

RESEARCH PUBLICATIONS: (in Scopus Indexed International Journals)

1. Influence of charged particles on sheath in discharge and diffusion region of a double plasma device **accepted for publication in Journal of the Korean Physical Society in May 2024**
M.K.Mishra and **A.Phukan**

2. Modelling and Optimization of “n-i-p” Structured CdS/MASnI₃/CdTe Solar Cell with SCAPS-1D for Higher Efficiency
C.K.Borah, S.Hazarika, L.N.Borah and **A.Phukan**
Journal of Electronic Materials, Springer 53 (2024) 1942-1955

3. Detection of mealybug infestation on the Khasi Mandarin orange plant using electronic nose
S.Hazarika, R Choudhry, L.N.Borah, **A.Phukan** and U.Sharma
Science, Engineering and Health Studies 17 (2023)
23040009-23040009

4. Effect of Movable Anode on Plasma Parameters in Multi-dipole Discharge
M.K. Mishra, **A.Phukan** and M. Chakraborty
Plasma Physics Reports. 48 (2022) 314–317

5. Axial variation of plasma parameters in a multi-dipole discharge plasma in the presence of an ion extraction grid
M.K. Mishra, **A.Phukan** and M. Chakraborty
Journal of the Korean Physical Society 79, (2021)
542–545

6. Control of Plasma Parameters by Hot Ionizing Electrons Using a Mesh Grid
M.K. Mishra, **A.Phukan** and M. Chakraborty
Brazilian Journal of Physics 51, (2021) 625–634

7. Plasma parameters controlled by a movable Ion sheath
A.Phukan, M.K. Mishra, and M. Chakraborty
Plasma Physics Reports. 44(8) 2018 775–781

8. Effect of electron emission on an ion sheath structure
M.K. Mishra, **A.Phukan** and M. Chakraborty
Phys.Scr. (Royal Swedish Academy of Science) 89 (2014)
095602

9. Effect of cold electron emission on diffusion plasma parameters and the sheath structure in the Double Plasma device
M.K. Mishra, **A.Phukan** and M. Chakraborty
J Exp. Theor. Phys. 146 (8) (2014) 368-372

10. Argon-Oxygen dc magnetron discharge plasma probed with ion acoustic waves
P.Saikia, **A.Phukan**, B.K.Saikia and K.S.Goswami
J. Vac. Sci. Technol A **32(3)** 2014 031303-1
11. Influence of Plasma Density on Associated electrical elements of an Ion sheath
M.K.Mishra, A.K.Mishra, **A.Phukan**, P.K.Devi, H.K.Sarma, T.Das
Prog. Theor. Exp. Phys.
(Physical Society of Japan)
033J01 (2014)
12. Negative Ion beam extraction in Robin
G.Bansal, A.Gehlaut, J.Soni, K.Pandya, M.Vappugala, A.Patel, A.K.Chakraborty, M.Bandopadhyay,
M.J.Singh, **A.Phukan**, H. Mistry, R. Jadav et al.
Fusion Eng. Design **88(6-8)** 2013 778
13. Effect of discharge plasma potential on diffusion plasma parameters controlled by a mesh grid
in a Double Plasma Device.
M.K. Mishra, **A.Phukan** and M. Chakraborty
Contrib. Plasma Phys. (WILEY-VCH, Germany)
53(3) 2013 206
14. Electron heating in a multi-component plasma by electrostatic plugging.
M.K.Mishra and **A.Phukan**
Journal of Plasma Physics
(Cambridge Univ. Press) **79(02)** 2013
15. Effect of discharge voltage on bi-maxwellian electron in the diffusion plasma region of a
double plasma device.
M.K. Mishra, **A.Phukan** and M. Chakraborty
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(Cambridge Univ. Press) **79(05)** 2013
16. Influence of discharge voltage on charged particles in a multi-dipole device in presence of an
ion collecting surface.
M.K. Mishra, **A.Phukan** and M. Chakraborty
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17. Some Characteristics of Double Plasma Device operated as Triode.
M.K.Mishra and **A.Phukan**
Canadian Journal of Physics. **90(4)** 2012 345
18. Plasma parameters controlled by remote electron shower in a Double Plasma Device.
M.K.Mishra and **A.Phukan**
Plasma Physics Reports. **38 (7)** 2012 590
19. Behavior of electrons under different biasing conditions in a Multi-dipole Plasma.
M.K.Mishra and **A.Phukan**
Plasma Physics Reports. **38 (8)** 2012 670
20. ITER-DNB Ion Source Movement mechanism
M.Bandopadhyay, I.Ahmed, G.Roopesh, C.Rotti, **A.Phukan**, D.Warner, A.K.Chakraborty
Fusion Eng. Design. **86**, 2011 864

21. Effect of additional cathode potential on diffused plasma parameters in presence of anode potential”
M.K.Mishra and **A.Phukan**
Rom. Journ. Phys. **58** (1-2) **2012** 159
22. Effect of Electron Emission and Potential Perturbations of a hot filament in High Voltage Pulsed Glow Discharge.”
A.Phukan, S. Mukherjee, R. S. Rane, M.Ranjan and N. Vaghela
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23. Mechanical Variations of Diffused Plasma Parameters in a Double Plasma Device”.
A.Phukan M.K. Mishra and M. Chakraborty
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24. Role of High Energetic Electrons in controlling Diffused plasma parameters in a Double Plasma Device.
A.Phukan, M..K..Mishra, M.Chakraborty and K.S.Goswami.
Phys. Lett. A **365** (2007) 135
25. Pulsed Plasma production for applications in Plasma Immersion Ion Implantation and its implications”
S. Mukherjee, M. Ranjan, , R. Rane, **A. Phukan** N. Vaghela, and K.S. Suraj,
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26. Plasma Nitriding of Austenitic Stainless Steel in N₂ and N₂ – H₂ dc pulsed discharge”.
M.K. Sharma, B.K. Saikia, **A.Phukan**. B. Ganguli
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27. Variation of Plasma Parameters, Sheath thickness due to the extraction of ion and electron flux in a Double Plasma Device”.
M.K.Mishra, **A.Phukan** and M.Chakraborty
Contrib. Plasma Phys.(WILEY-VCH, Germany) **47** (2007) 703
28. Effect of cathode and anode voltage on ion sheath thickness in a magnetically confined diffusion plasma.
M.K.Mishra, **A.Phukan**
Contrib. Plasma Phys.(WILEY-VCH, Germany) **47** (2007) 677
29. Growth of Electron Energies with Ion Beam Injection in a Double Plasma Device”.
M.K. Mishra, **A. Phukan**, M. Chakraborty and K. S. Goswami
Eur. Phys. J: D **46** (2008) 303
30. Plasma Parameter Variations in ion beam mode of a DP-device”.
M.K. Mishra, **A. Phukan** & M.Chakraborty
Japan. J. Appl. Phys. (Japan) **45** (2006) 9216
31. Effect of Discharge Voltage on an ion sheath Formed at a Grid in a Multi-Dipole Discharge Plasma’. M.K.Mishra, **A.Phukan** **Chin. Phys. Lett.**(Institute of Phys.UK.) **25** (2008) 1011

32. Variation of plasma parameters in a modified mode of plasma production of a double plasma device. **A.Phukan**, M.K.Mishra, B.K.Saikia and M.Chakraborty **Pramana-Journal of Physics**74(2010) 399

33. Effect of confining wall potential on Langmuir probe measurements M.K. Mishra, **A.Phukan**, M. Chakraborty, K.S.Goswami, **Indian Journal of Physics. B 80 (2006)**

Papers presented/published in **International conferences: 5**

Sr. No	Title of the paper	Authors	Name of the conference	Date/Year and venue
1.	“Proposal of actively heated, long stem based Cs delivery system for diagnostic neutral beam source in ITER” (published in AIP conf. proceeding : Feb2013, Vol. 1515 Issue 1, p207)	Bansal, G.; Mishra, S.; Pandya, K.; Bandyopadhyay, M.; Soni, J.; Gahlaut, A.; Parmar, K. G.; Shah, S.; Phukan, A. ; Roopesh, G.; Ahmed, I.; Chakraborty, A. K.; Singh, M. J.; Schunke, B.; Hemsworth, R.; Svensson, L.; Chareyre, J.; Graceffa, J	3 rd International symposium on Negative Ions, Beams and Sources (NIBS 2012)	3–7 September 2012, Jyväskylä, Finland.
2.	“Development of Cu-Cr-Zr alloy for applications in neutral beams.” (published in conf. proceeding)	C.Rotti, Nirmal Panda, A.K.Chakraborty, K.Balasubramanian, Irfan Ahmed, G.Roopesh, M.Bandyopadhyay, M.J.Singh, A.Phukan , Sejal Shah, R.K.Yadav.	IEEE/NPSS Symposium on Fusion Engineering (SOFE 2011)	June26-30, 2011. Chicago, IL; USA.
3.	“ Two RF driver based Negative Ion Source for Fusion R & D.” (published in conf. proceeding)	M.Bandopadhyay, M.J.Singh,G.Bansal A.Gahlaut, A.Phukan et.al	IEEE/NPSS Symposium on Fusion Engineering (SOFE 2011)	June26-30, 2011. Chicago, IL; USA.
4.	“Effect Of Magnetic Field On the Discharge Mode of Cylindrical Electrode Configuration” (as poster presentation)	R. Rane, A.Phukan V.Acharya, G.Ravi and S. Mukherjee	(KAW-Fest) International Symposium On waves, Coherent Structures & Turbulence in Plasmas.	January 12-15, 2010.Institute for Plasma Research (Gandhinagar, Gujarat)
5.	Plasma Nitriding of austenitic stainless steel in N ₂ and N ₂ -H ₂ dc pulsed discharge. (Published as paper)	M.K. Sharma, B.K. Saikia, A.Phukan . T.K Borthakur and B. Ganguli	International workshop on Advances in Surface Treatment: Research and Applications (ASTRA)	November 3-6, 2003. Hyderabad, India.

Papers presented in **national conferences**: 8

Sr. No	Title of the paper	Authors	Name of the conference	Date/Year and venue
1.	A comparison of Plasma Parameters control by Mechanical and Electrical means	A.Phukan ,M.K.Mishra	67 th Technical Session of Assam Science Society cum National Seminar on 'Current Developments in Science and Technology'	6 th April,2023, Bhattadev University, Pathsala,Assam.
2.	Measurement of Plasma Potential by an Emissive Probe in an inductively coupled 13.56 MHz RF Plasma	A.Phukan ,M.K.Mishra	UGC sponsored National seminar on Plasma Science and Technology	November 6-7,2013 Nabojoyoti College, Barpeta, Assam
3.	A R.F compensated Langmuir Probe for Inductively Coupled RF Plasma.	A.Phukan ,K.Barada, P.Chattopadhyay, M.Bandopadhyay.	26 th National Symposium on Plasma Science & Technology (PLASMA-2011).	December 20-23, 2011, BIT. Patna, Bihar.
4.	Plasma diagnostics for a Negative Hydrogen Ion Source.	M.Bandyopadhyay, A.Phukan ,S.Pandhija, R.K. Yadav, J.Soni, G.Bansal, M.J.Singh,A.Gahlaut, K.Pandya A.K. Chakraborty,	24 th National Symposium on Plasma Science & Technology (PLASMA-2009).	December 8-11. 2009;NIT,Hamirpur Himachal Pradesh.
5.	Effect of Electron emission and potential perturbations of a hot filament in a High Voltage Pulsed Glow Discharge.	A.Phukan . S.Mukherjee, R. S. Rane, M.Ranjan and N. Vaghela	22 th National Symposium on Plasma Science & Technology (PLASMA-2007).	December 7-11. 2007; Institute for Plasma Research. Gandhinagar. India.
6.	Growth of electron energies with ion beam injection in a Double Plasma Device	M.K. Mishra, A. Phukan , M. Chakraborty and K. S. Gowsami	22 th National Symposium on Plasma Science & Technology (PLASMA-2007).	December 7-11 2007; Institute for Plasma Research. Gandhinagar. India.

7.	Diagnostics of pulsed produced plasma using Langmuir probe and Emissive probe.	M.Ranjan, A.Phukan , R.Rane and S. Mukherjee	20 th National Symposium on Plasma Science & Technology (PLASMA-2005).	December 5-8, 2005. Cochin University of Science and Technology; Cochin. Kerela.
8.	Effect of anode potential on Langmuir probe measurements.	M.K.Mishra, A.Phukan , M. Chakraborty, K.S.Goswami	20 th National Symposium on Plasma Science & Technology (PLASMA-2005).	December 5-8,2005. Cochin University of Science and Technology; Cochin. Kerela.