

Amnon Fruchtman

List of Publications by Year in descending order

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72
papers

1,459
citations

304743

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345221

36
g-index

72
all docs

72
docs citations

72
times ranked

621
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 1 | Physics of E \times B discharges relevant to plasma propulsion and similar technologies. Physics of Plasmas, 2020, 27, . | 1.9 | 89 |
| 2 | Neutral Depletion in a Collisionless Plasma. IEEE Transactions on Plasma Science, 2008, 36, 403-413. | 1.3 | 81 |
| 3 | Penetration and expulsion of magnetic fields in plasmas due to the Hall field. Physics of Fluids B, 1991, 3, 1908-1912. | 1.7 | 80 |
| 4 | Enhanced Plasma Transport Due To Neutral Depletion. Physical Review Letters, 2005, 95, 115002. | 7.8 | 78 |
| 5 | A magnetic nozzle calculation of the force on a plasma. Physics of Plasmas, 2012, 19, . | 1.9 | 76 |
| 6 | Ion Separation due to Magnetic Field Penetration into a Multispecies Plasma. Physical Review Letters, 2001, 87, 115004. | 7.8 | 73 |
| 7 | Control of the electric-field profile in the Hall thruster. Physics of Plasmas, 2001, 8, 1048-1056. | 1.9 | 63 |
| 8 | Two-dimensional equilibrium of a low temperature magnetized plasma. Plasma Sources Science and Technology, 2005, 14, 152-167. | 3.1 | 61 |
| 9 | Ambipolar and nonambipolar cross-field diffusions. Plasma Sources Science and Technology, 2009, 18, 025033. | 3.1 | 46 |
| 10 | Two-dimensional fast penetration of a magnetic field into a homogeneous plasma. Physical Review Letters, 1992, 69, 2070-2073. | 7.8 | 42 |
| 11 | Neutral gas depletion in low temperature plasma. Journal Physics D: Applied Physics, 2017, 50, 473002. | 2.8 | 39 |
| 12 | Observation of faster-than-diffusion magnetic field penetration into a plasma. Physics of Plasmas, 2003, 10, 112-125. | 1.9 | 37 |
| 13 | Potential of an emissive cylindrical probe in plasma. Physical Review E, 2011, 84, 025402. | 2.1 | 35 |
| 14 | Fast magnetic field penetration into plasmas due to the Hall field. Physics of Fluids B, 1991, 3, 1546-1551. | 1.7 | 33 |
| 15 | Ion acceleration in supersonically rotating magnetized-electron plasma. Plasma Physics and Controlled Fusion, 2011, 53, 124038. | 2.1 | 33 |
| 16 | Magnetic field penetration due to the Hall field in (almost) collisionless plasmas*. Physics of Fluids B, 1993, 5, 2371-2377. | 1.7 | 31 |
| 17 | Spectroscopic investigation of fast (ns) magnetic field penetration in a plasma. Physics of Plasmas, 1995, 2, 2583-2589. | 1.9 | 30 |
| 18 | Effects of a Preembedded Axial Magnetic Field on the Current Distribution in a Z -Pinch Implosion. Physical Review Letters, 2019, 122, 045001. | 7.8 | 29 |

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|----|---|-----|-----------|
| 19 | Spectroscopic investigations of the plasma behavior in a plasma opening switch experiment. <i>Physics of Plasmas</i> , 1995, 2, 2122-2137. | 1.9 | 27 |
| 20 | Magnetic field penetration and electron heating in weakly nonuniform plasmas. <i>Physics of Fluids B</i> , 1992, 4, 117-123. | 1.7 | 24 |
| 21 | Modification of short scale length tearing modes by the Hall field. <i>Physics of Fluids B</i> , 1993, 5, 1408-1412. | 1.7 | 23 |
| 22 | Fast magnetic field penetration into a cylindrical plasma of a nonuniform density. <i>Physics of Fluids B</i> , 1993, 5, 2841-2852. | 1.7 | 23 |
| 23 | Particle-in-cell simulations of fast magnetic field penetration into plasmas due to the Hall electric field. <i>Physics of Plasmas</i> , 1996, 3, 3556-3563. | 1.9 | 23 |
| 24 | Limits on the efficiency of several electric thruster configurations. <i>Physics of Plasmas</i> , 2003, 10, 2100-2107. | 1.9 | 23 |
| 25 | Energizing and depletion of neutrals by a collisional plasma. <i>Plasma Sources Science and Technology</i> , 2008, 17, 024016. | 3.1 | 22 |
| 26 | Experimental study of a radial plasma source. <i>Physics of Plasmas</i> , 2009, 16, 043507. | 1.9 | 21 |
| 27 | Plasma dynamics in pulsed strong magnetic fields. <i>Physics of Plasmas</i> , 2004, 11, 2411-2418. | 1.9 | 20 |
| 28 | Enhancement of electric force by ion-neutral collisions. <i>Applied Physics Letters</i> , 2009, 95, . | 3.3 | 20 |
| 29 | Power dissipated during rapid magnetization or demagnetization of plasmas. <i>Physical Review A</i> , 1992, 45, 3938-3942. | 2.5 | 18 |
| 30 | Local measurements of the spatial magnetic field distribution in a z-pinch plasma during and near stagnation using polarization spectroscopy. <i>Physics of Plasmas</i> , 2020, 27, . | 1.9 | 18 |
| 31 | Different class of two-dimensional shocks in magnetized plasmas. <i>Physical Review E</i> , 1994, 50, 2997-3005. | 2.1 | 17 |
| 32 | Variational principle for optimal accelerated neutralized flow. <i>Physics of Plasmas</i> , 2001, 8, 56-58. | 1.9 | 17 |
| 33 | Investigation of the ion dynamics in a multispecies plasma under pulsed magnetic fields. <i>Physics of Plasmas</i> , 2004, 11, 4515-4526. | 1.9 | 17 |
| 34 | Suppression of diamagnetism by neutrals pressure in partially ionized, high-beta plasma. <i>Physics of Plasmas</i> , 2016, 23, . | 1.9 | 15 |
| 35 | The energy balance in the plasma of a coaxial plasma opening switch. <i>Physics of Plasmas</i> , 1998, 5, 1133-1141. | 1.9 | 14 |
| 36 | Breakdown of the Brillouin limit and classical fluxes in rotating collisional plasmas. <i>Physics of Plasmas</i> , 2015, 22, . | 1.9 | 13 |

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|----|--|-----|-----------|
| 37 | Diamagnetism and neutrals depletion in a plasma. <i>Physics of Plasmas</i> , 2017, 24, 103523. | 1.9 | 12 |
| 38 | The snowplow in plasmas of nonuniform density. <i>Physics of Fluids B</i> , 1992, 4, 855-858. | 1.7 | 10 |
| 39 | Magnetic field propagation in a two ion species planar plasma opening switch. <i>Physics of Plasmas</i> , 2007, 14, 053504. | 1.9 | 10 |
| 40 | Self-Generated Plasma Rotation in a Z-Pinch Implosion with Preembedded Axial Magnetic Field. <i>Physical Review Letters</i> , 2022, 128, 015001. | 7.8 | 10 |
| 41 | Visible-light spectroscopy of pulsed-power plasmas (invited). <i>Review of Scientific Instruments</i> , 1992, 63, 5127-5131. | 1.3 | 9 |
| 42 | Enhanced momentum delivery by electric force to ions due to collisions of ions with neutrals. <i>Physics of Plasmas</i> , 2013, 20, . | 1.9 | 8 |
| 43 | Sheath propagation along the cathode of a plasma opening switch. <i>IEEE Transactions on Plasma Science</i> , 1999, 27, 1464-1468. | 1.3 | 7 |
| 44 | A vacuum sheath propagation along a cathode. <i>Physics of Plasmas</i> , 1996, 3, 3111-3115. | 1.9 | 6 |
| 45 | Relativistic effects in energy extraction from alpha particles. <i>Physics of Plasmas</i> , 1997, 4, 138-145. | 1.9 | 6 |
| 46 | Tendency of a rotating electron plasma to approach the Brillouin limit. <i>Physics of Plasmas</i> , 2013, 20, . | 1.9 | 6 |
| 47 | The lower-hybrid drift instability in a slab geometry. <i>Physics of Fluids B</i> , 1989, 1, 422-429. | 1.7 | 5 |
| 48 | Deviations from the frozen-in law in the presence of small (but nonzero) resistivity. <i>Physics of Fluids B</i> , 1992, 4, 3446-3447. | 1.7 | 5 |
| 49 | Fast decay of plasma return currents due to whistler waves. <i>Physics of Plasmas</i> , 1994, 1, 2480-2487. | 1.9 | 5 |
| 50 | Enhanced Thrust Due to Ion-Neutral Collisions for Electric Propulsion. <i>Plasma Chemistry and Plasma Processing</i> , 2014, 34, 647-660. | 2.4 | 5 |
| 51 | The structure of a magnetic-field front propagating non-diffusively in low-resistivity multi-species plasma. <i>Physics of Plasmas</i> , 2016, 23, . | 1.9 | 5 |
| 52 | Electron density evolution during a fast, non-diffusive propagation of a magnetic field in a multi-ion-species plasma. <i>Physics of Plasmas</i> , 2016, 23, . | 1.9 | 5 |
| 53 | Current channel evolution in ideal Z pinch for general velocity profiles. <i>Physics of Plasmas</i> , 2019, 26, . | 1.9 | 5 |
| 54 | The wiggler-free electron laser: A single-particle model. <i>Physics of Fluids B</i> , 1992, 4, 4101-4110. | 1.7 | 4 |

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|----|---|-----|-----------|
| 55 | A model for energetic ion generation in an anode plasma. <i>Physics of Fluids B</i> , 1993, 5, 3399-3407. | 1.7 | 3 |
| 56 | The time-dependent electron density and magnetic field distributions in a 70-ns plasma opening switch. , 0, , . | | 3 |
| 57 | Neutral-gas depletion and repletion in plasmas. <i>Physics of Plasmas</i> , 2010, 17, 043502. | 1.9 | 3 |
| 58 | Active feedback stabilization of the flute instability in a mirror machine using field-aligned coils. <i>Nuclear Fusion</i> , 2012, 52, 123008. | 3.5 | 3 |
| 59 | Cumulative displacement induced by a magnetosonic soliton bouncing in a bounded plasma slab. <i>Physics of Plasmas</i> , 2018, 25, 062118. | 1.9 | 3 |
| 60 | The effect of displacement current on whistler propagation of a fast-rising magnetic field. <i>Physics of Fluids B</i> , 1992, 4, 375-380. | 1.7 | 2 |
| 61 | Evolution of a magnetic field and plasma pushing in the presence of a parallel magnetic field. <i>Physics of Fluids B</i> , 1992, 4, 363-367. | 1.7 | 2 |
| 62 | On the conduction of a current in a plasma-filled diode. <i>Physics of Plasmas</i> , 1995, 2, 1296-1304. | 1.9 | 2 |
| 63 | Fast magnetic field penetration into low resistivity plasma. <i>Journal of Plasma Physics</i> , 2017, 83, . | 2.1 | 2 |
| 64 | Electric force on plasma ions and the momentum of the ion-neutrals flow. <i>Journal of Applied Physics</i> , 2018, 123, 173302. | 2.5 | 1 |
| 65 | Study of a Current Loss at A Z-Pinch Stagnation Due to Fast Current Redistribution. , 2022, , . | | 1 |
| 66 | Development Of A Tandem Electrostatic Accelerator Quasi-CW FEL. , 0, , . | | 0 |
| 67 | Simulations Of Fast Magnetic Field Penetration Into A Plasma. , 0, , . | | 0 |
| 68 | PIC simulations of EMH and MHD effects in the plasma opening switch. , 1995, , . | | 0 |
| 69 | Observations of magnetic and electric fields in a nanosecond plasma opening switch experiment. , 1995, , . | | 0 |
| 70 | 2D magnetic field evolution and electron energies in plasma opening switches. , 0, , . | | 0 |
| 71 | Spectroscopic investigations of the magnetic field and electron density evolution in a microsecond POS [pulsed power switches]. , 0, , . | | 0 |
| 72 | Observation of Self-Generated Plasma Rotation and its Effects in A Z-Pinch With Preembedded Axial Magnetic Field. , 2022, , . | | 0 |