

# Izabela Szlufarska

## List of Publications by Year in descending order

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79  
papers

3,388  
citations

186265

28  
h-index

144013

57  
g-index

80  
all docs

80  
docs citations

80  
times ranked

3792  
citing authors

#	ARTICLE	IF	CITATIONS
1	Friction laws at the nanoscale. <i>Nature</i> , 2009, 457, 1116-1119.	27.8	783
2	Radiation effects in SiC for nuclear structural applications. <i>Current Opinion in Solid State and Materials Science</i> , 2012, 16, 143-152.	11.5	318
3	Picometre-precision analysis of scanning transmission electron microscopy images of platinum nanocatalysts. <i>Nature Communications</i> , 2014, 5, 4155.	12.8	225
4	A Crossover in the Mechanical Response of Nanocrystalline Ceramics. <i>Science</i> , 2005, 309, 911-914.	12.6	209
5	Ag diffusion in cubic silicon carbide. <i>Journal of Nuclear Materials</i> , 2011, 408, 257-271.	2.7	91
6	Effects of grain size and grain boundaries on defect production in nanocrystalline 3C-SiC. <i>Acta Materialia</i> , 2010, 58, 2843-2853.	7.9	84
7	Chemical Origins of Frictional Aging. <i>Physical Review Letters</i> , 2012, 109, 186102.	7.8	82
8	Roughness picture of friction in dry nanoscale contacts. <i>Physical Review B</i> , 2010, 81, .	3.2	79
9	Atomistic mechanisms of amorphization during nanoindentation of SiC: A molecular dynamics study. <i>Physical Review B</i> , 2005, 71, .	3.2	62
10	Multimillion-atom nanoindentation simulation of crystalline silicon carbide: Orientation dependence and anisotropic pileup. <i>Journal of Applied Physics</i> , 2007, 102, .	2.5	62
11	Green-Kubo relation for friction at liquid-solid interfaces. <i>Physical Review E</i> , 2014, 89, 032119.	2.1	60
12	Effects of Interfacial Bonding on Friction and Wear at Silica/Silica Interfaces. <i>Tribology Letters</i> , 2014, 56, 481-490.	2.6	57
13	Effect of Grain Boundary Stresses on Sink Strength. <i>Materials Research Letters</i> , 2014, 2, 100-106.	8.7	51
14	Energy barriers for point-defect reactions in $3C$ -SiC. <i>Physical Review B</i> , 2013, 88, .	3.2	50
15	Self-nanoscaling of the soft magnetic phase in bulk SmCo/Fe nanocomposite magnets. <i>Journal of Materials Science</i> , 2011, 46, 6065-6074.	3.7	49
16	Load and Time Dependence of Interfacial Chemical Bond-Induced Friction at the Nanoscale. <i>Physical Review Letters</i> , 2017, 118, 076103.	7.8	48
17	Simultaneous enhancement of toughness, ductility, and strength of nanocrystalline ceramics at high strain-rates. <i>Applied Physics Letters</i> , 2007, 90, 181926.	3.3	47
18	Radiation-induced segregation in a ceramic. <i>Nature Materials</i> , 2020, 19, 992-998.	27.5	47

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19	Dislocation controlled wear in single crystal silicon carbide. Journal of Materials Science, 2013, 48, 1593-1603.	3.7	46
20	Ab initio based rate theory model of radiation induced amorphization in $\hat{1}^2$ -SiC. Journal of Nuclear Materials, 2011, 414, 431-439.	2.7	44
21	Experimental and ab initio study of enhanced resistance to amorphization of nanocrystalline silicon carbide under electron irradiation. Journal of Nuclear Materials, 2014, 445, 181-189.	2.7	44
22	Effect of interfaces on the nearby Brownian motion. Nature Communications, 2015, 6, 8558.	12.8	39
23	Plasticity without dislocations in a polycrystalline intermetallic. Nature Communications, 2019, 10, 3587.	12.8	38
24	Energetics and structure of $\hat{1}^2$ tilt grain boundaries in SiC. Modelling and Simulation in Materials Science and Engineering, 2010, 18, 075009.	2.0	36
25	Carbon tri-interstitial defect: A model for the $D_{\text{center}}$ . Physical Review B, 2012, 86, .	3.2	33
26	Morphology and mechanical properties of nanocrystalline Cu/Ag alloy. Journal of Materials Science, 2017, 52, 4555-4567.	3.7	33
27	Massive Vacancy Concentration Yields Strong Room-Temperature Ferromagnetism in Two-Dimensional ZnO. Nano Letters, 2019, 19, 7085-7092.	9.1	31
28	Temperature and irradiation species dependence of radiation response of nanocrystalline silicon carbide. Journal of Materials Research, 2014, 29, 2871-2880.	2.6	30
29	Investigation of the Role of Polysaccharide in the Dolomite Growth at Low Temperature by Using Atomistic Simulations. Langmuir, 2015, 31, 10435-10442.	3.5	29
30	Friction model for single-asperity elastic-plastic contacts. Physical Review B, 2012, 86, .	3.2	28
31	Analytical Model for Plowing Friction at Nanoscale. Tribology Letters, 2012, 45, 417-426.	2.6	27
32	Origin of the isotope effect on solid friction. Physical Review B, 2009, 80, .	3.2	24
33	Role of recombination kinetics and grain size in radiation-induced amorphization. Physical Review B, 2012, 86, .	3.2	24
34	Unit Cell Level Thickness Control of Single-Crystalline Zinc Oxide Nanosheets Enabled by Electrical Double-Layer Confinement. Langmuir, 2017, 33, 7708-7714.	3.5	24
35	Corrosion of Si, C, and SiC in molten salt. Corrosion Science, 2019, 146, 1-9.	6.6	24
36	Structures and stabilities of small carbon interstitial clusters in cubic silicon carbide. Acta Materialia, 2014, 62, 162-172.	7.9	22

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37	Plasticityâ€Controlled Friction and Wear in Nanocrystalline $\text{SiC}$ . Journal of the American Ceramic Society, 2014, 97, 1194-1201.	3.8	21
38	Bioinspired Synthesis of Quasi-Two-Dimensional Monocrystalline Oxides. Chemistry of Materials, 2019, 31, 9040-9048.	6.7	21
39	Radiation interaction with tilt grain boundaries in $\hat{1}^2\text{-SiC}$ . Journal of Applied Physics, 2012, 111, .	2.5	20
40	Wear-induced microstructural evolution of nanocrystalline aluminum and the role of zirconium dopants. Acta Materialia, 2020, 200, 432-441.	7.9	20
41	Size Dependence of Nanoscale Wear of Silicon Carbide. ACS Applied Materials & Interfaces, 2017, 9, 1929-1940.	8.0	19
42	High toughness carbon-nanotube-reinforced ceramics via ion-beam engineering of interfaces. Carbon, 2020, 163, 169-177.	10.3	19
43	Crystal structures of laihunite and intermediate phases between laihunite-1M and fayalite: Z-contrast imaging and ab initio study. American Mineralogist, 2014, 99, 881-889.	1.9	17
44	Physical Origin of the Mechanochemical Coupling at Interfaces. Physical Review Letters, 2021, 126, 076001.	7.8	17
45	The Multiple Roles of Small-Angle Tilt Grain Boundaries in Annihilating Radiation Damage in $\text{SiC}$ . Scientific Reports, 2017, 7, 42358.	3.3	15
46	Small-Angle Twist Grain Boundaries as Sinks for Point Defects. Scientific Reports, 2018, 8, 3736.	3.3	14
47	Sensitivity of $\text{SiC}$ Grain Boundaries to Oxidation. Journal of Physical Chemistry C, 2019, 123, 11546-11554.	3.1	14
48	Chemical aging of large-scale randomly rough frictional contacts. Physical Review E, 2018, 98, 023001.	2.1	12
49	Memory Distance for Interfacial Chemical Bond-Induced Friction at the Nanoscale. ACS Nano, 2019, 13, 7425-7434.	14.6	12
50	Linear Aging Behavior at Short Timescales in Nanoscale Contacts. Physical Review Letters, 2020, 124, 026801.	7.8	12
51	Multiphysics model of chemical aging in frictional contacts. Physical Review Materials, 2018, 2, .	2.4	12
52	Z-contrast imaging and ab initio study on "d" superstructure in sedimentary dolomite. American Mineralogist, 2014, 99, 1413-1419.	1.9	11
53	First-principles studies on molecular beam epitaxy growth of $\text{GaAs}$ . Physical Review B, 2015, 92, .	3.2	11
54	First-principles study of Cs and Sr sorption on carbon structures. Journal of Applied Physics, 2012, 111, .	2.5	10

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55	Radiation-induced mobility of small defect clusters in covalent materials. <i>Physical Review B</i> , 2016, 94, .	3.2	10
56	Mechanical Properties of Structure-Tunable, Vapor-Deposited TPD Glass. <i>Journal of Physical Chemistry C</i> , 2018, 122, 27775-27781.	3.1	10
57	Effects of point defects on oxidation of 3C-SiC. <i>Journal of Nuclear Materials</i> , 2020, 538, 152308.	2.7	10
58	An Unexpected Role of H During SiC Corrosion in Water. <i>Journal of Physical Chemistry C</i> , 2020, 124, 9394-9400.	3.1	10
59	Deciphering water-solid reactions during hydrothermal corrosion of SiC. <i>Acta Materialia</i> , 2021, 209, 116803.	7.9	10
60	Defect recovery processes in Cr-B binary and Cr-Al-B MAB phases: structure-dependent radiation tolerance. <i>Acta Materialia</i> , 2022, 235, 118099.	7.9	10
61	Machine Learning Prediction of the Critical Cooling Rate for Metallic Glasses from Expanded Datasets and Elemental Features. <i>Chemistry of Materials</i> , 2022, 34, 2945-2954.	6.7	9
62	Toward Demystifying the Mohs Hardness Scale. <i>Journal of the American Ceramic Society</i> , 2015, 98, 2681-2688.	3.8	8
63	Structural signatures for thermodynamic stability in vitreous silica: Insight from machine learning and molecular dynamics simulations. <i>Physical Review Materials</i> , 2021, 5, .	2.4	7
64	Enhancing the phase stability of ceramics under radiation via multilayer engineering. <i>Science Advances</i> , 2021, 7, .	10.3	6
65	Exploration of characteristic temperature contributions to metallic glass forming ability. <i>Computational Materials Science</i> , 2021, 196, 110494.	3.0	6
66	Chemical Creep and Its Effect on Contact Aging. , 2022, 4, 1368-1373.		6
67	Defect chemistry of Cr-B binary and Cr-Al-B MAB phases: Effects of covalently bonded B networks. <i>Physical Review Materials</i> , 2021, 5, .	2.4	5
68	Molecular dynamic characteristic temperatures for predicting metallic glass forming ability. <i>Computational Materials Science</i> , 2022, 201, 110877.	3.0	4
69	Reconfiguration of Amorphous Complex Oxides: A Route to a Broad Range of Assembly Phenomena, Hybrid Materials, and Novel Functionalities. <i>Small</i> , 2022, 18, e2105424.	10.0	4
70	High-Resolution Scanning Transmission Electron Microscopy Study of Black Spot Defects in Ion Irradiated Silicon Carbide. <i>Microscopy and Microanalysis</i> , 2014, 20, 1824-1825.	0.4	3
71	Cs diffusion in SiC high-energy grain boundaries. <i>Journal of Applied Physics</i> , 2017, 122, 105901.	2.5	3
72	Rheology and structure of suspensions of spherocylinders via Brownian dynamics simulations. <i>Journal of Rheology</i> , 2021, 65, 273-288.	2.6	3

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73	Effect of growth twins on strength and microstructural evolution of nanocrystalline aluminum. Journal of Materials Science, 2021, 56, 14587-14597.	3.7	2
74	Modified band alignment method to obtain hybrid functional accuracy from standard DFT: Application to defects in highly mismatched III-V:Bi alloys. Physical Review Materials, 2021, 5, .	2.4	2
75	Atomic Resolution Imaging of Black Spot Defects in Ion Irradiated Silicon Carbide. Microscopy and Microanalysis, 2015, 21, 1337-1338.	0.4	1
76	A Molecular Dynamics Simulation of High Strain-rate Deformation in Nanocrystalline Silicon Carbide. Materials Research Society Symposia Proceedings, 2007, 1021, 1.	0.1	0
77	Morphology of Amorphous Pockets in SiC Irradiated with 1 MeV Kr Ions. Microscopy and Microanalysis, 2014, 20, 1830-1831.	0.4	0
78	In situ Transmission Electron Microscopy of Room-temperature Plastic Deformation and Recovery in Thin 3C-SiC. Microscopy and Microanalysis, 2018, 24, 1834-1835.	0.4	0
79	Microstructural Evolution of Ultra-Fine Grained (UFGs) Aluminum in Tribological Contacts. Minerals, Metals and Materials Series, 2021, , 257-262.	0.4	0