Richard A Wilhelm

List of Publications by Year
in descending order

68	1,182	361413	414414
papers	citations	20 h-index	32 g-index

68	68	68	1061
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Ultrafast electronic response of graphene to a strong and localized electric field. Nature Communications, 2016, 7, 13948.	12.8	125
2	Defect Mediated Desorption of the KBr(001) Surface Induced by Single Highly Charged Ion Impact. Physical Review Letters, 2008, 101, 096102.	7.8	91
3	Interatomic Coulombic Decay: The Mechanism for Rapid Deexcitation of Hollow Atoms. Physical Review Letters, 2017, 119, 103401.	7.8	69
4	Charge Exchange and Energy Loss of Slow Highly Charged Ions in 1Ânm Thick Carbon Nanomembranes. Physical Review Letters, 2014, 112, 153201.	7.8	62
5	Fabrication of nanopores in 1â€‰nm thick carbon nanomembranes with slow highly charged ions. Applied Physics Letters, 2013, 102, .	3.3	49
6	Phase Diagram for Nanostructuring<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>CaF</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>Surfaces by Slow Highly Charged Ions. Physical Review Letters, 2012, 109, 117602.	7.8	42
7	Perforating Freestanding Molybdenum Disulfide Monolayers with Highly Charged Ions. Journal of Physical Chemistry Letters, 2019, 10, 904-910.	4.6	42
8	Response of GaN to energetic ion irradiation: conditions for ion track formation. Journal Physics D: Applied Physics, 2015, 48, 325304.	2.8	40
9	Highly charged ion induced nanostructures at surfaces by strong electronic excitations. Progress in Surface Science, 2015, 90, 377-395.	8.3	31
10	Sputter yields of rough surfaces: Importance of the mean surface inclination angle from nano- to microscopic rough regimes. Applied Surface Science, 2021, 570, 151204.	6.1	31
11	Tuning the Fabrication of Nanostructures by Low-Energy Highly Charged Ions. Physical Review Letters, 2016, 117, 126101.	7.8	29
12	Electrochemical Behavior of Graphene in a Deep Eutectic Solvent. ACS Applied Materials & Interfaces, 2020, 12, 40937-40948.	8.0	29
13	Unraveling energy loss processes of low energy heavy ions in 2D materials. Communications Physics, 2019, 2, .	5.3	28
14	Surface nanostructuring of SrTiO3 single crystals by slow highly charged ions and swift heavy ions. Nuclear Instruments & Methods in Physics Research B, 2011, 269, 1234-1237.	1.4	27
15	Pit formation on poly(methyl methacrylate) due to ablation induced by individual slow highly charged ion impact. Europhysics Letters, 2012, 97, 13001.	2.0	26
16	Swift heavy ion track formation in SrTiO₃and TiO₂under random, channeling and near-channeling conditions. Journal Physics D: Applied Physics, 2017, 50, 205302.	2.8	24
17	Sputtering of nanostructured tungsten and comparison to modelling with TRI3DYN. Journal of Nuclear Materials, 2020, 532, 152019.	2.7	23
18	Roadmap on photonic, electronic and atomic collision physics: III. Heavy particles: with zero to relativistic speeds. Journal of Physics B: Atomic, Molecular and Optical Physics, 2019, 52, 171003.	1.5	22

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19	Atomic-Scale Carving of Nanopores into a van der Waals Heterostructure with Slow Highly Charged Ions. ACS Nano, 2020, 14, 10536-10543.	14.6	22
20	Threshold and efficiency for perforation of 1 nm thick carbon nanomembranes with slow highly charged ions. 2D Materials, 2015, 2, 035009.	4.4	21
21	Depth-Resolved Structural and Compositional Characterization of Ion-Implanted Polystyrene that Enables Direct Covalent Immobilization of Biomolecules. Journal of Physical Chemistry C, 2015, 119, 16793-16803.	3.1	21
22	Low-energy electron irradiation induced synthesis of molecular nanosheets: influence of the electron beam energy. Faraday Discussions, 2021, 227, 61-79.	3.2	21
23	Tuning the antiferromagnetic to ferromagnetic phase transition in FeRh thin films by means of low-energy/low fluence ion irradiation. Nuclear Instruments & Methods in Physics Research B, 2015, 358, 251-254.	1.4	20
24	Charge-state-dependent energy loss of slow ions. I. Experimental results on the transmission of highly charged ions. Physical Review A, 2016, 93, .	2.5	20
25	A study of the structural properties of GaN implanted by various rare-earth ions. Nuclear Instruments & Methods in Physics Research B, 2013, 307, 446-451.	1.4	17
26	Charge-Exchange-Driven Low-Energy Electron Splash Induced by Heavy Ion Impact on Condensed Matter. Journal of Physical Chemistry Letters, 2019, 10, 4805-4811.	4.6	17
27	Charge-state-dependent energy loss of slow ions. II. Statistical atom model. Physical Review A, 2016, 93, .	2.5	16
28	Vanishing influence of the band gap on the charge exchange of slow highly charged ions in freestanding single-layer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>MoS</mml:mi><mml:mn>2</mml:mn></mml:msub></mm Physical Review B, 2020, 102, .	3.2	15
29	Surface nanostructuring of LiNbO3 by high-density electronic excitations. Nuclear Instruments & Methods in Physics Research B, 2013, 315, 265-268.	1.4	14
30	Novel aspects on the irradiation of HOPG surfaces with slow highly charged ions. Nuclear Instruments & Methods in Physics Research B, 2013, 315, 252-256.	1.4	14
31	A versatile ion beam spectrometer for studies of ion interaction with 2D materials. Review of Scientific Instruments, 2018, 89, 085101.	1.3	14
32	Peeling graphite layer by layer reveals the charge exchange dynamics of ions inside a solid. Communications Physics, 2021, 4, .	5.3	13
33	A comparison of the structural changes and optical properties of LiNbO3, Al2O3 and ZnO after Er+ ion implantation. Nuclear Instruments & Methods in Physics Research B, 2014, 331, 182-186.	1.4	12
34	Surface modifications of BaF2 and CaF2 single crystals by slow highly charged ions. Applied Surface Science, 2014, 310, 169-173.	6.1	11
35	The role of contaminations in ion beam spectroscopy with freestanding 2D materials: A study on thermal treatment. Journal of Chemical Physics, 2020, 153, 014702.	3.0	11
36	Slow highly charged ion induced nanopit formation on the KCl(001) surface. Europhysics Letters, 2016, 115, 43001.	2.0	10

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37	Creation of surface nanostructures in Al2O3 by slow highly charged ions. Nuclear Instruments & Methods in Physics Research B, 2013, 317, 170-173.	1.4	9
38	A study of the structural and magnetic properties of ZnO implanted by Gd ions. Nuclear Instruments & Methods in Physics Research B, 2014, 332, 80-84.	1.4	9
39	A high temperature dual-mode quartz crystal microbalance technique for erosion and thermal desorption spectroscopy measurements. Review of Scientific Instruments, 2020, 91, 125104.	1.3	9
40	Neutralization Dynamics of Slow Highly Charged Ions in 2D Materials. Applied Sciences (Switzerland), 2018, 8, 1050.	2.5	8
41	The structural changes and optical properties of LiNbO3 after Er implantation using high ion fluencies. Nuclear Instruments & Methods in Physics Research B, 2014, 332, 74-79.	1.4	7
42	Fluorination of graphene leads to susceptibility for nanopore formation by highly charged ion impact. Physical Review Materials, 2021, 5, .	2.4	7
43	Nanostructures induced by highly charged ions on CaF₂and KBr. Journal of Physics: Conference Series, 2009, 194, 012060.	0.4	6
44	Ferromagnetic and paramagnetic magnetization of implanted GaN:Ho,Tb,Sm,Tm films. Journal of Applied Physics, 2015, 117, .	2.5	5
45	Creation of surface nanostructures in lanthanum fluoride single crystals by irradiation with slow highly charged ions. Nuclear Instruments & Methods in Physics Research B, 2019, 460, 137-140.	1.4	5
46	Angle-dependent charge exchange and energy loss of slow highly charged ions in freestanding graphene. Physical Review A, 2021, 104, .	2.5	5
47	Surface nanostructures on Nb-doped SrTiO₃ irradiated with swift heavy ions at grazing incidence. Nanotechnology, 2022, 33, 235303.	2.6	5
48	The role of radiative de-excitation in the neutralization process of highly charged ions interacting with a single layer of graphene. Nuclear Instruments & Methods in Physics Research B, 2018, 422, 63-67.	1.4	4
49	On the highly charged ion transmission spectroscopy applied to 2D materials. Journal of Physics: Conference Series, 2020, 1412, 062010.	0.4	4
50	Nanostructuring CaF2 surfaces with slow highly charged ions. Journal of Physics: Conference Series, 2014, 488, 012002.	0.4	3
51	Erbium-ion implantation into various crystallographic cuts of Al2O3. Nuclear Instruments & Methods in Physics Research B, 2015, 365, 89-93.	1.4	3
52	Modifications of gallium phosphide single crystals using slow highly charged ions and swift heavy ions. Nuclear Instruments & Methods in Physics Research B, 2016, 382, 86-90.	1.4	3
53	Nano-hillock formation on CaF2 due to individual slow Au-cluster impacts. Nanotechnology, 2021, 32, 355701.	2.6	3
54	Ion implantation of the <scp>4H SiC</scp> epitaxial layers and substrates with 2â€‰<scp>MeV Se⁺</scp> and 1â€‰<scp>MeV Al⁺</scp> ions. X-Ray Spectrometry, 2015, 44, 371-378.	1.4	2

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55	Nanostructures formed on KBr surfaces by the impact of highly charged ions. Journal of Physics: Conference Series, 2009, 194, 132022.	0.4	1
56	Nano-structuring of CaF2 surfaces by slow highly charged ions: simulation and experiment. Journal of Physics: Conference Series, 2014, 488, 132015.	0.4	1
57	Interaction of highly charged ions with carbon nano membranes. Journal of Physics: Conference Series, 2015, 635, 012027.	0.4	1
58	A setup for transmission measurements of low energy multiply charged ions through free-standing few atomic layer films. Nuclear Instruments & Methods in Physics Research B, 2016, 382, 119-122.	1.4	1
59	Polarity dependence of Mn incorporation in (Ga,Mn)N superlattices. Journal of Crystal Growth, 2016, 437, 49-52.	1.5	1
60	The role of contaminations on the interaction of highly charged ions with 2D materials. Journal of Physics: Conference Series, 2020, 1412, 202011.	0.4	1
61	Surface Modification on KBr(001) with Slow Highly Charged Ions in High Fluence and High Potential Energy Regime. Journal of Physics: Conference Series, 2012, 388, 132030.	0.4	0
62	Effect of chemical etching on poly(methyl methacrylate) irradiated with slow highly charged ions. Physica Scripta, 2013, T156, 014065.	2.5	0
63	Interaction of multiply charged ions with single layer graphene Part I: charge exchange and energy loss. Journal of Physics: Conference Series, 2015, 635, 032002.	0.4	0
64	Threshold and Efficiency for Perforation of 1nm Thick Carbon Nano-membranes with Slow Highly Charged Ions. Journal of Physics: Conference Series, 2015, 635, 032011.	0.4	0
65	Charge equilibration times for slow highly charged ions in single layer graphene. Journal of Physics: Conference Series, 2017, 875, 112001.	0.4	0
66	Energy deposition of highly charged ions transmitted through single layer MoS2. Journal of Physics: Conference Series, 2020, 1412, 162018.	0.4	0
67	Highly charged ion impact on graphene leading to the emission of low energy electrons. Journal of Physics: Conference Series, 2020, 1412, 202012.	0.4	0
68	Hohe Ladung trifft dÃ¼nne Schicht. Vakuum in Forschung Und Praxis, 2021, 33, 30-33.	0.1	0