**Bio-data**

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**Personal Details**

| **Name** | Bipasa Raha |
| --- | --- |
| **Date of Birth** | November 04, 1987 |
| **Gender** | Female |
| **Marital Status** | Married |
| **Nationality**  | Indian |

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**Educational Qualification**

| **Degree** | **Year** | **University/Institute** | **Class Obtained** | **Percentage of Marks** |
| --- | --- | --- | --- | --- |
| NET [Physics] | 2011 | CSIR |  | Ranked 9th in CSIR-JRF |
| M. Sc. [Physics] | 2010 | University of Kalyani | I | 70.67 |
| B. Sc.[Physics] | 2008 | University of Kalyani | I | 61.00 |
| AISSCE | 2005 | C. B. S. E | I | 73.00 |
| AISSE | 2003 | C. B. S. E | I | 82.00 |

| **Research Experience** | 5 Years |
| --- | --- |
| **Field of Interests**  | Communication Engineering, Electronics and Radio Astronomy  |
| **Proposed Title of the Thesis**  | Some Studies on the Plasma Processes in the Jovian Magnetosphere and its Galilean Satellites |
| **List of Publications** | *Vide annexure I* (Journal Publication)*Vide annexure II* (Symposium publication)*Vide annexure III* (Book Publication)  |

***Annexure – I***

**Papers in Journal**

1. Identification of solar flares in the tropics by A. B. Bhattacharya, **B. Raha**, D. K. Tripathi and D. Halder, *International Journal of Advances in Science and Technology,* **3**, 57-61, 2011, (**ISSN:** 2229-5216).
2. Anatomy of solar cycle length and sunspot number: dependence of average global temperature on solar activity by A. B. Bhattacharya, **B. Raha**, T. Das, M. Debnath and D. Halder, *International Journal of Engineering Science and Technology,* **3**, 8012-8018,2011, (**ISSN:** 0975-5462) (**IC Value in 2010**: 3.14).
3. Design Considerations of Arrays as a Viewing Instrument of Radio Telescopes by A. B. Bhattacharya, **B. Raha**, T. Das and M. Debnath, *International Journal of Applied Engineering Research*, **2**, 94-103, 2011, (**ISSN**: 1087-1090).
4. Estimation of the Frequency of Artifacts Likely to Fall Down to Earth and Other Planets by A. B. Bhattacharya, J. Pandit, **B. Raha** and A. Sarkar, *International Journal of Modern Engineering Research*, **2 (3)**, 722-727, 2012, (**ISSN:** 2249-6645).
5. Perturbations at 27 kHz Atmospherics in Relation to Indonesia Earthquake by A.B. Bhattacharya, **B. Raha**, A. Sarkar and J. Pandit *International  Journal of Applied Science and Engineering Research*, **1(2)**, 2011 358-364, 2012, (**ISSN:** 2277-9442).
6. Orionid meteor shower and its effect on ionospheric propagation by A. B. Bhattacharya, J. Pandit, A. Bhoumick, D. Halder, A. Sarkar, **B. Raha** and R. Bhattacharya, *International Journal of Theoretical and Applied Physics,* **2(1)**, 219-229, 2012, **(ISSN:** 2250-0634**),** (**Scientific Impact Index:** 0.1388).
7. Detection of Jovian radio bursts at high altitudes by A. B. Bhattacharya, S. Mondal, J. Pandit, D. Halder, A. Sarkar and **B. Raha**, *International Journal of Engineering Science and Technology,* **4**, 3029-3038, 2012, (**ISSN:** 0975-5462) (**IC Value in 2010**: 3.14).
8. Transit of Venus across the sun at Kalyani sky and some notable changes in the atmospherics record by A. B. Bhattacharya, J. Pandit, **B. Raha** and A. Sarkar, *International Journal of Engineering Research & Industrial Applications,* **5**, 225-234, 2012, (**ISSN:** 0974-1518**)**, (**Scientific Impact Index:** 0.2204).
9. Habitability and biogenic effects on planetary atmospheres by A. B. Bhattacharya and **B. Raha**, *International Journal of Applied Science and Engineering Research*, **1**, 532-542, 2012, (**ISSN:** 2277-9442).
10. Studying transient features through the Solar Corona by 406.7 MHz radio telescope by A. B. Bhattacharya, D. Halder, A. Sarkar, J. Pandit and **B. Raha**, *International Journal of Multidisciplinary Research and Advances in Engineering,* **4**, 225-234, 2012, **(ISSN: 0975-7074)**, (**Scientific Impact Index:** 0.2015).

1. On the Identification of the Building Blocks of the Universe through Particle Astrophysics by A. B. Bhattacharya and **B. Raha**, *International Journal of Physics,* **5**, 141-150, 2012, (**ISSN:** 0975-7155).
2. Detection of radio sources for astronomical studies by A. B. Bhattacharya and **B. Raha**, *International Journal of Advance in Communication Engineering,* **4**, 83-88, 2012, (**ISSN:** 0975-6094).
3. Possibility of being more than one Higgs boson and to a new understanding of dark matter by A. B. Bhattacharya and **B. Raha**, *Oriental Journal of Physics,* **4**, 83-93, 2012, (**ISSN:** 0973-5852).

1. The ideas of 'dark matter' and 'dark energy' as a breakthrough for the unseen universe by A. B. Bhattacharya and **B. Raha**, *New Advances in Physics,* **6***,* 87-98, 2012, (**ISSN:** 0974-3553).
2. Losing the Quantum State of Microtubules to Soul: Possibilities and Challenges by A. B. Bhattacharya, **B. Raha** and A. Bhattacharya, *International Journal of Pharmaceutical Research and Bioscience*, **1**, 315-328, 2012, (**ISSN:** 2277-8713), (**Impact Factor:** 0.525).
3. VHF–Electromagnetic Signal Perturbations Related to Sikkim Earthquake of 18 September, 2011 by A. B. Bhattacharya, A. Sarkar, A. Bhoumick, J. Pandit, **B. Raha** and D. Halder, *International Journal of Theoretical and Applied Physics*, **2**, 65-72, 2012, **(ISSN:** 2250-0634**),** (**Scientific Impact Index:** 0.1388).
4. Observation of Galactic Radio Signal using Interstellar Hydrogen Line at 1420 MHz by A.B. Bhattacharya, A. Sarkar, **B. Raha**, J. Pandit and D. Halder, *International Journal of Engineering Research and Industrial Application*, **5**, 1-10, 2012, (**ISSN:** 0974-1518**)**, (**Scientific Impact Index:** 0.2204).
5. Inflation of the Observed Universe as a Function of Time by A. B. Bhattacharya and **B. Raha**, *International Journal of Application or Innovation in Engineering & Management,* **2**, 22-28,2013, (**ISSN:** 2319 – 4847), (**Impact Factor:** 2.379).
6. The Search for Earth-Like Habitable Planet: Antarctica lake Vostok May be Jupiter’s Europa by A. B. Bhattacharya and **B. Raha**, *Science and Culture*, **79**, 59-61, 2013, (**ISSN:** 0036-8156).
7. Human Brain as Quantum Computer: Existence of a more Fundamental Level in the Physical Universe byA. B. Bhattacharya and **B. Raha**, *International J. Electronics & Communication Technology,* **4,** 120-122, 2013, (**ISSN:** 2230-7109), (**Impact Factor:** 0.306).
8. The Fabric of the Cosmos: the Probable Hidden Soul of Harmony towards a Unified Theory by A. B. Bhattacharya, **B. Raha**, and A. Bhattacharya, *International Journal of Bioinformatics*, **6**, 35-45, 2013, (**ISSN:** 0974-6439).

1. Implications of the holographic principle and string dualities for the building blocks of nature by A. B. Bhattacharya and **B. Raha**, *New Advances in Physics*, **7**, 97-108, 2013, (**ISSN:** 0974-3553).
2. Is the Stormy Weather of Jupiter is Comparable to Earth? ByA. B. Bhattacharya**, B. Raha** and M. Debnath, *International Journal of Application or Innovation in Engineering & Management,* **2**, 162-171, 2013, (**ISSN:** 2319 – 4847), (**Impact Factor:** 2.379).
3. Spectral behavior of Jupiter and the influence of sun on its radio emission byA. B. Bhattacharyaand **B. Raha**, *International Journal of Electrical Engineering and Embedded Systems*, **5**, 107-114, 2013, (**ISSN:** 0975-4830).
4. Plasma interactions as revealed by Jovian radio emission by A. B. Bhattacharyaand **B. Raha**, *International Journal of Physics*, **6**, 60-67, 2013, (**ISSN:** 0975-7155).
5. Absorption of High Energy Particles and Plasma Tori in the Vicinity of Jovian Moons' Orbits by A. B. Bhattacharya and **B. Raha**, *Journal of Information Technology and Engineering (An International Journals)*, **4**, 26-35, 2013, (**ISSN:** 2229-7421).
6. Spacecrafts as viewing instrument of Jupiter’s aurora byA. B. Bhattacharyaand **B. Raha**, *International Journal of Physics,* **6**, 85-93, 2013, (**ISSN:** 0975-7155).
7. Behavioral changes of Jupiter’s little and great red spot: a Survey by A. B. Bhattacharya, M. Debnath and **B. Raha**, *International Journal of Application or Innovation in Engineering & Management*, **2**, 12-23, 2013, (**ISSN:** 2319 – 4847), (**Impact Factor:** 2.379).
8. A Road Map of Particle Physics up to the Threshold of a New Era by A. B. Bhattacharya and **B. Raha**, *International Journal of Physics*, **6**, 1-8, 2013, (**ISSN:** 0975-7155).
9. Detection of radio emissions from Jupiter by A. B. Bhattacharya and **B. Raha**, *Oriental Journal of Physics*, **5**, 1-12, 2013, (**ISSN:** 0973-5852).

1. Exploration of Jupiter through observations by automated spacecraft by A. B. Bhattacharya and **B. Raha**, *Oriental Journal of Physics*, **5**, 20-29, 2013, (**ISSN:** 0973-5852).
2. Modulation of internal processes of Jovian magnetosphere by the solar wind by A. B. Bhattacharya and **B. Raha**, *Oriental Journal of Physics*, **5,** 52-62, 2013, (**ISSN:** 0973-5852).
3. Structure formation of the early Universe to expanding universeby A. B. Bhattacharya and **B. Raha,** *Oriental Journal of Physics*, **5,** 71-80, 2013, (**ISSN:** 0973-5852).
4. The Role of Neutrino Astronomy in the Formation of the Early Universe by A. B. Bhattacharya and **B. Raha**, *International Journal of Physics*, **6**, 38-47, 2013,(**ISSN:** 0975-7155).
5. Formation and Behavior of the Solar Events Originated in Solar Bursts during the Solar Cycle Maximum Activity by A. B. Bhattacharya, T. Das and **B. Raha**, *International Journal of Electronics Communication and Computer Engineering*, **5**, 826-830, 2014, (**ISSN:** 2249 - 071X), (**IF**: 1), (**ICV**: 5.48).
6. Cloud Electrification And Lightning Processes: A Comparative Study Of Solar Planetary System by A. B. Bhattacharya**,** S. Mondal and **B. Raha**, *International Journal of Electronics, Electrical and Computational System*, **3**, 64-74, 2014, (**ISSN:** 0036-8156), (**Impact Factor:** 1.88).
7. “Hot Jupiters”: The Most Astounding Planets in the Galaxy by A. B. Bhattacharya and **B. Raha**, *Science and Culture*, **80**, 309-313, 2014, (**ISSN:** 0036-8156).
8. Planetary Formation and Migration of Hot Jupiters: Possibility of Harboring Earth-Like Planets by A. B. Bhattacharya, S. Mondaland **B. Raha**, *International Journal of Research in Sciences,* **2**,16-27,2014, (**No** **ISSN**).
9. Features of Jupiter’s Satellites with their Cartographic Coordinates and Clusterring by A. B. Bhattacharya and **B. Raha**, **3**, *Journal of Physics and Astronomy,* 2014, (**ISSN:** 2320–6756).
10. Intensity ratios as derived from the luminosity of the setting sun: a comparison through photometry principle and Rayleigh theory by A. B. Bhattacharya, J. Pandit, **B. Raha**, D. Halder, R. Bhattacharya, G. Biswas, R. Royand A. Nag, **3**, *Journal of Physics and Astronomy,* 2014, (**ISSN:** 2320–6756).
11. Formation of Cyclone and Anticyclone in Jupiter: A Battle of Great Red Spot and Red Storm by A. B. Bhattacharya and **B. Raha**, **3**, *Journal of Physics and Astronomy,* **3**, 70-77, 2014, (**ISSN:** 2320–6756).
12. On some aspects of solar radio bursts and associated sunspot numbers by A. B. Bhattacharya, **B. Raha**, Shalini Sarkar, Aparupa Mondal and Sarmila Mondal, *International Journal of Advanced and Innovative Research*, **4**, 402-408, 2015, (**IF:** 0.349), (**ISSN:** 2278-7844**).**
13. Study of pre-monsoon thunderstorms over Kalyani from radio frequency spectra by A. B. Bhattacharya, **B. Raha**, J. Pandit, Shalini Sarkar, Sumit Sarkar and Somasree Mondal, *Indian* *Journal of Radio and Space Physics*, **44**, 96-101, 2015, (**IF:** 0.075), (**ISSN:** 0367-8393).

**Communicated**

1. Use of VLF radio telescope for studying the onset of Indian SW monsoonby A. B. Bhattacharya, A. Sarkar, A. Bhoumick, J. Pandit and **B. Raha**, *International Journal of Meteorology*, 2013 (Communicated), (**ISSN:** 1748-2992).
2. Symmetry breaking and the structure formation of the expanded early universe by A. B. Bhattacharya and **B. Raha**, *Journal of Physics and Astronomy,* 2014 (Communicated), (**ISSN:** 2320–6756).
3. Circulation of Cyclone Nanauk over the Arabian Sea: Slowing Down the West Coast Monsoon Wind by A. B. Bhattacharya, **B. Raha**, R. Bhattacharya and R. Guha, *Journal of Climatology*, 2014 (Communicated), (**No ISSN**).
4. Variation of Oort Cloud flux and cometary impacts on Jupiter and earth by A. B. Bhattacharya, **B. Raha** and J. Pandit, *Earth, Moon and Planets*, 2015 (Communicated), (**ISSN:** 1562-6881) (**I. F.**: 0.769).
5. Probable Habitable Zone in Exoplanetary Systems byA. B. Bhattacharyaand **B. Raha**, *Springer Proceedings* and also presented in *International Conference on Nonlinear Dynamics and its Applications in Physical and Biological Sciences-November,2014 (CNDAPBS-14),* 2015(communicated).
6. On some aspects on Plasma Processes in Jupiter, Saturn, Uranus and Neptune byA. B. Bhattacharyaand **B. Raha**, *Springer Proceedings* and also presented in *International Conference on Nonlinear Dynamics and its Applications in Physical and Biological Sciences-November,2014 (CNDAPBS-14),* 2015(communicated).
7. Interaction of Satellite Io with Its Planet Jupiter: A Case of unique Backfire byA. B. Bhattacharyaand **B. Raha**, *Springer Proceedings* and also presented in *International Conference on Nonlinear Dynamics and its Applications in Physical and Biological Sciences-November,2014 (CNDAPBS-14),* 2015(communicated).

***Annexure – II***

**Papers in Symposia/Conferences**

1. Investigations on transient emissions of celestial objects at radio wavelengths by A. B. Bhattacharya, D. Halder, **B. Raha** and K. Roy, Proceedings of IETE National Conference on Materials, Devices and Circuits in Communication Technology, IETE Burdwan Sub-Center, 42-43, March 27 -28, (2010).
2. A Search for Type III Radio Burst Emission and Sunspot Cyclesby A. B. Bhattacharya, **B. Raha**, A. Maity, S. K. Ghosh and D. Halder, *Proceedings of International Conference on Engineering Education in the New Century (E2NC-2012),* Sir J. C. Bose School of Engineering*,* 128-129, February 03-04, 2012 (**ISBN:- 978-93-80663-35-7**).
3. Variation of North-South Asymmetry of Sunspot Number and
associated Solar Flare Index by A. B. Bhattacharya, **B. Raha**, T. Das and M. Debnath, *Proceedings of IETE National Conference on Materials, Devices and Circuits in Communication Technology (MDCCT)*, IETE Burdwan Sub-Center, February 06-07, 2012 (**ISBN:- 978-93-80663-36-4).**
4. Observations of a Variable Radio Source Associated with the Jupiter and its Galilean Satellites by A.B. Bhattacharya, **B. Raha** and M. Debnath, *National Conference on Control, Communication & Device Electronics (N3CD-2013)*, JIS College of Engineering, 86-92, July 24-25, 2013.
5. Photometric Follow-up of Sun grazing "Dream Comet" ISON and its Impact on Earth and Jovian Magnetosphere by A. B. Bhattacharya and **B. Raha**, *Fourth National Conference on Frontiers in Instrumentation, Control, Computer and Communications (Ic3–2014),* January 10-11, 2014.
6. Degradation in Jovian Signal Strength and Link Quality during Meteor Showers by A. B. Bhattacharya and **B. Raha**, *National Conference on Emerging Technology and Applied Sciences (NCETAS-2014)*, February 15-16, 2014.
7. A Comparison of Four Solar Planetary Systems from Models consideration and reported data of visible clouds, metals and hydrogen compounds by A. B. Bhattacharya, S. Mondal, and **B. Raha**, *National Conference on Emerging Technology and Applied Sciences (NCETAS-2014)*, February 15-16, 2014.
8. Interaction of Satellite Io with its Planet Jupiter: A Case of Unique Backfire by A. B. Bhattacharya and **B. Raha**, *International Conference on Nonlinear Dynamics and its Applications in Physical and Biological Sciences (CNDAPBS-14)*, pp. 34-35, November 01-03, 2014, Darjeeling Govt. College, Darjeeling.
9. Plasma Waves Associated with the Bow Shock of Planet Jupiterby B. Rahaand A. B. Bhattacharya, *International Conference on Nonlinear Dynamics and its Applications in Physical and Biological Sciences (CNDAPBS-14)*, pp. 65-66, November 01-03, 2014, Darjeeling Govt. College, Darjeeling.

***Annexure – III***

**Book Publication**

1. Particle Physics as Building Blocks of the Universe: Elementary particle physics in relation to its developments and connections with astrophysics and cosmology by A. B. Bhattacharya and **B. Raha**, *Lap Lambert Academic Publishing, Germany*, 2013.
2. Planet Jupiter and its Galilean Satellites: Internal processes of Jovian magnetosphere, detection of radio emissions and features of Jupiter's Satellites by A. B. Bhttacharya and **B. Raha**, *Lap Lambert Academic Publishing, Germany*, 2014, (**ISBN:** 978-3-659-61060-8).

**Contributions in Book Chapter**

1. Design Considerations of Solar Radio Telescopes and Construction of arrays by A. B. Bhattacharya, A. Nag, **B. Raha**, K. Roy and S. Mondal. Tata McGraw Hill Education Private Limited (**ISBN:- 978-1-25-906393-0**)., 231-234, 2013 [Also presented at *International Conference on Computation and Communication Advancement-2013 (IC3A-2013)*, JIS College of Engineering, January 11-12, 2013].
2. Mysteries Role of Elementary Particles as Fascinating Building Blocks of Matter by A. B. Bhattacharya and **B. Raha**, pp. 26-41, *Selected Paper on Nonlinear Dynamics and its Application*, Published by Book Center, Auroma Market, Santiniketan, West Bengal. **ISBN:** 978-81-9216 12-6-6, 2014.
3. On Some Dominant Features of Jovian Magnetosphere: A Survey by A. B. Bhattacharya and **B. Raha**, pp. 107-121, *Selected Paper on Nonlinear Dynamics and its Application*, Published by Book Center, Auroma Market, Santiniketan, West Bengal. **ISBN:** 978-81-9216 12-6-6, 2014.