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Dr. Sayan Adhikari (Ph.D.)

Curriculum Vitae

      	<p>Centre of Plasma Physics, Institute for Plasma Research, Nazirakhat, Sonapur, Guwahati, Assam 782402 +91 8133088958 / 7002671110 sayan.adhikari@cppipr.res.in / sayanadhikari207@gmail.com www.sayanadhikari.com/ www.linkedin.com/in/sayan-adhikari www.researchgate.net/profile/Sayan_Adhikari www.publons.com/researcher/1646376/sayan-adhikari/</p>	
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SUMMARY

- Experienced Research Professional with 6+ years of expertise, developing simulation codes for magnetized plasmas using Particle in Cell (PIC) and FLUID technique.
- Interested in modeling and simulation of plasma processes in experimental, and natural plasma systems along with development, and optimization of computer codes that can simulate such systems.
- Open to work on any challenging topic on plasma modeling and simulations, including code development, and analytical theory.
- Experienced in teaching and administrative tasks.

RESEARCH EXPERIENCE

- 2018 – Present Post-Doctoral Fellow
Centre of Plasma Physics, Institute for Plasma Research, Nazirakhat, Assam, India.
(Dept. of Atomic Energy, Govt. of India)
Dept.: Theory and Simulation Laboratory
Project: ROLE OF SHEATH IN COMMUNICATION BLACKOUT OF SPACE VEHICLE RE-ENTRY.
Responsibilities:
- Taught Computational Physics course to the doctoral students as a part of the Pre-PhD training.
 - Assisted faculty researchers and Ph.D. students in planning and designing research problems.
 - Presented project results to internal and external bodies.
 - Published academic manuscript in peer-reviewed journals.
 - Acted as a collaborator for Dusty Plasma Laboratory and Inertial Electrostatic Confinement Fusion (IECF) Laboratory.
- 2014 – 2017 Senior Research Fellow
Centre of Plasma Physics, Institute for Plasma Research, Nazirakhat, Assam, India.
(Dept. of Atomic Energy, Govt. of India)
Dept.: Theory and Simulation Laboratory
Project: FLUID AND KINETIC SIMULATION OF MAGNETIZED PLASMA EDGE REGION.
Advisor: Prof. K. S. Goswami.
Responsibilities:
- Completed a project on Numerical simulation of Plasma phenomena in sheath region.
 - Published academic manuscript in peer-reviewed journals.
- 2012 – 2014 Junior Research Fellow
Centre of Plasma Physics, Institute for Plasma Research, Nazirakhat, Assam, India.
(Dept. of Atomic Energy, Govt. of India)
Dept.: Theory and Simulation Laboratory
Project: DEVELOPMENT OF A PARTICLE IN CELL (PIC) SIMULATION MODEL FOR A PLASMA SYSTEM IN PRESENCE OF MAGNETIC FIELD TO STUDY PLASMA SURFACE INTERACTION.
Advisor: Prof. K. S. Goswami.
Responsibilities:
- Developed a Particle in Cell (PIC) simulation model for a plasma system to study magnetized plasma surface interaction.

EDUCATION

- 2012 – 2019 Doctor of Philosophy, Gauhati University, Guwahati, Assam.
Institution: Centre of Plasma Physics, Institute for Plasma Research, Nazirakhat, Sonapur, Assam.
Thesis Title: STUDY OF EDGE PHYSICS IN MAGNETIZED PLASMA | Advisor: Prof. K. S. Goswami.
- 2010 – 2012 Master of Science, Tezpur University, Tezpur, Assam.
First Class Honors
PHYSICAL SCIENCE | Major: High Energy Physics
CGPA: 8.71
- 2007 – 2010 Bachelor of Science, University of Calcutta, Kolkata, West Bengal
Institution: Ramakrishna Mission Residential College, Narendrapur, West Bengal.
Major: PHYSICAL SCIENCE
PERCENTAGE: 56.28
- 2005 – 2007 Higher Secondary Examination, West Bengal Council of Higher Secondary Education, Kolkata, West Bengal.
Institution: Arambagh High School, West Bengal.
Major: SCIENCE
PERCENTAGE: 78
- 2005 Secondary Examination, West Bengal Board of Secondary Education, Kolkata, West Bengal
Institution: Paschimpara High School, West Bengal.
PERCENTAGE: 89.89

PUBLICATIONS

1. Effect of two temperature electrons in a collisional magnetized plasma sheath, G. Sharma, S. Adhikari, R. Moulick, S. S. Kausik, and B. K. Saikia *Physica Scripta*, (2019) (communicated). arXiv: 1907.10280
2. Propagation of dust ion acoustic soliton in the presence of superthermal electrons, D. Dutta, S. Adhikari, R. Moulick, and K. S. Goswami, *Physica Scripta*, 94, 125210 (2019). DOI: 10.1088/1402-4896/ab3a5b
3. Sheath formation in collisional, low pressure and magnetized plasma, R. Moulick, S. Adhikari, and K. S. Goswami, *Physics of Plasmas*, 26, 043512 (2019). DOI: 10.1063/1.5090537
4. Correlation between two non-linear events in a dusty plasma system, R. Mishra, S. Adhikari, R. Mukherjee, and M. Dey, *Physics of Plasmas*, 25, 123703 (2018). DOI: 10.1063/1.5066427
5. Ion dynamics in a magnetized source-collector sheath, S. Adhikari, R. Moulick, and K. S. Goswami, *Physics of Plasmas*, 25, 094504 (2018). DOI: 10.1063/1.5045186
6. Estimation of the reduction of sputtering for fusion grade materials after disappearance of the Debye sheath, S. Adhikari, R. Moulick, and K. S. Goswami, *Indian Journal of Physics*, 92, 259 (2018). DOI: 10.1007/S12648-017-1088-X
7. Criterion of sheath formation in magnetized low pressure plasma, R. Moulick, S. Adhikari, and K. S. Goswami, *Physics of Plasmas*, 24, 114501 (2017). DOI: 10.1063/1.4994261
8. A dynamic analysis of the magnetized plasma sheath in a collisionless scenario with ion sources, S. Adhikari, R. Moulick, and K. S. Goswami, *Physics of Plasmas*, 24, 083501 (2017). DOI: 10.1063/1.4994535

TALKS DELIVERED

- CONFERENCES Oral Presentation at 6th PSSI-PLASMA SCHOLARS COLLOQUIUM (PSC-2018), Sikkim Manipal Institute of Technology, Majitar, Sikkim, India
24th to 26th August, 2018.
- Contributed Talk at Joint ICTP-IAEA College on Plasma Physics ([link](#)), Abdus Salam International Centre for Theoretical Physics (ICTP), Strada Costiera 11, 34151, Trieste, Italy.
29th October to 9th November, 2018.

PEER REVIEW SUMMARY

Performed 6 reviews for journals including Plasma Physics and Controlled Fusion and Physica Scripta; placing in the 71st percentile for verified review contributions on Publons up until October 2019.

- Plasma Physics and Controlled Fusion (2)
- Physica Scripta (2)
- Physics of Plasmas (1)
- Journal of Physics D: Applied Physics (1)

CONFERENCES/SCHOOLS ATTENDED

- CONFERENCE Poster Presentation at PLASMA - 2017,
Institute for Plasma Research, Bhat, Gandhinagar, Gujrat, India – 7th to 10th November, 2017.
- Poster Presentation at 10th Asia Plasma and Fusion Association (APFA) Conference,
Institute for Plasma Research, Bhat, Gandhinagar, Gujrat, India – 14th to 18th December, 2015.
- Poster Presentation at Plasma Scholars Colloquium (PSSI-PSC),
Jadavpur University, Kolkata, West Bengal, India – 6th to 7th August, 2015.
- Poster Presentation at National Symposium on Non-Linear and Complex Phenomena (NSNCP-2015),
IASST, Boragaon, Guwahati, Assam, India – 26th to 28th March, 2015.
- Poster Presentation at PLASMA - 2014,
Mahatma Gandhi University, Kottayam, Kerala, India – 8th to 11th December, 2014.
- Poster Presentation at PLASMA - 2013,
KIIT, Bhubaneswar, Odisha, India – 3rd to 6th December, 2013.
- SCHOOL Poster Presentation at SERB school on Tokamaks and Magnetized Plasma Fusion,
Institute for Plasma Research, Bhat, Gujrat, India – 25th Feb to 15th March, 2013.
- CONFERENCE Poster Presentation at ICCPPNDS-2012,
Institute for Plasma Research, Bhat, Gandhinagar, Gujrat, India – 6th to 9th November, 2012.

CONFERENCES/WORKSHOPS/EVENTS ORGANIZED

- CONFERENCE One day symposium on "Recent Trends in Basic Plasma Research",
CPP-IPR campus, Nazirakhat, Assam, India – 8th March, 2019.
<http://www.cppipr.res.in/conf/RTBPR-2019.html>
- EVENT National Science Day Celebration - 2019,
CPP-IPR campus, Nazirakhat, Assam, India – 28th February, 2019.
<http://www.cppipr.res.in/nsd/nsd-2019.html>
- CONFERENCE CPP-IPR Silver Jubilee Symposium,
Don Bosco institute, Kharguli, Guwahati, Assam, India.
21st to 22nd April, 2016.
- WORKSHOP Workshop on Linear Tokamak Divertor Simulators for PSI Studies (WLTDS-2014),
CPP-IPR campus, Nazirakhat, Assam, India.
24th to 26th November, 2014.

CERTIFICATIONS

FINITE ELEMENT METHOD	The Finite Element Method for Problems in Physics, University of Michigan, July – October, 2018.
PARTICLE IN CELL METHOD	Distributed Computing for Plasma Simulations, Particle In Cell Consulting, LLC, 8th June – 10th August, 2016. Advanced PIC Techniques, Particle In Cell Consulting, LLC, 3rd August – 21st September, 2015. Fundamentals of the Particle In Cell Method, Particle In Cell Consulting, LLC, 4th May – 22nd June, 2015.

COMPUTER SKILLS

Basic Knowledge	COMSOL, MATHEMATICA, Solid Works
Intermediate Knowledge	JAVA, LUA, FEMM, GNU PLOT, Tcl/Tk, OpenOffice, Microsoft Office, WordPress Microsoft Windows Computer Hardware & Networking
Advanced Knowledge	C/C++, MATLAB, OCTAVE, XOOPIC, HTML, L ^A T _E X, Linux, Shell Script

LANGUAGES

English, Bengali, Hindi, Assamese.

INTERESTS AND ACTIVITIES

Spreading Science Awareness, Popular Science Article Writing, Web Development, Cooking, Traveling, Photography.

REFERENCES

Prof. K. S. Goswami (Retd. Professor)
(Thesis Supervisor)
Theory and Simulation Laboratory
Centre of Plasma Physics
Institute for Plasma Research (CPP-IPR)
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Dr. S. R. Mohanty (Associate Professor-F)
(Collaborator)
Inertial Electrostatic Confinement Fusion (IECF) Laboratory
Centre of Plasma Physics
Institute for Plasma Research (CPP-IPR)
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Dr. S. S. Kausik (Scientific Officer - D)
(Collaborator)
Dusty Plasma and Negative Hydrogen Ion Extraction Laboratory (EDP and NHIEL)
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