **2022**. *The Relative Orientation between Local Magnetic Field and Galactic Plane in Low Latitude Dark Clouds*. Research in Astronomy and Astrophysics (RAA), **22**, 075003 ([Link to Paper](#)). (IF: 1.889)
33. A. M. Mazarbhuiya, **H. S. Das**, and P. Halder, **2021**. *The Umov effect in cosmic dust analogue fluffy aggregates*. Monthly Notices of the Royal Astronomical Society (MNRAS), **502**, 2536 ([Link to Paper](#)). (IF: 5.356)
32. G. B. Choudhury, A. Barman, **H. S. Das**, and B. J. Medhi, **2019**. *Bok globule CB17: Polarization, extinction and distance*. Monthly Notices of the Royal Astronomical Society (MNRAS), **487**, 475 ([Link to Paper](#)). (IF: 5.231)
31. O. Ivanova, I. Luk'yanyk, L. Kolokolova, **H. S. Das**, M. Husárik, V. Afanasiev, J. Svoren, V. Rosenbush, N. Kiselev, and V. Krushinsky, **2019**. *Photometry, spectroscopy, and polarimetry of distant comet C/2014 A4 (SONEAR)*. Astronomy & Astrophysics (A&A), **626**, A26 ([Link to Paper](#)). (IF: 6.209)

30. P. Halder, P. Deb Roy and **H. S. Das**, 2018. *Dependence of light scattering properties on porosity, size and composition of dust aggregates*. *Icarus*, **312**, 45 ([Link to Paper](#)). (IF: 3.131)
29. J. Paul, A. Nag, and **H. S. Das**, 2018. *Generation of sheath in magnetized plasma under the impact of slow rotation*. *Chinese Journal of Physics (CJP)*, **56**, 1121 ([Link to Paper](#)). (IF: 1.051)
28. J. Paul, A. Nag, K. Devi and **H. S. Das**, 2018. *Characteristic features of double layers in rotating magnetised plasma contaminated with dust grains with varying charges*. *Journal of the Korean Physical Society (JKPS)*, **72**, 662 ([Link to Paper](#)). (IF: 0.493)
27. P. Deb Roy, P. Halder and **H. S. Das**, 2017. *Study of light scattering properties of dust aggregates with a wide variation of porosity*. *Astrophysics and Space Science (ASS)*, **362**, 209 ([Link to Paper](#)). (IF: 1.622)
26. T. K. Dhar and **H. S. Das**, 2017. *Correlation among extinction efficiency and other parameters in an aggregate dust model*. *Research in Astronomy & Astrophysics (RAA)*, **17**, 118 ([Link to Paper](#)). (IF: 1.371)
25. P. Halder and **H. S. Das**, 2017. *JaSTA-2: Second version of the Java Superposition T-matrix Application*. *Computer Physics Communications (CPC)*, **221**, 421 ([Link to Paper](#)). (IF: 3.936)
24. A. M. Mazarbhuiya and **H. S. Das**, 2017. *The study of correlation among different scattering parameters in an aggregate dust model*. *Astrophysics and Space Science (ASS)*, **362**, 161 ([Link to Paper](#)). (IF: 1.622)
23. A. Das, **H. S. Das**, Biman J. Medhi and S. Wolf, 2016. *Magnetic field geometry of the large globule CB 34*. *Astrophysics and Space Science (ASS)*, **361**, 381 ([Link to Paper](#)). (IF: 1.678)
22. A. Chakraborty and **H. S. Das**, 2016. *Study of magnetic field geometry and extinction in Bok globule CB130*. *Astrophysics and Space Science (ASS)*, **361**, 321 ([Link to Paper](#)). (IF: 1.678)
21. L. Kolokolova, **H. S. Das**, O. Dubovik, T. Lapyonok, and P. Yang, 2015. *Polarization of Cosmic Dust Simulated with the Rough Spheroid Model*. *Planetary and Space Science (PSS)*, **116**, 30 ([Link to Paper](#)). (IF: 1.875)
20. A. Barman and **H. S. Das**, 2015. *Study of grain alignment efficiency and a distance estimate for small globule CB4*. *Research in Astronomy & Astrophysics (RAA)*, **15**, 953 ([Link to Paper](#)). (IF: 1.64)
19. A. Das, **H. S. Das** and A. S. Devi, 2015. *Distance estimation of some selected small Bok globules*. *Monthly Notices of the Royal Astronomical Society (MNRAS)*, **452**, 389 ([Link to Paper](#)). (IF: 5.226)
18. P. Deb Roy, P. Halder, **H. S. Das** and B. J. Medhi, 2015. *Imaging polarimetry of comets C/2013 V1 (Boattini) and 290P/Jager before and after perihelion*. *Monthly Notices of the Royal Astronomical Society (MNRAS)*, **450**, 1770 ([Link to Paper](#)). (IF: 5.226)
17. P. Deb Roy, **H. S. Das** and B. J. Medhi, 2015. *Imaging Polarimetry of Comet C/2012 L2 (LINEAR)*. *Icarus*, **245**, 241 ([Link to Paper](#)). (IF: 2.840)

16. P. Halder, A. Chakraborty, P. Deb Roy and **H. S. Das**, 2014. *Java application for Superposition T-matrix code to study the optical properties of cosmic dust aggregates*¹⁵. Computer Physics Communications (CPC), **185**, 2369 ([Link to Paper](#)). (IF: 3.078)
15. A. Chakraborty, **H. S. Das** and D. Paul, 2014. *Study of background star polarization, and polarization efficiency of three selected Bok globules CB56, CB60 and CB69*. Monthly Notices of the Royal Astronomical Society (MNRAS), **442**, 479 ([Link to Paper](#)). (IF: 5.521)
14. G. Bertrang, S. Wolf and **H. S. Das**, 2014. *Large-scale magnetic fields in Bok globules*. Astronomy & Astrophysics (A&A), **565**, A94 ([Link to Paper](#)). (IF: 5.084)
13. **H. S. Das**, B. J. Medhi, S. Wolf, G. Bertrang, P. Deb Roy and A. Chakraborty, 2013. *Polarimetric studies of comet C/2009 P1 (Garradd)*. Monthly Notices of the Royal Astronomical Society (MNRAS), **436**, 3500 ([Link to Paper](#)). (IF: 5.521)
12. D. Paul, **H. S. Das** and A. K. Sen, 2012. *Imaging polarimetry of the Bok globule CB56*. Bulletin of the Astronomical Society of India (BASI), **40**, 113 ([Link to Paper](#)). (IF: 2.722)
11. **H. S. Das**, D. Paul, A. Suklabaidya and A. K. Sen, 2011. *Modelling the polarization properties of Comet 1P/Halley using a mixture of compact and aggregate particles*. Monthly Notices of the Royal Astronomical Society (MNRAS), **416**, 94 ([Link to Paper](#)). (IF: 4.879)
10. C. Bhattacharjee, D. Deb, **H. S. Das**, A. K. Sen and R. Gupta, 2011. *Modelling of laboratory data of bi-directional reflectance of regolith surface containing Alumina*. Publications of the Astronomical Society of Australia (PASA), **28**, 261 ([Link to Paper](#)). (IF: 1.590)
9. D. Deb, A. K. Sen, **H. S. Das** and R. Gupta, 2011. *The photometric study of light scattering from the surface of alumina powder and interpretations by Hapke formula*. Advances in Space Research, **48**, 1274 ([Link to Paper](#)). (IF: 1.076)
8. **H. S. Das** & A. K. Sen, 2011. *Model for cometary grains to explain optical polarization*. J. Quant. Spectrosc. Radiat. Transfer, **112**, 1833 ([Link to Paper](#)). (IF: 3.193)
7. **H. S. Das**, A. Suklabaidya, S. Datta Majumder and A. K. Sen, 2010. *Aggregate dust model to study the polarization properties of comet C/1996 B2 Hyakutake*. Research in Astronomy and Astrophysics (RAA), **10**, 355 ([Link to Paper](#)). (IF: 0.888)
6. D. Paul, S. R. Das, **H. S. Das** and A. K. Sen, 2010. *Polarisation properties of comet NEAT C/2001 Q4*. Indian Journal of Physics, **84** (6), 623 ([Link to Paper](#)). (IF: 0.226)
5. **H. S. Das**, S. R. Das, and A. K. Sen, 2008. *Aggregate dust model to describe polarization properties of comet Hale-Bopp*. Monthly Notices of the Royal Astronomical Society (MNRAS), **390**, 1195 ([Link to Paper](#)). (IF: 5.249)
4. **H. S. Das**, S. R. Das, T. Paul, A. Suklabaidya, & A. K. Sen, 2008. *Aggregate model of cometary dust: An application to comet Levy 1990XX*. Monthly Notices of the Royal Astronomical Society (MNRAS), **389**, 787 ([Link to Paper](#)). (IF: 5.249)
3. **H. S. Das** & A. K. Sen, 2006. *Polarimetric studies of comet Levy 1990XX*. Astronomy and Astrophysics (A&A), **459**, 271 ([Link to Paper](#)). (IF: 4.223)
2. A. K. Sen, T. Mukai, R. Gupta & **H. S. Das**, 2005. *An analysis of the distribution of background star polarization in dark clouds*. Monthly Notices of the Royal Astronomical Society (MNRAS), **361**, 177 ([Link to Paper](#)). (IF: 5.238)
1. **H. S. Das**, A. K. Sen & C. L. Kaul, 2004. *The polarimetric properties of cometary dust and a possible effect of dust aging by the Sun*. Astronomy and Astrophysics (A&A), **423**, 373 ([Link to Paper](#)). (IF: 3.843)

In Special Issue :

1. **H. S. Das** and A. Barman, **2015**. *Extinction map of a small globule CB 224*. Asian Journal of Physics (AJP), Vol. 24, No 8, pp 1045-1048 (A special issue on Constituents of Interstellar Medium) (ISSN 0971-3093) ([Link to Paper](#)).

In Newsletter :

1. **H. S. Das**, **2018**. *Did Comet sow the seeds of Life on Earth?*. Physics Academy of North East (PANE) Newsletter (Aug 2018), Volume 4, Issue 3, pp 12–18.

In Book :

3. **H. S. Das**, 2025. Exploring the Mysteries of the Universe: An Introduction to Astronomy. In *History of Astronomy of the Mizo people* (Lalrinkimi, L. Zadeng, & M. George, Eds.), pp. 17–25. Publisher: Mizoram Science Centre, Directorate of Science and Technology, Government of Mizoram, India (ISBN: 978-81-990651-7-8).
2. P. Deb Roy, A. Chakraborty, **H. S. Das**, B. J. Medhi, S. Wolf and G. Bertrang, 2013. Polarimetric observation of comet C/2009 P1 Garradd. In *Emerging Areas of Research and Development in Chemical and Physical Sciences in North East India* (R. Sen & D. G. Thakurata, Eds.), pp. 20 – 24. Publisher: Department of Physics and Chemistry, S. S. College, Hailakandi, Assam, India (ISBN: 978-81-908204-3-3).
1. C. Bhattacharjee, **H. S. Das** and A. K. Sen, 2012. Study of extinction at UV range using aggregate dust model. In *Contemporary Trends of Research in Physical Sciences* (T. K. Dey & Apratim Nag, Eds.), pp 55-59. Publisher: Department of Physics, Gurucharan College, Silchar-788004, Assam, India (ISBN: 978-81-923616-0-4).

In Conferences/Symposium etc Proceedings:

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