K-J Tielrooij

List of Publications by Citations

59 papers	5,135 citations	30 h-index	71 g-index
73 ext. papers	6,067 ext. citations	12.9 avg, IF	5.42 L-index

#	Paper	IF	Citations
59	Driven coherent oscillations of a single electron spin in a quantum dot. *Nature*, **2006**, 442, 766-71	50.4	1059
58	Cooperativity in ion hydration. *Science*, **2010**, 328, 1006-9	33.3	491
57	Photoexcitation cascade and multiple hot-carrier generation in graphene. *Nature Physics*, **2013**, 9, 248-252	16.2	403
56	Picosecond photoresponse in van der Waals heterostructures. *Nature Nanotechnology*, **2016**, 11, 42-6	28.7	392
55	Assessment of carrier-multiplication efficiency in bulk PbSe and PbS. *Nature Physics*, **2009**, 5, 811-814	16.2	218
54	Extremely efficient terahertz high-harmonic generation in graphene by hot Dirac fermions. *Nature*, **2018**, 561, 507-511	50.4	205
53	Universal distance-scaling of nonradiative energy transfer to graphene. *Nano Letters*, **2013**, 13, 2030-5	11.5	172
52	Generation of photovoltage in graphene on a femtosecond timescale through efficient carrier heating. *Nature Nanotechnology*, **2015**, 10, 437-43	28.7	159
51	Photo-thermionic effect in vertical graphene heterostructures. *Nature Communications*, **2016**, 7, 12174	17.4	130
50	Dielectric relaxation dynamics of water in model membranes probed by terahertz spectroscopy. *Biophysical Journal*, **2009**, 97, 2484-92	2.9	124
49	Complex formation in aqueous trimethylamine-N-oxide (TMAO) solutions. *Journal of Physical Chemistry B*, **2012**, 116, 4783-95	3.4	111
48	Influence of concentration and temperature on the dynamics of water in the hydrophobic hydration shell of tetramethylurea. *Journal of the American Chemical Society*, **2010**, 132, 15671-8	16.4	109
47	Thermodynamic picture of ultrafast charge transport in graphene. *Nature Communications*, **2015**, 6, 7655	17.4	100
46	Experimental signature of phonon-mediated spin relaxation in a two-electron quantum dot. *Physical Review Letters*, **2007**, 98, 126601	7.4	95
45	Anisotropic water reorientation around ions. *Journal of Physical Chemistry B*, **2011**, 115, 12638-47	3.4	94
44	Out-of-plane heat transfer in van der Waals stacks through electron-hyperbolic phonon coupling. *Nature Nanotechnology*, **2018**, 13, 41-46	28.7	87
43	Electrical control of optical emitter relaxation pathways enabled by graphene. *Nature Physics*, **2015**, 11, 281-287	16.2	85

42	Structure dynamics of the proton in liquid water probed with terahertz time-domain spectroscopy. *Physical Review Letters*, **2009**, 102, 198303	7.4	84
41	Fast and Sensitive Terahertz Detection Using an Antenna-Integrated Graphene pn Junction. *Nano Letters*, **2019**, 19, 2765-2773	11.5	82
40	Strong temperature dependence of water reorientation in hydrophobic hydration shells. *Journal of Chemical Physics*, **2009**, 130, 214511	3.9	81
39	Competing ultrafast energy relaxation pathways in photoexcited graphene. *Nano Letters*, **2014**, 14, 5839-45	11.5	71
38	Photoexcited carrier dynamics and impact-excitation cascade in graphene. *Physical Review B*, **2013**, 87,	3.3	63
37	The ultrafast dynamics and conductivity of photoexcited graphene at different Fermi energies. *Science Advances*, **2018**, 4, eaar5313	14.3	61
36	Hot-carrier photocurrent effects at graphene-metal interfaces. *Journal of Physics Condensed Matter* , **2015**, 27, 164207	1.8	52
35	Reorientation of HDO in liquid H2O at different temperatures: Comparison of first and second order correlation functions. *Chemical Physics Letters*, **2009**, 471, 71-74	2.5	52
34	Phonon-mediated mid-infrared photoresponse of graphene. *Nano Letters*, **2014**, 14, 6374-81	11.5	49
33	Femtosecond study of the effects of ions and hydrophobes on the dynamics of water. *Faraday Discussions*, **2013**, 160, 171-89; discussion 207-24	3.6	49
32	Terahertz Nonlinear Optics of Graphene: From Saturable Absorption to High-Harmonics Generation. *Advanced Optical Materials*, **2020**, 8, 1900771	8.1	48
31	Nano-imaging of intersubband transitions in van der Waals quantum wells. *Nature Nanotechnology*, **2018**, 13, 1035-1041	28.7	45
30	Effect of confinement on proton-transfer reactions in water nanopools. *ChemPhysChem*, **2009**, 10, 245-51	3.2	43
29	Decoupling the effects of defects on efficiency and stability through phosphonates in stable halide perovskite solar cells. *Joule*, **2021**, 5, 1246-1266	27.8	30
28	Super-Planckian Electron Cooling in a van der Waals Stack. *Physical Review Letters*, **2017**, 118, 126804	7.4	26
27	Grating-Graphene Metamaterial as a Platform for Terahertz Nonlinear Photonics. *ACS Nano*, **2021**, 15, 1145-1154	16.7	25
26	Long-lived charge separation following pump-wavelength-dependent ultrafast charge transfer in graphene/WS heterostructures. *Science Advances*, **2021**, 7,	14.3	23
25	Reversible Photochemical Control of Doping Levels in Supported Graphene. *Journal of Physical Chemistry C*, **2017**, 121, 4083-4091	3.8	22

24	Vibrational and orientational dynamics of water in aqueous hydroxide solutions. *Journal of Chemical Physics*, **2011**, 135, 124517	3.9	21
23	Plasmonic antenna coupling to hyperbolic phonon-polaritons for sensitive and fast mid-infrared photodetection with graphene. *Nature Communications*, **2020**, 11, 4872	17.4	19
22	Surface-Specific Spectroscopy of Water at a Potentiostatically Controlled Supported Graphene Monolayer. *Journal of Physical Chemistry C*, **2019**, 123, 24031-24038	3.8	18
21	Ultrathin Eu- and Er-Doped Y2O3 Films with Optimized Optical Properties for Quantum Technologies. *Journal of Physical Chemistry C*, **2019**, 123, 13354-13364	3.8	18
20	Hot carriers in graphene - fundamentals and applications. *Nanoscale*, **2021**, 13, 8376-8411	7.7	15
19	Terahertz Depolarization Effects in Colloidal TiO2 Films Reveal Particle Morphology. *Journal of Physical Chemistry C*, **2014**, 118, 1191-1197	3.8	14
18	Electrical tunability of terahertz nonlinearity in graphene. *Science Advances*, **2021**, 7,	14.3	14
17	Probing ultrafast temperature changes of aqueous solutions with coherent terahertz pulses. *Optics Letters*, **2014**, 39, 1717-20	3	11
16	Vibrational Förster transfer to hydrated protons. *Journal of Chemical Physics*, **2010**, 132, 194504	3.9	8
15	Hot-Carrier Cooling in High-Quality Graphene Is Intrinsically Limited by Optical Phonons. *ACS Nano*, **2021**,	16.7	8
14	TeraHertz Dielectric Relaxation of Biological Water Confined in Model Membranes made of Lyotropic Phospholipids. *Molecular Crystals and Liquid Crystals*, **2009**, 500, 108-117	0.5	7
13	Fast electrical modulation of strong near-field interactions between erbium emitters and graphene. *Nature Communications*, **2020**, 11, 4094	17.4	7
12	Thickness-Dependent Elastic Softening of Few-Layer Free-Standing MoSe. *Advanced Materials*, **2021**, 33, e2008614	24	7
11	High fidelity measurement of singlet–triplet state in a quantum dot. *Physica Status Solidi (B): Basic Research*, **2006**, 243, 3855-3858	1.3	6
10	Kinetic Ionic Permeation and Interfacial Doping of Supported Graphene. *Nano Letters*, **2019**, 19, 9029-9036	11.5	6
9	Electrically Tunable Nonequilibrium Optical Response of Graphene.. *ACS Nano*, **2022**,	16.7	4
8	Highly sensitive, ultrafast photo-thermoelectric graphene THz detector **2018**,		3
7	Fabrication and characterization of large-area suspended MoSe2 crystals down to the monolayer. *JPhys Materials*, **2021**, 4, 046001	4.2	3

List of Publications

6	Terahertz signatures of ultrafast Dirac fermion relaxation at the surface of topological insulators. *Npj Quantum Materials*, **2021**, 6,	5	3
5	Observation of giant and tunable thermal diffusivity of a Dirac fluid at room temperature. *Nature Nanotechnology*, **2021**, 16, 1195-1200	28.7	2
4	Unraveling Heat Transport and Dissipation in Suspended MoSe from Bulk to Monolayer.. *Advanced Materials*, **2022**, e2108352	24	1
3	Ultrafast carrier dynamics in graphene and graphene nanostructures. *Terahertz Science & Technology*, **2020**, 13, 135-148	0.3	
2	Inherent Resistivity of Graphene to Strong THz Fields. *Springer Proceedings in Physics*, **2015**, 623-625	0.2	
1	Hot plasmons make graphene shine. *Nature Materials*, **2021**, 20, 721-722	27	