Wolfgang Biel

List of Publications by Year
in descending order

147	3,574	159585	161849
papers	citations	30 h-index	54 g-index

149	149	149	2512
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Design considerations of the European DEMOâ€™s IR-interferometer/polarimeter based on TRAVIS simulations. Journal of Instrumentation, 2022, 17, C04001.	1.2	3
2	Impact of the plasma operation on the technical requirements in EU-DEMO. Fusion Engineering and Design, 2022, 179, 113123.	1.9	8
3	Development of a concept and basis for the DEMO diagnostic and control system. Fusion Engineering and Design, 2022, 179, 113122.	1.9	16
4	Impact of plasma-wall interaction and exhaust on the EU-DEMO design. Nuclear Materials and Energy, 2021, 26, 100897.	1.3	18
5	Nuclear and thermal analysis of a multi-reflectometer system for DEMO. Fusion Engineering and Design, 2021, 167, 112349.	1.9	9
6	Nuclear analysis of the DEMO divertor survey visible high-resolution spectrometer. Fusion Engineering and Design, 2021, 169, 112460.	1.9	2
7	DesignÂand integration studies of a diagnostics slimÂcassette concept for DEMO. Nuclear Fusion, 2021, 61, 116046.	3.5	4
8	TFC-PREDIM: A FE dimensioning procedure for the TF coil system of a DEMO tokamak reactor. Fusion Engineering and Design, 2020, 159, 111948.	1.9	5
9	The EU DEMO equatorial outboard limiter â€" Design and port integration concept. Fusion Engineering and Design, 2020, 158, 111647.	1.9	8
10	Preliminary study of a visible, high spatial resolution spectrometer for DEMO divertor survey. Journal of Instrumentation, 2020, 15, C01008-C01008.	1.2	4
11	DEMO physics challenges beyond ITER. Fusion Engineering and Design, 2020, 156, 111603.	1.9	40
12	Overview of first Wendelstein 7-X high-performance operation. Nuclear Fusion, 2019, 59, 112004.	3.5	165
13	Pre-conceptual study of the European DEMO neutron diagnostics. Journal of Instrumentation, 2019, 14, C09001-C09001.	1.2	7
14	Bolometer developments in diagnostics for magnetic confinement fusion. Journal of Instrumentation, 2019, 14, C10004-C10004.	1.2	14
15	Implications of uncertainties on European DEMO design. Nuclear Fusion, 2019, 59, 066012.	3.5	3
16	Detailed structural analysis of a graded TF coil winding pack for EU DEMO. Fusion Engineering and Design, 2019, 146, 535-538.	1.9	4
17	Overview of the DEMO staged design approach in Europe. Nuclear Fusion, 2019, 59, 066013.	3.5	156
18	Conceptual studies on spectroscopy and radiation diagnostic systems for plasma control on DEMO. Fusion Engineering and Design, 2019, 146, 2297-2301.	1.9	8

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19	Simulation of magnetic control of the plasma shape on the DEMO tokamak. Fusion Engineering and Design, 2019, 146, 728-731.	1.9	8
20	Diagnostics for plasma control â€“ From ITER to DEMO. Fusion Engineering and Design, 2019, 146, 465-472.	1.9	71
21	Integration Concept of the Reflectometry Diagnostic for the Main Plasma in DEMO. IEEE Transactions on Plasma Science, 2018, 46, 451-457.	1.3	13
22	DEMO design activity in Europe: Progress and updates. Fusion Engineering and Design, 2018, 136, 729-741.	1.9	224
23	Magnetic configuration effects on the Wendelstein 7-X stellarator. Nature Physics, 2018, 14, 855-860.	16.7	110
24	Conceptual studies of gamma ray diagnostics for DEMO control. Fusion Engineering and Design, 2018, 136, 1494-1498.	1.9	6
25	Erosion of installations in ports of a fusion reactor by hot fuel atoms. Nuclear Materials and Energy, 2017, 12, 1298-1302.	1.3	3
26	Investigations of the first-wall erosion of DEMO with the CELLSOR code. Nuclear Materials and Energy, 2017, 12, 1163-1170.	1.3	7
27	Heating & current drive efficiencies, TBR and RAMI considerations for DEMO. Fusion Engineering and Design, 2017, 123, 495-499.	1.9	7
28	Initial definition of structural load conditions in DEMO. Fusion Engineering and Design, 2017, 124, 633-637.	1.9	21
29	Dealing with uncertainties in fusion power plant conceptual development. Nuclear Fusion, 2017, 57, 046024.	3.5	8
30	The DEMO wall load challenge. Nuclear Fusion, 2017, 57, 046002.	3.5	65
31	Major results from the first plasma campaign of the Wendelstein 7-X stellarator. Nuclear Fusion, 2017, 57, 102020.	3.5	128
32	A stepladder approach to a tokamak fusion power plant. Nuclear Fusion, 2017, 57, 086002.	3.5	42
33	European DEMO design strategy and consequences for materials. Nuclear Fusion, 2017, 57, 092002.	3.5	233
34	The physics and technology basis entering European system code studies for DEMO. Nuclear Fusion, 2017, 57, 016011.	3.5	84
35	Uncertainties in power plant design point evaluations. Fusion Engineering and Design, 2017, 123, 63-66.	1.9	16
36	Systems code studies on the optimization of design parameters for a pulsed DEMO tokamak reactor. Fusion Engineering and Design, 2017, 123, 206-211.	1.9	8

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37	Mechanical pre-dimensioning and pre-optimization of the tokamaksâ€™ toroidal coils featuring the winding pack layout. Fusion Engineering and Design, 2017, 124, 77-81.	1.9	8
38	Progress in EU-DEMO in-vessel components integration. Fusion Engineering and Design, 2017, 124, 562-566.	1.9	20
39	Diagnostic set-up and modelling for investigation of synergy between 3D edge physics and plasma-wall interactions on Wendelstein 7-X. Nuclear Fusion, 2017, 57, 066049.	3.5	18
40	VUV spectroscopy in impurity injection experiments at KSTAR using prototype ITER VUV spectrometer. Review of Scientific Instruments, 2017, 88, 083511.	1.3	5
41	Comment on â€˜On the fusion triple product and fusion power gain of tokamak pilot plants and reactorsâ€™, by A. Costley. Nuclear Fusion, 2017, 57, 038001.	3.5	4
42	Design of ITER divertor VUV spectrometer and prototype test at KSTAR tokamak. European Physical Journal D, 2017, 71, 1.	1.3	7
43	Confirmation of the topology of the Wendelstein 7-X magnetic field to better than 1:100,000. Nature Communications, 2016, 7, 13493.	12.8	85
44	Overview of diagnostic performance and results for the first operation phase in Wendelstein 7-X (invited). Review of Scientific Instruments, 2016, 87, 11D304.	1.3	45
45	Diagnostics and control for the steady state and pulsed tokamak DEMO. Nuclear Fusion, 2016, 56, 026009.	3.5	45
46	Approaches to Analyze Structural Issues of the European DEMO Toroidal Field Coil System at an Early Design Stage. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-5.	1.7	15
47	Overview of the design approach and prioritization of R&D activities towards an EU DEMO. Fusion Engineering and Design, 2016, 109-111, 1464-1474.	1.9	178
48	Startup impurity diagnostics in Wendelstein 7-X stellarator in the first operational phase. Journal of Instrumentation, 2015, 10, P10015-P10015.	1.2	15
49	The Set of Diagnostics for the First Operation Campaign of the Wendelstein 7-X Stellarator. Journal of Instrumentation, 2015, 10, P10002-P10002.	1.2	37
50	Aim and features of the simplified parametric mock-up of a fast shutter developed for ITER optical diagnostics. Fusion Engineering and Design, 2015, 96-97, 786-789.	1.9	3
51	Comparison of effective rate coefficients for high energy charge-exchange with measurements of the Rydberg series of Ar16+at the tokamak TEXTOR. Journal of Physics B: Atomic, Molecular and Optical Physics, 2015, 48, 144033.	1.5	10
52	Studies of protection and recovery techniques of diagnostic mirrors for ITER. Nuclear Fusion, 2015, 55, 093015.	3.5	10
53	Design overview of the ITER core CXRS fast shutter and manufacturing implications during the detailed design work. Fusion Engineering and Design, 2015, 96-97, 746-750.	1.9	6
54	Dynamic performance of frictionless fast shutters for ITER: Numerical and analytical sensitivity study for the development of a test program. Fusion Engineering and Design, 2015, 96-97, 903-906.	1.9	4

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55	DEMO diagnostics and burn control. Fusion Engineering and Design, 2015, 96-97, 8-15.	1.9	35
56	Mirror Station for studies of the protection of diagnostic mirrors from impurity contamination in ITER: Design and first results. Fusion Engineering and Design, 2015, 96-97, 290-293.	1.9	6
57	Major aspects of the design of a first mirror for the ITER core CXRS diagnostics. Fusion Engineering and Design, 2015, 96-97, 812-816.	1.9	5
58	Status of the R&D activities to the design of an ITER core CXRS diagnostic system. Fusion Engineering and Design, 2015, 96-97, 129-135.	1.9	9
59	Diagnostic setup for investigation of plasma wall interactions at Wendelstein 7-X. Fusion Engineering and Design, 2015, 96-97, 891-894.	1.9	17
60	Status of the diagnostics development for the first operation phase of the stellarator Wendelstein 7-X. Review of Scientific Instruments, 2014, 85, 11D818.	1.3	7
61	Test of prototype ITER vacuum ultraviolet spectrometer and its application to impurity study in KSTAR plasmas. Review of Scientific Instruments, 2014, 85, 11E403.	1.3	13
62	Dynamic structural analysis of a fast shutter with a pneumatic actuator. Fusion Engineering and Design, 2013, 88, 2133-2137.	1.9	7
63	Approaches to multifield numerical analysis for components of the ITER core CXRS upper port plug diagnostics. Fusion Engineering and Design, 2013, 88, 2015-2020.	1.9	6
64	Technical challenges in the construction of the steady-state stellarator Wendelstein 7-X. Nuclear Fusion, 2013, 53, 126001.	3.5	77
65	Dust investigations in TEXTOR: Impact of dust on plasmaâ€“wall interactions and on plasma performance. Journal of Nuclear Materials, 2013, 438, S126-S132.	2.7	19
66	Thermal and hydraulic performance of the helium-operated shutter protecting the first mirror of the ITER diagnostics. Fusion Engineering and Design, 2013, 88, 1288-1292.	1.9	4
67	Fast shutter concepts for the new ITER core CXRS upper port plug baseline considering the actuator located inside and outside the port plug. Fusion Engineering and Design, 2013, 88, 2073-2076.	1.9	6
68	Retractable tube design issues in ITER CXRS UPP #3. Fusion Engineering and Design, 2013, 88, 1352-1356.	1.9	0
69	Investigation of advanced materials for fusion alpha particle diagnostics. Fusion Engineering and Design, 2013, 88, 533-536.	1.9	1
70	Fluctuation BES measurements with the ITER core CXRS prototype spectrometer. Fusion Engineering and Design, 2013, 88, 1386-1389.	1.9	2
71	Atomic data for beam-stimulated plasma spectroscopy in fusion plasmas. AIP Conference Proceedings, 2013, , .	0.4	3
72	A high etendue spectrometer suitable for core charge eXchange recombination spectroscopy on ITER. Review of Scientific Instruments, 2012, 83, 10D515.	1.3	9

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73	Method to obtain absolute impurity density profiles combining charge exchange and beam emission spectroscopy without absolute intensity calibration. Review of Scientific Instruments, 2012, 83, 10D519.	1.3	11
74	Structural Analysis of a Prototype Fast Shutter for ITER cCXRS Diagnostic. IEEE Transactions on Plasma Science, 2012, 40, 746-752.	1.3	13
75	The ITER Thomson scattering core LIDAR diagnostic. Journal of Instrumentation, 2012, 7, C03043-C03043.	1.2	9
76	First fusion proton measurements in TEXTOR plasmas using activation technique. Review of Scientific Instruments, 2012, 83, 10D318.	1.3	0
77	Non-statistical simulations for neutral beam spectroscopy in fusion plasmas. , 2012, , .		5
78	A non-statistical atomic model for beam emission and motional Stark effect diagnostics in fusion plasmas. Review of Scientific Instruments, 2012, 83, 10D504.	1.3	6
79	Development of in situ cleaning techniques for diagnostic mirrors in ITER. Fusion Engineering and Design, 2011, 86, 1780-1783.	1.9	28
80	Electromagnetic modeling and subsequent structural analysis for ITER core CXRS upper port plug diagnostic structure. Fusion Engineering and Design, 2011, 86, 2016-2020.	1.9	15
81	Optimization of the availability of the core CXRS diagnostics for ITER. Fusion Engineering and Design, 2011, 86, 1174-1177.	1.9	5
82	Development of design options for the port plug components of the ITER core CXRS diagnostic. Fusion Engineering and Design, 2011, 86, 2055-2059.	1.9	15
83	Development of laser-based diagnostics for surface characterisation of wall components in fusion devices. Fusion Engineering and Design, 2011, 86, 1336-1340.	1.9	64
84	Overview on R&D and design activities for the ITER core charge exchange spectroscopy diagnostic system. Fusion Engineering and Design, 2011, 86, 548-551.	1.9	24
85	Feasibility of Upper Port Plug tube handling. Fusion Engineering and Design, 2011, 86, 2060-2063.	1.9	4
86	Alternative system design concepts for the ITER core CXRS upper port plug front end. Fusion Engineering and Design, 2011, 86, 1306-1309.	1.9	1
87	Measurement of Plasma Density in Modern Fusion Devices by Dispersion Interferometer. Fusion Science and Technology, 2011, 59, 120-123.	1.1	1
88	Diagnostics Development for Steady State Operation of the Stellarator Wendelstein 7-X. Contributions To Plasma Physics, 2011, 51, 271-278.	1.1	5
89	Structural analysis of a prototype fast shutter for ITER cCXRS diagnostic. , 2011, , .		0
90	First results from the modular multi-channel dispersion interferometer at the TEXTOR tokamak. Review of Scientific Instruments, 2011, 82, 063509.	1.3	20

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91	Collisional excitation and emission ofHÎ±Stark multiplet in fusion plasmas. Journal of Physics B: Atomic, Molecular and Optical Physics, 2010, 43, 011002.	1.5	31
92	Non-statistical populations of magnetic sublevels of hydrogen beam atoms in fusion plasmas. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 623, 738-740.	1.6	4
93	Active beam spectroscopy for ITER. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 623, 720-725.	1.6	16
94	Diagnostics design for steady-state operation of the Wendelstein 7-X stellarator. Review of Scientific Instruments, 2010, 81, 10E133.	1.3	15
95	Development of two-channel prototype ITER vacuum ultraviolet spectrometer with back-illuminated charge-coupled device and microchannel plate detectors. Review of Scientific Instruments, 2010, 81, 10E508.	1.3	10
96	Performance analysis for an infrared second harmonics dispersion interferometer. , 2009, , .		0
97	Transport of argon and iron during a resonant magnetic perturbation at TEXTOR-DED. Plasma Physics and Controlled Fusion, 2009, 51, 032001.	2.1	10
98	Kinetics of highly excited states in Ar17+charge exchange recombination fusion plasma spectroscopy. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 165701.	1.5	9
99	Conceptual design of the ITER upper port plug for charge exchange diagnostic. Fusion Engineering and Design, 2009, 84, 1671-1675.	1.9	10
100	Kinetics of highly excited states in Ar17+charge exchange recombination fusion plasma spectroscopy. Journal of Physics B: Atomic, Molecular and Optical Physics, 2009, 42, 189801-189801.	1.5	1
101	Selected Design Solutions for the Integration of the CXRS Diagnostic in to ITER Upper Port Plug No. 3. Fusion Science and Technology, 2009, 56, 134-138.	1.1	3
102	Active Beam Spectroscopy. AIP Conference Proceedings, 2008, , .	0.4	10
103	Development of a multichannel dispersion interferometer at TEXTOR. Review of Scientific Instruments, 2008, 79, 10E708.	1.3	20
104	Absolute intensity calibration of the Wendelstein 7-X high efficiency extreme ultraviolet overview spectrometer system. Review of Scientific Instruments, 2008, 79, 093504.	1.3	17
105	Review of atomic data needs for active charge-exchange spectroscopy on ITER. Review of Scientific Instruments, 2008, 79, 10F532.	1.3	17
106	Validation of the ITER CXRS design by tests on TEXTOR. Review of Scientific Instruments, 2008, 79, 10F526.	1.3	13
107	The CXRS diagnostic for ITER and the CXRS-Pilot Experiment on TEXTOR. AIP Conference Proceedings, 2008, , .	0.4	0
108	Overview of Experiments with the Dynamic Ergodic Divertor on TEXTOR. Contributions To Plasma Physics, 2006, 46, 515-526.	1.1	19

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109	Comparison of impurity transport model with measurements of He-like spectra of argon at the tokamak TEXTOR. Plasma Physics and Controlled Fusion, 2006, 48, 1633-1646.	2.1	16
110	Status of the DNB based ITER CXRS and BES diagnostic. Review of Scientific Instruments, 2006, 77, 10F516.	1.3	13
111	10kHz repetitive high-resolution TV Thomson scattering on TEXTOR: Design and performance (invited). Review of Scientific Instruments, 2006, 77, 10E512.	1.3	28
112	High efficiency extreme ultraviolet overview spectrometer: Construction and laboratory testing. Review of Scientific Instruments, 2006, 77, 10F305.	1.3	16
113	High speed reflectometer for EUV mask-blanks. , 2005, 5835, 252.		1
114	Overview of Core Diagnostics for TEXTOR. Fusion Science and Technology, 2005, 47, 220-245.	1.1	14
115	Vacuum Ultraviolet Spectroscopy at TEXTOR. Fusion Science and Technology, 2005, 47, 246-252.	1.1	11
116	First results from the dynamic ergodic divertor at TEXTOR. Journal of Nuclear Materials, 2005, 337-339, 171-175.	2.7	25
117	Turbulence investigations during ergodic divertor operation with induced 2/1 tearing mode. European Physical Journal D, 2005, 55, 295-306.	0.4	2
118	High speed reflectometer for EUV mask-blanks. , 2005, , .		1
119	Toroidal Plasma Rotation Induced by the Dynamic Ergodic Divertor in the TEXTOR Tokamak. Physical Review Letters, 2005, 94, 015003.	7.8	73
120	Influence of the Dynamic Ergodic Divertor on the Density Limit in TEXTOR. Physical Review Letters, 2005, 94, 105003.	7.8	24
121	Complex Spectra in Fusion Plasmas. Physica Scripta, 2005, T120, 19-29.	2.5	48
122	Transport and divertor properties of the dynamic ergodic divertor. Plasma Physics and Controlled Fusion, 2005, 47, B237-B248.	2.1	32
123	Effect of the dynamic ergodic divertor in the TEXTOR tokamak on MHD stability, plasma rotation and transport. Nuclear Fusion, 2005, 45, 1700-1707.	3.5	58
124	High-throughput EUV reflectometer for EUV mask blanks. , 2004, , .		6
125	Detector system with high time resolution for the continuous measurement of spectra in the vacuum ultraviolet wavelength range. Review of Scientific Instruments, 2004, 75, 2471-2474.	1.3	12
126	Design of a highâ€“efficiency extreme ultraviolet overview spectrometer system for plasma impurity studies on the stellarator experiment Wendelstein 7-X. Review of Scientific Instruments, 2004, 75, 3268-3275.	1.3	32

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127	Compact imaging Bragg spectrometer for fusion devices. Review of Scientific Instruments, 2004, 75, 3727-3729.	1.3	19
128	10â€‚kHz repetitive high-resolution TV Thomson scattering on TEXTOR. Review of Scientific Instruments, 2004, 75, 3849-3851.	1.3	14
129	The dynamic ergodic divertor in the TEXTOR tokamak: plasma response to dynamic helical magnetic field perturbations. Plasma Physics and Controlled Fusion, 2004, 46, B143-B155.	2.1	34
130	Effect upon the core plasma radiation due to high power laser injection onto C, W and Ta test-limiters in TEXTOR. Journal of Nuclear Materials, 2003, 313-316, 1156-1160.	2.7	1
131	Study of the Relevance of Thermal Instability Caused by Impurity Radiation to MARFE Development in a Limiter Tokamak. Contributions To Plasma Physics, 2002, 42, 290-295.	1.1	2
132	The TEC Web-Umbrella. Fusion Engineering and Design, 2002, 60, 475-480.	1.9	13
133	Heat load to a tantalumâ€“tungsten twin-test-limiter and the effect to high-Z core plasma concentration of TEXTOR-94. Journal of Nuclear Materials, 2002, 307-311, 149-153.	2.7	1
134	Dust particles in controlled fusion devices: morphology, observations in the plasma and influence on the plasma performance. Nuclear Fusion, 2001, 41, 1087-1099.	3.5	96
135	New diagnostics for physics studies on TEXTOR-94 (invited). Review of Scientific Instruments, 2001, 72, 1046-1053.	1.3	5
136	Local emission and core concentration of tungsten in TEXTOR-94 plasmas operated with tungsten test and poloidal limiters. Journal of Nuclear Materials, 2001, 290-293, 768-772.	2.7	4
137	Operational limits under different wall conditions on TEXTOR-94. Journal of Nuclear Materials, 2001, 290-293, 1148-1154.	2.7	20
138	Impurity release and recycling behaviour in TEXTOR-94 with siliconised walls. Journal of Nuclear Materials, 2001, 290-293, 1190-1194.	2.7	6
139	Operation of TEXTOR-94 with tungsten poloidal main limiters. Journal of Nuclear Materials, 2001, 290-293, 947-952.	2.7	42
140	High-resolution x-ray crystal spectrometer/polarimeter at torus experiment for technology oriented research-94. Review of Scientific Instruments, 2001, 72, 2566-2574.	1.3	19
141	Overview of radiative improved mode results on TEXTOR-94. Nuclear Fusion, 1999, 39, 1637-1648.	3.5	69
142	Density limits in TEXTOR-94 auxiliary heated discharges. Nuclear Fusion, 1999, 39, 765-776.	3.5	56
143	Deposition of Silicon on Carbon Surfaces During Tokamak Discharges at TEXTOR-94. Physica Scripta, 1999, T81, 70.	2.5	1
144	X-Ray Spectroscopy at the TEXTOR-94 Tokamak. Physica Scripta, 1999, T83, 132.	2.5	34

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145	Investigation of oscillations and anomalous transport in a hydrogen hollow cathode discharge by a spatially three-dimensional two-fluid model. Plasma Physics and Controlled Fusion, 1998, 40, 1845-1867.	2.1	4
146	Determination of atomic and molecular particle densities and temperatures in a low-pressure hydrogen hollow cathode discharge. Plasma Physics and Controlled Fusion, 1997, 39, 661-681.	2.1	17
147	Study of oscillating magnetized hollow cathode arcs by time-resolved Thomson scattering measurements. Plasma Physics and Controlled Fusion, 1995, 37, 599-610.	2.1	4