

# Mainak Bandyopadhyay

## List of Publications by Year in descending order

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81  
papers

1,091  
citations

623734

14  
h-index

434195

31  
g-index

82  
all docs

82  
docs citations

82  
times ranked

512  
citing authors

| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 1  | Overview of the RF source development programme at IPP Garching. Nuclear Fusion, 2006, 46, S220-S238.   | 3.5 | 356       |
| 2  | Progress in the realization of the PRIMA neutral beam test facility. Nuclear Fusion, 2015, 55, 083025.  | 3.5 | 98        |
| 3  | Diagnostic Neutral Beam for ITERâ€™Concept to Engineering. IEEE Transactions on Plasma Science, 2010, 38, 248-253.  | 1.3 | 60        |
| 4  | An Indian test facility to characterise diagnostic neutral beam for ITER. Fusion Engineering and Design, 2011, 86, 732-735.   | 1.9 | 31        |
| 5  | Negative ion beam extraction in ROBIN. Fusion Engineering and Design, 2013, 88, 778-782.  | 1.9 | 27        |
| 6  | Beamline Optimization for 100-keV Diagnostic Neutral Beam Injector for ITER. IEEE Transactions on Plasma Science, 2010, 38, 242-247.  | 1.3 | 24        |
| 7  | RF-Plasma Source Commissioning in Indian Negative Ion Facility. AIP Conference Proceedings, 2011, , .   | 0.4 | 19        |
| 8  | Droplet shaped anode double layer and electron sheath formation in magnetically constricted anode. Physics of Plasmas, 2016, 23, .  | 1.9 | 19        |
| 9  | Design of a helicon plasma source for ionâ€™ion plasma production. Fusion Engineering and Design, 2017, 117, 30-38.   | 1.9 | 18        |
| 10 | Development and characterization of a helicon plasma source. Review of Scientific Instruments, 2018, 89, 083508.  | 1.3 | 17        |
| 11 | Characterization of hydrogen plasma in a permanent ring magnet based helicon plasma source for negative ion source research. Plasma Physics and Controlled Fusion, 2019, 61, 065003.        | 2.1 | 16        |
| 12 | Two RF Driver-Based Negative Ion Source Experiment. IEEE Transactions on Plasma Science, 2014, 42, 624-627.   | 1.3 | 15        |
| 13 | Conceptual design of a permanent ring magnet based helicon plasma source module intended to be used in a large size fusion grade ion source. Fusion Engineering and Design, 2016, 103, 1-7. | 1.9 | 15        |
| 14 | Cesium Delivery System for Negative Ion Source at IPR. AIP Conference Proceedings, 2011, , .  | 0.4 | 14        |
| 15 | Performance evaluation of a permanent ring magnet based helicon plasma source for negative ion source research. Review of Scientific Instruments, 2017, 88, 103509.                         | 1.3 | 14        |
| 16 | Development of a novel surface assisted volume negative hydrogen ion source. Scientific Reports, 2017, 7, 11078.  | 3.3 | 14        |
| 17 | Effect of energetic electrons on dust charging in hot cathode filament discharge. Physics of Plasmas, 2011, 18, .   | 1.9 | 13        |
| 18 | Simulation of negative hydrogen ion production and transport. Review of Scientific Instruments, 2004, 75, 1720-1722.  | 1.3 | 12        |

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|----|--|-----|-----------|
| 19 | Plasma density estimation of a fusion grade ICP source through electrical parameters of the RF generator circuit. Nuclear Fusion, 2015, 55, 033017.  | 3.5 | 12        |
| 20 | System upgradation for surface mode negative ion beam extraction experiments in ROBIN. Fusion Engineering and Design, 2017, 114, 187-191.  | 1.9 | 12        |
| 21 | Artificial neural network based predictive negative hydrogen ion helicon plasma source for fusion grade large sized ion source. Engineering With Computers, 2022, 38, 347-364.                     | 6.1 | 12        |
| 22 | Multiple delivery cesium oven system for negative ion sources. Review of Scientific Instruments, 2012, 83, 02B118.   | 1.3 | 11        |
| 23 | Two-RF-Driver-Based Negative Ion Source for Fusion R&D. IEEE Transactions on Plasma Science, 2012, 40, 2767-2772.  | 1.3 | 11        |
| 24 | Improvement of charged particles transport across a transverse magnetic filter field by electrostatic trapping of magnetized electrons. Physics of Plasmas, 2014, 21, 072118.                      | 1.9 | 11        |
| 25 | Design of Data Acquisition and Control System for Indian Test Facility of Diagnostics Neutral Beam. Fusion Engineering and Design, 2015, 96-97, 961-965.   | 1.9 | 11        |
| 26 | Plasma characterization of a microwave discharge ion source with mirror magnetic field configuration. Review of Scientific Instruments, 2018, 89, 125112.  | 1.3 | 11        |
| 27 | Effect of magnetic field on dust charging and corresponding probe measurement. Physics of Plasmas, 2015, 22, .   | 1.9 | 11        |
| 28 | Design optimization of the 100kV HV bushing for ITER-DNB. Fusion Engineering and Design, 2011, 86, 892-895.  | 1.9 | 10        |
| 29 | Effect of argon addition on plasma parameters and dust charging in hydrogen plasma. Journal of Applied Physics, 2014, 116, .   | 2.5 | 10        |
| 30 | Study on plasma parameters and dust charging in an electrostatically plugged multicusp plasma device. Physics of Plasmas, 2011, 18, 063704.  | 1.9 | 9         |
| 31 | Studies on hydrogen plasma and dust charging in low-pressure filament discharge. Physics of Plasmas, 2014, 21, 083704.   | 1.9 | 9         |
| 32 | Overview of ion source characterization diagnostics in INTF. Review of Scientific Instruments, 2016, 87, 02B906.   | 1.3 | 9         |
| 33 | Evaluation of beam divergence of a negative hydrogen ion beam using Doppler shift spectroscopy diagnostics. Journal of Applied Physics, 2018, 123, 043307.   | 2.5 | 9         |
| 34 | Development of Data Acquisition and Control System for Long Pulse Operations of Indian Test Facility of ITER DNB. IEEE Transactions on Nuclear Science, 2017, 64, 1426-1430.                       | 2.0 | 8         |
| 35 | Quantification of atomic hydrogen anion density in a permanent magnet based helicon ion source (HELEN) by using pulsed ring down spectroscopy. Review of Scientific Instruments, 2019, 90, 083103. | 1.3 | 8         |
| 36 | Performance evaluation of various diagnostics developed for a negative ion based neutral beam injector program in IPR. Nuclear Fusion, 2019, 59, 085001.   | 3.5 | 7         |

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|----|--|-----|-----------|
| 37 | Computational characterization of plasma transport across magnetic filter in ROBIN using PIC-MCC simulation. <i>Fusion Engineering and Design</i> , 2020, 151, 111402.   | 1.9 | 7         |
| 38 | 100-kV feedthrough for the Indian Test Facility (INTF) – design and analysis. <i>Journal of the Korean Physical Society</i> , 2014, 65, 1294-1298.   | 0.7 | 6         |
| 39 | A technique to control cross-field diffusion of plasma across a transverse magnetic field. <i>Physics of Plasmas</i> , 2016, 23, 122105.   | 1.9 | 6         |
| 40 | Influence of magnetic filter and magnetic cage in negative ion production in helicon oxygen plasma. <i>Physics of Plasmas</i> , 2018, 25, 123503.  | 1.9 | 6         |
| 41 | Characterization of <i>in situ</i> work function and cesium flux measurement setup suitable for cesium seeded negative ion source applications. <i>Nuclear Fusion</i> , 2019, 59, 106023.                              | 3.5 | 6         |
| 42 | Spatio-temporal evolution of electric field inside a microwave discharge plasma during initial phase of ignition and its effect on power coupling. <i>Physics of Plasmas</i> , 2019, 26, .                             | 1.9 | 6         |
| 43 | Indian Test Facility (INTF) and its updates. <i>Journal of Physics: Conference Series</i> , 2017, 823, 012001.   | 0.4 | 5         |
| 44 | Effect of dust particle and magnetic field on EEPF and plasma oscillation. <i>Journal of Plasma Physics</i> , 2019, 85, .  | 2.1 | 5         |
| 45 | R&D status of the Indian test facility for ITER diagnostic neutral beam characterization. <i>Nuclear Fusion</i> , 2019, 59, 096034.  | 3.5 | 5         |
| 46 | Effect of argon and oxygen gas concentration on mode transition and negative ion production in helicon discharge. <i>Journal of Applied Physics</i> , 2020, 128, 183303.   | 2.5 | 5         |
| 47 | Prediction of Axial Variation of Plasma Potential in Helicon Plasma Source Using Linear Regression Techniques. <i>International Journal of Mathematical, Engineering and Management Sciences</i> , 2020, 5, 1284-1299. | 0.7 | 5         |
| 48 | Conceptual Design, Implementation and Commissioning of Data Acquisition and Control System for Negative Ion Source at IPR. , 2011, , .   |     | 4         |
| 49 | Observation of mode transition and low-frequency oscillations in magnetically constricted anode. <i>Physics of Plasmas</i> , 2016, 23, 123524.   | 1.9 | 4         |
| 50 | Manufacturing technology development for an –angled™ accelerator grid segment for DNB Beam Source. <i>Fusion Engineering and Design</i> , 2017, 123, 366-370.  | 1.9 | 4         |
| 51 | Discharge properties of helicon oxygen plasma in the source and expansion chambers. <i>Plasma Research Express</i> , 2020, 2, 015005.  | 0.9 | 4         |
| 52 | Prediction of negative hydrogen ion density in permanent magnet-based helicon ion source (HELEN) using deep learning techniques. <i>AIP Conference Proceedings</i> , 2021, , .   | 0.4 | 4         |
| 53 | Overview of diagnostics on a small-scale RF source for fusion (ROBIN) and the one planned for the diagnostic beam for ITER. <i>Review of Scientific Instruments</i> , 2022, 93, 023504.                                | 1.3 | 4         |
| 54 | Development of CuCrZr alloy for applications in Neutral Beams. , 2011, , .   |     | 3         |

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|----|---|-----|-----------|
| 55 | Indian Test Facility (INTF) - a status update. , 2015, , .  |     | 3         |
| 56 | Time resolved analysis algorithm for ramped Langmuir probe to study temporal evolution of plasma parameters in ROBIN. Fusion Engineering and Design, 2018, 130, 122-130.                                    | 1.9 | 3         |
| 57 | Role of angular orientation of dipoles on work function during cesium deposition on a metal surface – A phenomenological model. AIP Conference Proceedings, 2018, , .                                       | 0.4 | 3         |
| 58 | Negative hydrogen ion density measurement in a permanent magnet based helicon ion source (HELENâ€”I) using cavity ring-down spectroscopic technique. AIP Conference Proceedings, 2018, , .                  | 0.4 | 3         |
| 59 | Study on production and extraction of negative impurity ions in a caesiated negative ion source. Nuclear Fusion, 2020, 60, 046008.  | 3.5 | 3         |
| 60 | The feasibility of resonance induced instabilities in the magnetic filter region of low temperature plasma based negative ion sources. AIP Conference Proceedings, 2021, , .                                | 0.4 | 3         |
| 61 | Plasma Density Prediction for Helicon Negative Hydrogen Plasma Source Using Decision Tree and Random Forest Algorithm. Advances in Intelligent Systems and Computing, 2021, , 357-368.                      | 0.6 | 3         |
| 62 | Spectral modelling of neutral beam for Doppler shift spectroscopy diagnostics of INTF. AIP Conference Proceedings, 2018, , .  | 0.4 | 2         |
| 63 | Evaluation of Heat Transfer Performance of Hypervapotron Elements in Two Phase Flow Devised in Indian test facility. Fusion Engineering and Design, 2020, 155, 111543.                                      | 1.9 | 2         |
| 64 | Monte Carlo simulation, analytical and experimental studies on the nozzle structure of a Cs vapour delivery system for negative ion sources. Fusion Engineering and Design, 2020, 159, 111802.              | 1.9 | 2         |
| 65 | Influence of high energy electrons on negative ion density in a hot cathode discharge. Physics of Plasmas, 2022, 29, 033501.  | 1.9 | 2         |
| 66 | GIS based processing of GPS trajectories for Link Speed Determination: Applied to Link Speed profiling of Fire Emergency Vehicles. , 2014, , .  |     | 1         |
| 67 | Formalization of Entities for Agent Based Simulation Using Situation Calculus: A Specific Case Study of Fire Emergency Response. , 2014, , .  |     | 1         |
| 68 | Response to –Comment on –Droplet shaped anode double layer and electron sheath formation in magnetically constricted anode–[Phys. Plasmas <b>23</b>, 024701 (2016)]. Physics of Plasmas, 2016, 23, .        | 1.9 | 1         |
| 69 | Indigenous Manufacturing Realization of TWIN Source and Its Auxiliary. IEEE Transactions on Plasma Science, 2017, 45, 2375-2380.  | 1.3 | 1         |
| 70 | A model for real time, in situ estimation of cesium coverage on metal substrate using infrared imaging under vacuum. Review of Scientific Instruments, 2019, 90, 123505.                                    | 1.3 | 1         |
| 71 | Evolution of Microwave Electric Field on Power Coupling to Plasma during Ignition Phase. , 0, , .   |     | 1         |
| 72 | Analyzing and Modeling Spatial Factors for Pre-decided Route Selection Behavior: A Case Study of Fire Emergency Vehicles of Allahabad City. Advances in Intelligent Systems and Computing, 2016, , 667-676. | 0.6 | 1         |

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|----|--|-----|-----------|
| 73 | Global model study of plasma parameter variation in helicon plasma source in oxygen discharge. <i>Physics of Plasmas</i> , 2022, 29, 023502.   | 1.9 | 1         |
| 74 | Formalization and Development of Logic Based Emergency Response Systems Using Situation Calculus. , 2013, , .  |     | 0         |
| 75 | Technologies for the realization of large size RF sources for negative neutral beam systems for ITER. Challenges, experience and the path ahead. <i>Nuclear Fusion</i> , 2019, 59, 096007. | 3.5 | 0         |
| 76 | Design of tomographic diagnostic system for Indian Test Facility (INTF) neutral beam injector. <i>Fusion Engineering and Design</i> , 2019, 148, 111255.                                   | 1.9 | 0         |
| 77 | Probe for in situ measurement of work function in correlation with cesium dynamics suitable for ion source applications. <i>AIP Conference Proceedings</i> , 2021, , .                     | 0.4 | 0         |
| 78 | Correction algorithm for cavity ring-down based anion density measurement in a negative ion source having continuously fed cesium vapor. <i>AIP Conference Proceedings</i> , 2021, , .     | 0.4 | 0         |
| 79 | Input Parameter Optimization with Simulated Annealing Algorithm for Predictive HELEN-I Ion Source. <i>Advances in Intelligent Systems and Computing</i> , 2021, , 281-292.                 | 0.6 | 0         |
| 80 | Investigation of Mode Transition and Negative Ion Production in Helicon Plasma Source in Hydrogen Discharge. <i>Plasma Physics Reports</i> , 2022, 48, 37-47.                              | 0.9 | 0         |
| 81 | Characterization of Hydrogen Plasma in an ECR based Large Volume Plasma Chamber. <i>Journal of Physics: Conference Series</i> , 2022, 2244, 012055.  | 0.4 | 0         |