

# Richard J Hawryluk

## List of Publications by Year in descending order

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113  
papers

5,022  
citations

87888

38  
h-index

95266

68  
g-index

115  
all docs

115  
docs citations

115  
times ranked

1878  
citing authors

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 1  | New techniques for calculating heat and particle source rates due to neutral beam injection in axisymmetric tokamaks. <i>Journal of Computational Physics</i> , 1981, 43, 61-78. | 3.8  | 523       |
| 2  | Study of High-Beta Magnetohydrodynamic Modes and Fast-Ion Losses in PDX. <i>Physical Review Letters</i> , 1983, 50, 891-895.   | 7.8  | 380       |
| 3  | High-temperature plasmas in a tokamak fusion test reactor. <i>Physical Review Letters</i> , 1987, 58, 1004-1007.   | 7.8  | 238       |
| 4  | Principal physics developments evaluated in the ITER design review. <i>Nuclear Fusion</i> , 2009, 49, 065012.  | 3.5  | 200       |
| 5  | Bootstrap current in TFTR. <i>Physical Review Letters</i> , 1988, 60, 1306-1309.   | 7.8  | 170       |
| 6  | Neoclassical conductivity of a tokamak plasma. <i>Nuclear Fusion</i> , 1977, 17, 611-614.  | 3.5  | 140       |
| 7  | Energy dissipation in a thin polymer film by electron beam scattering. <i>Journal of Applied Physics</i> , 1974, 45, 2551-2566.  | 2.5  | 139       |
| 8  | Fusion power production from TFTR plasmas fueled with deuterium and tritium. <i>Physical Review Letters</i> , 1994, 72, 3526-3529.   | 7.8  | 130       |
| 9  | Baldur: A one-dimensional plasma transport code. <i>Computer Physics Communications</i> , 1988, 49, 275-398.   | 7.5  | 115       |
| 10 | Neutral-Beam-Heating Results from the Princeton Large Torus. <i>Physical Review Letters</i> , 1979, 43, 270-274.   | 7.8  | 114       |
| 11 | Results from deuterium-tritium tokamak confinement experiments. <i>Reviews of Modern Physics</i> , 1998, 70, 537-587.  | 45.6 | 113       |
| 12 | Fusion plasma experiments on TFTR: A 20 year retrospective. <i>Physics of Plasmas</i> , 1998, 5, 1577-1589.  | 1.9  | 91        |
| 13 | Confinement and heating of a deuterium-tritium plasma. <i>Physical Review Letters</i> , 1994, 72, 3530-3533.   | 7.8  | 90        |
| 14 | Review of deuterium-tritium results from the Tokamak Fusion Test Reactor. <i>Physics of Plasmas</i> , 1995, 2, 2176-2188.  | 1.9  | 89        |
| 15 | Fusion neutron production during deuterium neutral-beam injection into the PLT tokamak. <i>Nuclear Fusion</i> , 1981, 21, 67-81.   | 3.5  | 84        |
| 16 | Low-Z impurity transport in tokamaks. <i>Nuclear Fusion</i> , 1979, 19, 607-632.   | 3.5  | 82        |
| 17 | Prospects for pilot plants based on the tokamak, spherical tokamak and stellarator. <i>Nuclear Fusion</i> , 2011, 51, 103014.  | 3.5  | 77        |
| 18 | Importance of plasma response to nonaxisymmetric perturbations in tokamaks. <i>Physics of Plasmas</i> , 2009, 16, 056115.  | 1.9  | 74        |

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|----|--|-----|-----------|
| 19 | Overview of the JET results with the ITER-like wall. Nuclear Fusion, 2013, 53, 104002.   | 3.5 | 70        |
| 20 | High poloidal beta equilibria in the Tokamak Fusion Test Reactor limited by a natural inboard poloidal field null. Physics of Fluids B, 1991, 3, 2277-2284.            | 1.7 | 63        |
| 21 | Development of ITER 15% MA ELMy H-mode inductive scenario. Nuclear Fusion, 2009, 49, 085034.   | 3.5 | 62        |
| 22 | Progress towards high performance plasmas in the National Spherical Torus Experiment (NSTX). Nuclear Fusion, 2005, 45, S168-S180.                                      | 3.5 | 60        |
| 23 | Overview of TFTR transport studies. Plasma Physics and Controlled Fusion, 1991, 33, 1509-1536.   | 2.1 | 59        |
| 24 | Peaked density profiles in circular-limiter H-modes on the TFTR tokamak. Physical Review Letters, 1990, 65, 424-427.   | 7.8 | 58        |
| 25 | Confinement studies of neutral beam heated discharges in TFTR. Plasma Physics and Controlled Fusion, 1986, 28, 17-27.  | 2.1 | 56        |
| 26 | Effects of boronization of the first wall in TFTR. Journal of Nuclear Materials, 1990, 176-177, 337-342.   | 2.7 | 56        |
| 27 | The effect of current profile evolution on plasma-limiter interaction and the energy confinement time. Nuclear Fusion, 1979, 19, 1307-1317.                            | 3.5 | 50        |
| 28 | Exposure and development models used in electron beam lithography. Journal of Vacuum Science and Technology, 1981, 19, 1-17.   | 1.9 | 50        |
| 29 | The national spherical torus experiment (NSTX) research programme and progress towards high beta, long pulse operating scenarios. Nuclear Fusion, 2003, 43, 1653-1664. | 3.5 | 49        |
| 30 | Enhanced confinement in tokamaks. Physics of Fluids B, 1990, 2, 2941-2960.   | 1.7 | 48        |
| 31 | Energy dissipation in a thin polymer film by electron beam scattering: Experiment. Journal of Applied Physics, 1975, 46, 2528-2537.                                    | 2.5 | 47        |
| 32 | Correlations of heat and momentum transport in the TFTR tokamak. Physics of Fluids B, 1990, 2, 1300-1305.  | 1.7 | 47        |
| 33 | TFTR Initial operations. Plasma Physics and Controlled Fusion, 1984, 26, 11-22.  | 2.1 | 45        |
| 34 | Impurity levels and power loading in the PDX tokamak with high power neutral beam injection. Journal of Nuclear Materials, 1982, 111-112, 343-354.                     | 2.7 | 41        |
| 35 | Overview of DT results from TFTR. Nuclear Fusion, 1995, 35, 1429-1436.   | 3.5 | 41        |
| 36 | Thermal energy confinement scaling in PDX limiter discharges. Nuclear Fusion, 1984, 24, 1303-1334.   | 3.5 | 40        |

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|----|---|-----|-----------|
| 37 | Alfven frequency modes at the edge of TFTR plasmas. Nuclear Fusion, 1995, 35, 1469-1479.  | 3.5 | 40        |
| 38 | Overview of recent physics results from the National Spherical Torus Experiment (NSTX). Nuclear Fusion, 2007, 47, S645-S657.                                | 3.5 | 40        |
| 39 | Plasma wall interaction and tritium retention in TFTR. Journal of Nuclear Materials, 1997, 241-243, 214-226.  | 2.7 | 39        |
| 40 | Effects of tungsten radiation on the behaviour of PLT tokamak discharges. Nuclear Fusion, 1978, 18, 1305-1307.  | 3.5 | 38        |
| 41 | Overview of JET results. Nuclear Fusion, 2003, 43, 1540-1554.   | 3.5 | 38        |
| 42 | Radiation losses in PLT during neutral-beam and ICRF heating experiments. Nuclear Fusion, 1981, 21, 981-991.  | 3.5 | 37        |
| 43 | Initial limiter and getter operation in TFTR. Journal of Nuclear Materials, 1984, 128-129, 1-9.   | 2.7 | 35        |
| 44 | High- $\beta$ operation and magnetohydrodynamic activity on the TFTR tokamak. Physics of Fluids B, 1990, 2, 1287-1290.                                      | 1.7 | 35        |
| 45 | TFTR DT experiments. Plasma Physics and Controlled Fusion, 1997, 39, B103-B114.   | 2.1 | 35        |
| 46 | Effects of low-Z impurities during the start-up phase of a large tokamak. Nuclear Fusion, 1976, 16, 775-781.  | 3.5 | 34        |
| 47 | Plasma Edge Cooling during rf Heating. Physical Review Letters, 1978, 40, 1649-1651.  | 7.8 | 34        |
| 48 | Neutron emission from TFTR supershots. Nuclear Fusion, 1993, 33, 991-1007.  | 3.5 | 32        |
| 49 | High power neutral beam heating experiments on TFTR with balanced and unbalanced momentum input. Plasma Physics and Controlled Fusion, 1987, 29, 1235-1245. | 2.1 | 31        |
| 50 | Particle fueling and impurity control in PDX. Journal of Nuclear Materials, 1984, 128-129, 330-339.   | 2.7 | 30        |
| 51 | Low-Z impurities in the PLT Tokamak. Plasma Physics, 1978, 20, 723-734.   | 0.9 | 29        |
| 52 | Deuterium-tritium plasmas in novel regimes in the Tokamak Fusion Test Reactor. Physics of Plasmas, 1997, 4, 1714-1724.                                      | 1.9 | 27        |
| 53 | Initial Confinement Studies of Ohmically Heated Plasmas in the Tokamak Fusion Test Reactor. Physical Review Letters, 1984, 52, 1492-1495.                   | 7.8 | 26        |
| 54 | Transport and stability studies on TFTR. Plasma Physics and Controlled Fusion, 1988, 30, 1391-1403.   | 2.1 | 26        |

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|----|--|-----|-----------|
| 55 | Isotopic scaling of transport in deuterium-tritium plasmas. <i>Physica Scripta</i> , 1995, 51, 394-401.  | 2.5 | 25        |
| 56 | Progress towards high-performance, steady-state spherical torus. <i>Plasma Physics and Controlled Fusion</i> , 2003, 45, A335-A350.                                  | 2.1 | 25        |
| 57 | Status and Plans for TFTR. <i>Fusion Science and Technology</i> , 1992, 21, 1324-1331.   | 0.6 | 23        |
| 58 | Alpha-particle physics in the tokamak fusion test reactor DT experiment. <i>Plasma Physics and Controlled Fusion</i> , 1997, 39, A275-A283.                          | 2.1 | 23        |
| 59 | Recent D-T results on TFTR. <i>Plasma Physics and Controlled Fusion</i> , 1995, 37, A69-A85.   | 2.1 | 22        |
| 60 | ICRF results in D-T plasmas in JET and TFTR and implications for ITER. <i>Plasma Physics and Controlled Fusion</i> , 1998, 40, A87-A103.                             | 2.1 | 22        |
| 61 | First observation of ELM pacing with vertical jogs in a spherical torus. <i>Nuclear Fusion</i> , 2010, 50, 064015.   | 3.5 | 22        |
| 62 | Observations of changes in residual gas and surface composition with discharge cleaning in PLT. <i>Journal of Vacuum Science and Technology</i> , 1979, 16, 752-757. | 1.9 | 21        |
| 63 | Volt-second consumption during the start-up phase of PLT. <i>Nuclear Fusion</i> , 1979, 19, 1519-1522.   | 3.5 | 20        |
| 64 | PDX Divertor operation. <i>Journal of Nuclear Materials</i> , 1980, 93-94, 213-219.  | 2.7 | 20        |
| 65 | Initial conditioning of the TFTR vacuum vessel. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1984, 2, 1188-1192.                  | 2.1 | 20        |
| 66 | First-Wall and limiter conditioning in TFTR. <i>Journal of Nuclear Materials</i> , 1984, 128-129, 861-866.   | 2.7 | 18        |
| 67 | Deuterium and tritium experiments on TFTR. <i>Plasma Physics and Controlled Fusion</i> , 1994, 36, B3-B15.   | 2.1 | 18        |
| 68 | Plasma-surface interactions in TFTR DT experiments. <i>Journal of Nuclear Materials</i> , 1995, 220-222, 62-72.  | 2.7 | 18        |
| 69 | Transitionless enhanced confinement and the role of radial electric field shear. <i>Physics of Plasmas</i> , 2000, 7, 615-625.                                       | 1.9 | 18        |
| 70 | Experimental study of forbidden optical transitions in a dense, laser-produced plasma. <i>Physical Review A</i> , 1974, 10, 265-277.                                 | 2.5 | 17        |
| 71 | High- $Q$ plasmas in the TFTR tokamak. <i>Physics of Fluids B</i> , 1991, 3, 2308-2314.  | 1.7 | 17        |
| 72 | Ion Heating with High-Power Perpendicular Neutral-Beam Injection in the Poloidal Divertor Experiment (PDX). <i>Physical Review Letters</i> , 1982, 49, 326-329.      | 7.8 | 16        |

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|----|--|-----|-----------|
| 73 | Control of plasma stored energy for burn control using DIII-D in-vessel coils. Nuclear Fusion, 2015, 55, 053001.   | 3.5 | 16        |
| 74 | TFTR confinement results. Plasma Physics and Controlled Fusion, 1986, 28, 1329-1340.   | 2.1 | 15        |
| 75 | Results from D <sup>+</sup> T experiments on TFTR and implications for achieving an ignited plasma. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 1999, 357, 443-469. | 3.4 | 15        |
| 76 | Magnetic diagnostics and feedback control on TFTR (invited). Review of Scientific Instruments, 1985, 56, 941-946.  | 1.3 | 14        |
| 77 | Observation of inverted population levels in the FM <sup>+</sup> spherator. Applied Physics Letters, 1976, 29, 537-539.  | 3.3 | 13        |
| 78 | Tritium Processing and Management During D-T Experiments on TFTR. Fusion Science and Technology, 1994, 26, 427-433.  | 0.6 | 13        |
| 79 | The challenge and promise of studying burning plasmas. Physics Today, 2019, 72, 34-40.   | 0.3 | 13        |
| 80 | Stark profiles of forbidden and allowed transitions in a dense, laser produced helium plasma. Journal of Physics B: Atomic and Molecular Physics, 1972, 5, 1017-1030.  | 1.6 | 12        |
| 81 | Quenching of the current-driven ion-wave instability in the trapped-electron regime in a toroidal plasma. Physics of Fluids, 1977, 20, 95.   | 1.4 | 11        |
| 82 | Discharge cleaning on Tokamak Fusion Test Reactor after boronization. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1991, 9, 2713-2715.  | 2.1 | 11        |
| 83 | Operation at the tokamak equilibrium poloidal beta-limit in TFTR. Nuclear Fusion, 1992, 32, 1468-1473.   | 3.5 | 11        |
| 84 | An overview of the iter in-vessel coil systems. , 2009, , .  |     | 11        |
| 85 | Titanium Density Measurements in the Pdx Tokamak Using a Ti XVII Forbidden Line. Nuclear Fusion, 1979, 19, 1681-1683.  | 3.5 | 10        |
| 86 | TFTR Plasma Feedback Systems. Fusion Science and Technology, 1985, 8, 1807-1812.   | 0.6 | 10        |
| 87 | Acceleration of Beam Ions during Major-Radius Compression in the Tokamak Fusion Test Reactor. Physical Review Letters, 1985, 55, 2587-2590.  | 7.8 | 10        |
| 88 | Deuterium-Tritium Experiments on the Tokamak Fusion Test Reactor. Fusion Science and Technology, 1994, 26, 389-398.  | 0.6 | 10        |
| 89 | Confinement Studies In TFTR. Fusion Science and Technology, 1985, 8, 657-663.  | 0.6 | 8         |
| 90 | Long and short term trends in vessel conditioning of TFTR. Journal of Nuclear Materials, 1987, 145-147, 781-786.   | 2.7 | 7         |

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|-----|--|-----|-----------|
| 91  | Preparations for deuterium-tritium experiments on the Tokamak Fusion Test Reactor*. Physics of Plasmas, 1994, 1, 1560-1567.  | 1.9 | 7         |
| 92  | Inhibition of the Current-Driven Ion-Wave Instability in the Trapped-Electron Regime in the FM-1 Spherator. Physical Review Letters, 1976, 36, 726-729.                  | 7.8 | 6         |
| 93  | Tokamak Fusion Test Reactor gas injection control system design and operation. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1986, 4, 317-321. | 2.1 | 6         |
| 94  | Impurity Transport in the FM-1 Spherator. Physical Review Letters, 1974, 33, 1272-1275.  | 7.8 | 4         |
| 95  | RF-heating near the lower hybrid frequency in the FM-1 spherator. Nuclear Fusion, 1976, 16, 419-426.   | 3.5 | 4         |
| 96  | Carbon influx flow rate in an Ohmically heated plasma in the FM-1 spherator. Nuclear Fusion, 1976, 16, 797-804.  | 3.5 | 3         |
| 97  | Neutral beam injection on the Tokamak fusion test reactor. Nuclear Instruments & Methods in Physics Research B, 1987, 24-25, 741-745.                                    | 1.4 | 3         |
| 98  | Scientific Challenges, Opportunities and Priorities for the U.S. Fusion Energy Sciences Program. Journal of Fusion Energy, 2005, 24, 13-114.                             | 1.2 | 3         |
| 99  | Observation of magnetic islands in the FM-1 spherator. Physics of Fluids, 1976, 19, 1805.  | 1.4 | 2         |
| 100 | Energy loss rates of energetic ions injected into the FM-1 spherator. Physics of Fluids, 1977, 20, 1571.   | 1.4 | 2         |
| 101 | Results of NSTX heating experiments. IEEE Transactions on Plasma Science, 2003, 31, 60-67.   | 1.3 | 2         |
| 102 | 23rd IAEA Fusion Energy Conference: summary of sessions EX/C and ICC. Nuclear Fusion, 2011, 51, 094005.  | 3.5 | 2         |
| 103 | PBX-M upgrade for advanced stabilization and profile control studies. , 0, , .   |     | 1         |
| 104 | The operation of the TFTR tritium system. , 0, , .   |     | 1         |
| 105 | Improvement of Plasma Radial Position Control in PDX through an Automated Learning Procedure. IEEE Transactions on Plasma Science, 1982, 10, 99-105.                     | 1.3 | 0         |
| 106 | Experimental results from the TFTR tokamak. Philosophical Transactions of the Royal Society A, 1987, 322, 147-162.   | 1.1 | 0         |
| 107 | Progress in the neutral beam injection heating experiment on the Tokamak fusion test reactor. Nuclear Instruments & Methods in Physics Research B, 1989, 40-41, 996-999. | 1.4 | 0         |
| 108 | Deuterium-tritium experiments on TFTR. AIP Conference Proceedings, 1995, , .   | 0.4 | 0         |

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|-----|---|-----|-----------|
| 109 | Title is missing!. Journal of Fusion Energy, 2000, 19, 35-44.   | 1.2 | 0         |
| 110 | Report of the FESAC Panel on a Burning Plasma Program Strategy to Advance Fusion Energy. Journal of Fusion Energy, 2001, 20, 85-112.                      | 1.2 | 0         |
| 111 | Development of a Silicon-Based Electron Beam Transmission Window for Use in a KrF Excimer Laser System. Fusion Science and Technology, 2003, 43, 414-419. | 1.1 | 0         |
| 112 | Qualification of NSTX-U Inner TF Bundle Using Hi-Fidelity Models. Fusion Science and Technology, 2021, 77, 658-675.                                       | 1.1 | 0         |
| 113 | Control of TFTR during DT operations. , 0, , .  |     | 0         |