

Jani Kotakoski

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

144
papers

9,662
citations

43
h-index

97
g-index

153
ext. papers

10,873
ext. citations

6.8
avg, IF

6.42
L-index

#	Paper	IF	Citations
144	Two-step implantation of gold into graphene. <i>2D Materials</i> , 2022 , 9, 025011	5.9	1
143	Indirect measurement of the carbon adatom migration barrier on graphene. <i>Carbon</i> , 2022 , 196, 596-601	10.4	1
142	Towards Exotic Layered Materials: 2D Cuprous Iodide. <i>Advanced Materials</i> , 2021 , e2106922	24	3
141	Carbon Nano-onions: Potassium Intercalation and Reductive Covalent Functionalization. <i>Journal of the American Chemical Society</i> , 2021 , 143, 18997-19007	16.4	0
140	The morphology of doubly-clamped graphene nanoribbons. <i>2D Materials</i> , 2021 , 8, 025035	5.9	1
139	Direct visualization of local deformations in suspended few-layer graphene membranes by coupled in situ atomic force and scanning electron microscopy. <i>Applied Physics Letters</i> , 2021 , 118, 103104	3.4	2
138	Chemistry at graphene edges in the electron microscope. <i>2D Materials</i> , 2021 , 8, 035023	5.9	4
137	Atomic-Level Structural Engineering of Graphene on a Mesoscopic Scale. <i>Nano Letters</i> , 2021 , 21, 5179-5185	18.5	8
136	Single indium atoms and few-atom indium clusters anchored onto graphene via silicon heteroatoms. <i>Microscopy and Microanalysis</i> , 2021 , 27, 3346-3347	0.5	
135	Temperature-dependent displacement cross section of graphene and its impurities: measuring the carbon adatom migration barrier. <i>Microscopy and Microanalysis</i> , 2021 , 27, 3340-3340	0.5	
134	Atomic and electronic structure of graphene 2021 , 15-26		
133	Step-By-Step Atomic Insights into Structural Reordering from 2D to 3D MoS ₂ . <i>Advanced Functional Materials</i> , 2021 , 31, 2008395	15.6	4
132	Highly efficient bilateral doping of single-walled carbon nanotubes. <i>Journal of Materials Chemistry C</i> , 2021 , 9, 4514-4521	7.1	4
131	Single Indium Atoms and Few-Atom Indium Clusters Anchored onto Graphene via Silicon Heteroatoms. <i>ACS Nano</i> , 2021 , 15, 14373-14383	16.7	6
130	Diffraction of 80 eV hydrogen through suspended graphene. <i>Journal of Physics: Conference Series</i> , 2020 , 1412, 202036	0.3	
129	Atomistic Understanding of Damage and Beam-driven Dynamics in 2D Materials. <i>Microscopy and Microanalysis</i> , 2020 , 26, 542-543	0.5	
128	Transformation and Evaporation of Surface Adsorbents on a Graphene "Hot Plate". <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 26313-26319	9.5	2

127	Scalable growth of single-walled carbon nanotubes with a highly uniform structure. <i>Nanoscale</i> , 2020 , 12, 12263-12267	7.7	8
126	Process Pathway Controlled Evolution of Phase and Van-der-Waals Epitaxy in In/In ₂ O ₃ on Graphene Heterostructures. <i>Advanced Functional Materials</i> , 2020 , 30, 2003300	15.6	4
125	Vanishing influence of the band gap on the charge exchange of slow highly charged ions in freestanding single-layer MoS ₂ . <i>Physical Review B</i> , 2020 , 102,	3.3	8
124	CuAu, a hexagonal two-dimensional metal. <i>2D Materials</i> , 2020 , 7, 045017	5.9	5
123	Kiruna-Type Ore as a Novel Precursor for Large-Scale Production of Small Uniform Iron Oxide Nanoparticles. <i>Journal of Nanoscience and Nanotechnology</i> , 2020 , 20, 6525-6531	1.3	
122	2D Noble Gas Crystals Encapsulated in Few-layer Graphene. <i>Microscopy and Microanalysis</i> , 2020 , 26, 1086-1089	10.9	1
121	Hybrid Low-Dimensional Carbon Allotropes Formed in Gas Phase. <i>Advanced Functional Materials</i> , 2020 , 30, 2005016	15.6	5
120	Quantitative Measurement and Utilization of Electron Irradiation Effects in 2D Materials. <i>Microscopy and Microanalysis</i> , 2020 , 26, 166-166	0.5	
119	Atomic-Scale Carving of Nanopores into a van der Waals Heterostructure with Slow Highly Charged Ions. <i>ACS Nano</i> , 2020 , 14, 10536-10543	16.7	10
118	Energy deposition of highly charged ions transmitted through single layer MoS ₂ . <i>Journal of Physics: Conference Series</i> , 2020 , 1412, 162018	0.3	
117	Cluster Superlattice Membranes. <i>ACS Nano</i> , 2020 , 14, 13629-13637	16.7	1
116	Substitutional Si impurities in monolayer hexagonal boron nitride. <i>Applied Physics Letters</i> , 2019 , 115, 071604	3.4	12
115	Quantifying Elastic and Inelastic Electron Irradiation Damage in Transmission Electron Microscopy of 2D Materials. <i>Microscopy and Microanalysis</i> , 2019 , 25, 454-455	0.5	0
114	Atomic-scale Chemical Manipulation of Materials in the Scanning Transmission Electron Microscope under Controlled Atmospheres. <i>Microscopy and Microanalysis</i> , 2019 , 25, 1398-1399	0.5	
113	Substitutional Si Doping of Graphene and Nanotubes through Ion Irradiation-Induced Vacancies. <i>Microscopy and Microanalysis</i> , 2019 , 25, 1574-1575	0.5	
112	Enhanced Tunneling in a Hybrid of Single-Walled Carbon Nanotubes and Graphene. <i>ACS Nano</i> , 2019 , 13, 11522-11529	16.7	13
111	Influence of temperature on the displacement threshold energy in graphene. <i>Scientific Reports</i> , 2019 , 9, 12981	4.9	4
110	Direct visualization of the 3D structure of silicon impurities in graphene. <i>Applied Physics Letters</i> , 2019 , 114, 053102	3.4	12

109	Engineering single-atom dynamics with electron irradiation. <i>Science Advances</i> , 2019 , 5, eaav2252	14.3	39
108	Quantifying transmission electron microscopy irradiation effects using two-dimensional materials. <i>Nature Reviews Physics</i> , 2019 , 1, 397-405	23.6	45
107	Scanning transmission electron microscopy under controlled low-pressure atmospheres. <i>Ultramicroscopy</i> , 2019 , 203, 76-81	3.1	18
106	Silicon Substitution in Nanotubes and Graphene via Intermittent Vacancies. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 13136-13140	3.8	15
105	Coherent diffraction of hydrogen through the 246 pm lattice of graphene. <i>New Journal of Physics</i> , 2019 , 21, 033004	2.9	5
104	Silicon Substitution in Monolayer Hexagonal Boron Nitride. <i>Microscopy and Microanalysis</i> , 2019 , 25, 2082-2083		
103	Electron-Beam Manipulation of Silicon Impurities in Single-Walled Carbon Nanotubes. <i>Advanced Functional Materials</i> , 2019 , 29, 1901327	15.6	5
102	Direct imaging of light-element impurities in graphene reveals triple-coordinated oxygen. <i>Nature Communications</i> , 2019 , 10, 4570	17.4	21
101	Electron-Beam Manipulation of Lattice Impurities in Graphene and Single-Walled Carbon Nanotubes. <i>Microscopy and Microanalysis</i> , 2019 , 25, 938-939	0.5	
100	Patterned Ultra-Thin Gold Nanostructures on Graphene. <i>Microscopy and Microanalysis</i> , 2019 , 25, 1530-1531		1
99	Efficient first principles simulation of electron scattering factors for transmission electron microscopy. <i>Ultramicroscopy</i> , 2019 , 197, 16-22	3.1	22
98	Perforating Freestanding Molybdenum Disulfide Monolayers with Highly Charged Ions. <i>Journal of Physical Chemistry Letters</i> , 2019 , 10, 904-910	6.4	28
97	Atomic Structure of Intrinsic and Electron-Irradiation-Induced Defects in MoTe. <i>Chemistry of Materials</i> , 2018 , 30, 1230-1238	9.6	35
96	Chemical Oxidation of Graphite: Evolution of the Structure and Properties. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 929-935	3.8	30
95	Implanting Germanium into Graphene. <i>ACS Nano</i> , 2018 , 12, 4641-4647	16.7	56
94	Atomic-Scale in Situ Observations of Crystallization and Restructuring Processes in Two-Dimensional MoS Films. <i>ACS Nano</i> , 2018 , 12, 8758-8769	16.7	39
93	Atomic-Scale Deformations at the Interface of a Mixed-Dimensional van der Waals Heterostructure. <i>ACS Nano</i> , 2018 , 12, 8512-8519	16.7	13
92	In situ control of graphene ripples and strain in the electron microscope. <i>Npj 2D Materials and Applications</i> , 2018 , 2,	8.8	13

91	Intrinsic core level photoemission of suspended monolayer graphene. <i>Physical Review Materials</i> , 2018 , 2,	3.2	9
90	Revealing the 3D structure of graphene defects. <i>2D Materials</i> , 2018 , 5, 045029	5.9	12
89	2D Material Science: Defect Engineering by Particle Irradiation. <i>Materials</i> , 2018 , 11,	3.5	42
88	Graphene hybrids and extended defects: Revealing 3D structures and new insights to radiation damage. <i>Microscopy and Microanalysis</i> , 2018 , 24, 1582-1583	0.5	
87	Electron-Beam Manipulation of Silicon Dopants in Graphene. <i>Nano Letters</i> , 2018 , 18, 5319-5323	11.5	64
86	Defect engineering of single- and few-layer MoS ₂ by swift heavy ion irradiation. <i>2D Materials</i> , 2017 , 4, 015034	5.9	41
85	Unraveling the 3D Atomic Structure of a Suspended Graphene/hBN van der Waals Heterostructure. <i>Nano Letters</i> , 2017 , 17, 1409-1416	11.5	71
84	Single-atom spectroscopy of phosphorus dopants implanted into graphene. <i>2D Materials</i> , 2017 , 4, 0210139	3.9	54
83	Manipulating low-dimensional materials down to the level of single atoms with electron irradiation. <i>Ultramicroscopy</i> , 2017 , 180, 163-172	3.1	101
82	Introducing Overlapping Grain Boundaries in Chemical Vapor Deposited Hexagonal Boron Nitride Monolayer Films. <i>ACS Nano</i> , 2017 , 11, 4521-4527	16.7	27
81	Buckyball sandwiches. <i>Science Advances</i> , 2017 , 3, e1700176	14.3	38
80	Grain boundary-mediated nanopores in molybdenum disulfide grown by chemical vapor deposition. <i>Nanoscale</i> , 2017 , 9, 1591-1598	7.7	28
79	Creating nanoporous graphene with swift heavy ions. <i>Carbon</i> , 2017 , 114, 511-518	10.4	43
78	Progress in electronics and photonics with nanomaterials. <i>Vacuum</i> , 2017 , 146, 304-307	3.7	21
77	Engineering and modifying two-dimensional materials by electron beams. <i>MRS Bulletin</i> , 2017 , 42, 667-676	3.2	48
76	Towards atomically precise manipulation of 2D nanostructures in the electron microscope. <i>2D Materials</i> , 2017 , 4, 042004	5.9	52
75	Cleaning graphene: Comparing heat treatments in air and in vacuum. <i>Physica Status Solidi - Rapid Research Letters</i> , 2017 , 11, 1700124	2.5	39
74	Understanding and Exploiting the Interaction of Electron Beams With Low-dimensional Materials - From Controlled Atomic-level Manipulation to Circumventing Radiation Damage. <i>Microscopy and Microanalysis</i> , 2017 , 23, 196-197	0.5	1

73	Structure and Energetics of Embedded Si Patterns in Graphene. <i>Physica Status Solidi (B): Basic Research</i> , 2017 , 254, 1700188	1.3	3
72	Structure and electronic states of a graphene double vacancy with an embedded Si dopant. <i>Journal of Chemical Physics</i> , 2017 , 147, 194702	3.9	6
71	Computational insights and the observation of SiC nanograin assembly: towards 2D silicon carbide. <i>Scientific Reports</i> , 2017 , 7, 4399	4.9	48
70	A new detection scheme for van der Waals heterostructures, imaging individual fullerenes between graphene sheets, and controlling the vacuum in scanning transmission electron microscopy. <i>Microscopy and Microanalysis</i> , 2017 , 23, 460-461	0.5	8
69	Structural Changes in 2D Materials Due to Scattering of Light Ions. <i>Nanoscience and Technology</i> , 2016 , 63-88	0.6	
68	Isotope analysis in the transmission electron microscope. <i>Nature Communications</i> , 2016 , 7, 13040	17.4	47
67	Charge transfer sensitivity and dose efficiency with pixilated detectors and ptychographic phase contrast imaging in STEM 2016 , 721-722		1
66	Visualising the strain distribution in suspended two-dimensional materials under local deformation. <i>Scientific Reports</i> , 2016 , 6, 28485	4.9	29
65	Comment on "Temperature dependence of atomic vibrations in mono-layer graphene" [J. Appl. Phys. 118, 074302 (2015)]. <i>Journal of Applied Physics</i> , 2016 , 119, 066101	2.5	2
64	Nanopore fabrication and characterization by helium ion microscopy. <i>Applied Physics Letters</i> , 2016 , 108, 163103	3.4	72
63	Confined linear carbon chains as a route to bulk carbon. <i>Nature Materials</i> , 2016 , 15, 634-9	27	250
62	Raman characterization of platinum diselenide thin films. <i>2D Materials</i> , 2016 , 3, 021004	5.9	138
61	Potassium intercalated multiwalled carbon nanotubes. <i>Carbon</i> , 2016 , 105, 90-95	10.4	14
60	High-Performance Hybrid Electronic Devices from Layered PtSe Films Grown at Low Temperature. <i>ACS Nano</i> , 2016 , 10, 9550-9558	16.7	245
59	Comment on "Interfacial carbon nanoplatelet formation by ion irradiation of graphene on iridium(111)". <i>ACS Nano</i> , 2015 , 9, 4664-5	16.7	7
58	Toward Two-Dimensional All-Carbon Heterostructures via Ion Beam Patterning of Single-Layer Graphene. <i>Nano Letters</i> , 2015 , 15, 5944-9	11.5	73
57	Towards weighing individual atoms by high-angle scattering of electrons. <i>Ultramicroscopy</i> , 2015 , 151, 23-30	3.1	11
56	An atomically thin matter-wave beamsplitter. <i>Nature Nanotechnology</i> , 2015 , 10, 845-8	28.7	36

55	Exploring Low-dimensional Carbon Materials by High-resolution Electron and Scanned Probe Microscopy. <i>Microscopy and Microanalysis</i> , 2015 , 21, 1147-1148	0.5	
54	Xe irradiation of graphene on Ir(111): From trapping to blistering. <i>Physical Review B</i> , 2015 , 92,	3.3	24
53	Atomic Structure of Amorphous 2D Carbon Structures as Revealed by Scanning Transmission Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2015 , 21, 997-998	0.5	
52	A journey from order to disorder - atom by atom transformation from graphene to a 2D carbon glass. <i>Scientific Reports</i> , 2014 , 4, 4060	4.9	53
51	Silicon-carbon bond inversions driven by 60-keV electrons in graphene. <i>Physical Review Letters</i> , 2014 , 113, 115501	7.4	99
50	Atomic structure and energetics of large vacancies in graphene. <i>Physical Review B</i> , 2014 , 89,	3.3	27
49	Imaging atomic-level random walk of a point defect in graphene. <i>Nature Communications</i> , 2014 , 5, 3991	17.4	93
48	Charge transport in polycrystalline graphene: challenges and opportunities. <i>Advanced Materials</i> , 2014 , 26, 5079-94	24	137
47	Atomic structure from large-area, low-dose exposures of materials: a new route to circumvent radiation damage. <i>Ultramicroscopy</i> , 2014 , 145, 13-21	3.1	28
46	Atom-by-Atom STEM Investigation of Defect Engineering in Graphene. <i>Microscopy and Microanalysis</i> , 2014 , 20, 1736-1737	0.5	2
45	Interfacial carbon nanoplatelet formation by ion irradiation of graphene on iridium(111). <i>ACS Nano</i> , 2014 , 8, 12208-18	16.7	23
44	Impact of graphene polycrystallinity on the performance of graphene field-effect transistors. <i>Applied Physics Letters</i> , 2014 , 104, 043509	3.4	6
43	Nitrogen controlled iron catalyst phase during carbon nanotube growth. <i>Applied Physics Letters</i> , 2014 , 105, 143111	3.4	20
42	Irradiation-induced Modifications and Beam-driven Dynamics in Low-dimensional Materials. <i>Microscopy and Microanalysis</i> , 2014 , 20, 1726-1727	0.5	
41	Structural manipulation of the graphene/metal interface with Ar+ irradiation. <i>Physical Review B</i> , 2013 , 88,	3.3	23
40	Defects in bilayer silica and graphene: common trends in diverse hexagonal two-dimensional systems. <i>Scientific Reports</i> , 2013 , 3, 3482	4.9	71
39	Inclusion of radiation damage dynamics in high-resolution transmission electron microscopy image simulations: The example of graphene. <i>Physical Review B</i> , 2013 , 87,	3.3	26
38	Scaling properties of charge transport in polycrystalline graphene. <i>Nano Letters</i> , 2013 , 13, 1730-5	11.5	108

37	Ion impacts on graphene/Ir(111): interface channeling, vacancy funnels, and a nanomesh. <i>Nano Letters</i> , 2013 , 13, 1948-55	11.5	73
36	Probing from both sides: reshaping the graphene landscape via face-to-face dual-probe microscopy. <i>Nano Letters</i> , 2013 , 13, 1934-40	11.5	27
35	Atomistic description of electron beam damage in nitrogen-doped graphene and single-walled carbon nanotubes. <i>ACS Nano</i> , 2012 , 6, 8837-46	16.7	101
34	Two-dimensional transition metal dichalcogenides under electron irradiation: defect production and doping. <i>Physical Review Letters</i> , 2012 , 109, 035503	7.4	768
33	Accurate measurement of electron beam induced displacement cross sections for single-layer graphene. <i>Physical Review Letters</i> , 2012 , 108, 196102	7.4	326
32	Mechanical properties of polycrystalline graphene based on a realistic atomistic model. <i>Physical Review B</i> , 2012 , 85,	3.3	148
31	Stability of graphene edges under electron beam: equilibrium energetics versus dynamic effects. <i>ACS Nano</i> , 2012 , 6, 671-6	16.7	104
30	Direct imaging of a two-dimensional silica glass on graphene. <i>Nano Letters</i> , 2012 , 12, 1081-6	11.5	206
29	Atom-by-atom observation of grain boundary migration in graphene. <i>Nano Letters</i> , 2012 , 12, 3168-73	11.5	154
28	Atomic-scale effects behind structural instabilities in Si lamellae during ion beam thinning. <i>AIP Advances</i> , 2012 , 2, 012186	1.5	7
27	Ion irradiation tolerance of graphene as studied by atomistic simulations. <i>Applied Physics Letters</i> , 2012 , 100, 233108	3.4	39
26	Quantitative Atomic-resolution Imaging and Spectroscopy of a 2D Silica Glass. <i>Microscopy and Microanalysis</i> , 2012 , 18, 340-341	0.5	
25	Imaging the Atoms in a Two-Dimensional Silica Glass on Graphene. <i>Microscopy and Microanalysis</i> , 2012 , 18, 1496-1497	0.5	
24	Quantitative Analysis of Electron Beam-Induced Destruction of Graphene Membranes under an Electron Microscope. <i>Microscopy and Microanalysis</i> , 2012 , 18, 1500-1501	0.5	
23	Atomistic simulations of the implantation of low-energy boron and nitrogen ions into graphene. <i>Physical Review B</i> , 2011 , 83,	3.3	114
22	Cutting and controlled modification of graphene with ion beams. <i>Nanotechnology</i> , 2011 , 22, 175306	3.4	119
21	From point defects in graphene to two-dimensional amorphous carbon. <i>Physical Review Letters</i> , 2011 , 106, 105505	7.4	582
20	Structural defects in graphene. <i>ACS Nano</i> , 2011 , 5, 26-41	16.7	2388

19	Stone-Wales-type transformations in carbon nanostructures driven by electron irradiation. <i>Physical Review B</i> , 2011 , 83,	3.3	199
18	Production of defects in hexagonal boron nitride monolayer under ion irradiation. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2011 , 269, 1327-1331	1.2	43
17	Finite-size effects in the phonon density of states of nanostructured germanium: A comparative study of nanoparticles, nanocrystals, nanoglasses, and bulk phases. <i>Physical Review B</i> , 2011 , 83,	3.3	44
16	Effects of ion bombardment on a two-dimensional target: Atomistic simulations of graphene irradiation. <i>Physical Review B</i> , 2010 , 81,	3.3	303
15	Nanomachining Graphene with Ion Irradiation. <i>Materials Research Society Symposia Proceedings</i> , 2010 , 1259, 1		1
14	Electron knock-on damage in hexagonal boron nitride monolayers. <i>Physical Review B</i> , 2010 , 82,	3.3	212
13	Novel high pressure structures of polymeric nitrogen. <i>Physical Review Letters</i> , 2009 , 102, 065501	7.4	181
12	The diffusion of carbon atoms inside carbon nanotubes. <i>New Journal of Physics</i> , 2008 , 10, 023022	2.9	38
11	First-principles calculations on solid nitrogen: A comparative study of high-pressure phases. <i>Physical Review B</i> , 2008 , 77,	3.3	31
10	Atomistic simulations of irradiation effects in carbon nanotubes: an overview. <i>Radiation Effects and Defects in Solids</i> , 2007 , 162, 157-169	0.9	14
9	Relative abundance of single and double vacancies in irradiated single-walled carbon nanotubes. <i>Applied Physics Letters</i> , 2007 , 91, 173109	3.4	41
8	Kinetic Monte Carlo Simulations of the Response of Carbon Nanotubes to Electron Irradiation. <i>Journal of Computational and Theoretical Nanoscience</i> , 2007 , 4, 1153-1159	0.3	17
7	Energetics, structure, and long-range interaction of vacancy-type defects in carbon nanotubes: Atomistic simulations. <i>Physical Review B</i> , 2006 , 74,	3.3	178
6	Binding a carbon nanotube to the Si(100) surface using ion irradiation—An atomistic simulation study. <i>New Journal of Physics</i> , 2006 , 8, 115-115	2.9	5
5	A molecular dynamics study of the clustering of implanted potassium in multiwalled carbon nanotubes. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2005 , 240, 810-818	1.2	14
4	Irradiation-assisted substitution of carbon atoms with nitrogen and boron in single-walled carbon nanotubes. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2005 , 228, 31-36	1.2	27
3	A quantitative and comparative study of sputtering yields in Au. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2005 , 239, 331-346	1.2	51
2	Ion irradiation-induced welding of a carbon nanotube to a Si (100) surface. <i>Materials Research Society Symposia Proceedings</i> , 2005 , 908, 1		

- 1 B and N ion implantation into carbon nanotubes: Insight from atomistic simulations. *Physical Review B*, **2005**, 71, 33 84