

Nikolay G Petrik

List of Publications by Year in descending order

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papers

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citations

147726

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138417

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66
all docs

66
docs citations

66
times ranked

3481
citing authors

#	ARTICLE	IF	CITATIONS
1	Role of Water in Electron-Initiated Processes and Radical Chemistry: Issues and Scientific Advances. Chemical Reviews, 2005, 105, 355-390.	23.0	560
2	Crystalline Ice Growth on Pt(111): Observation of a Hydrophobic Water Monolayer. Physical Review Letters, 2005, 95, 166102.	2.9	195
3	No Confinement Needed: Observation of a Metastable Hydrophobic Wetting Two-Layer Ice on Graphene. Journal of the American Chemical Society, 2009, 131, 12838-12844.	6.6	186
4	Interfacial Energy Transfer during Gamma Radiolysis of Water on the Surface of ZrO ₂ and Some Other Oxides. Journal of Physical Chemistry B, 2001, 105, 5935-5944.	1.2	152
5	Laser-stimulated luminescence of yttria-stabilized cubic zirconia crystals. Journal of Applied Physics, 1999, 85, 6770-6776.	1.1	140
6	Chemical Reactivity of Reduced TiO ₂ (110): The Dominant Role of Surface Defects in Oxygen Chemisorption. Journal of Physical Chemistry C, 2009, 113, 12407-12411.	1.5	127
7	Growth rate of crystalline ice and the diffusivity of supercooled water from 126 to 262 K. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14921-14925.	3.3	120
8	Tetraoxygen on Reduced TiO ₂ (110): Observation of a Hydrophobic Water Monolayer. Physical Review Letters, 2008, 100, 196102.	3.3	104
9	Thermal and radiation stability of the hydrated salt minerals epsomite, mirabilite, and natron under Europa environmental conditions. Journal of Geophysical Research, 2001, 106, 3311-3319.	3.3	104
10	Polarization- and Azimuth-Resolved Infrared Spectroscopy of Water on TiO ₂ (110): Anisotropy and the Hydrogen-Bonding Network. Journal of Physical Chemistry Letters, 2012, 3, 778-784.	2.1	91
11	Water as a Catalyst: Imaging Reactions of O ₂ with Partially and Fully Hydroxylated TiO ₂ (110) Surfaces. Journal of Physical Chemistry C, 2009, 113, 1908-1916.	1.5	88
12	Photoinduced Dissociation of O ₂ on Rutile TiO ₂ (110). Journal of Physical Chemistry Letters, 2010, 1, 1758-1762.	2.1	74
13	Thermal and Nonthermal Physicochemical Processes in Nanoscale Films of Amorphous Solid Water. Accounts of Chemical Research, 2012, 45, 33-42.	7.6	68
14	Crystalline ice growth on Pt(111) and Pd(111): Nonwetting growth on a hydrophobic water monolayer. Journal of Chemical Physics, 2007, 126, 114702.	1.2	66
15	Reaction Kinetics of Water Molecules with Oxygen Vacancies on Rutile TiO ₂ (110). Journal of Physical Chemistry C, 2015, 119, 23059-23067.	1.5	66
16	Electron- and Hole-Mediated Reactions in UV-Irradiated O ₂ Adsorbed on Reduced Rutile TiO ₂ (110). Journal of Physical Chemistry C, 2011, 115, 152-164.	1.5	64
17	Hydrogen reactivity on highly-hydroxylated TiO ₂ (110) surfaces prepared via carboxylic acid adsorption and photolysis. Physical Chemistry Chemical Physics, 2012, 14, 3066-3074.	1.3	61
18	Structure and Dynamics of CO ₂ on Rutile TiO ₂ (110)-1 $\bar{1}$ 1. Journal of Physical Chemistry C, 2012, 116, 26322-26334.	1.5	60

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19	Off-Normal CO ₂ Desorption from the Photooxidation of CO on Reduced TiO ₂ (110). Journal of Physical Chemistry Letters, 2010, 1, 2508-2513.	2.1	52
20	Electron-stimulated production of molecular hydrogen at the interfaces of amorphous solid water films on Pt(111). Journal of Chemical Physics, 2004, 121, 3736-3744.	1.2	50
21	Electron-Stimulated Reactions at the Interfaces of Amorphous Solid Water Films Driven by Long-Range Energy Transfer from the Bulk. Physical Review Letters, 2003, 90, 166102.	2.9	48
22	Layer-by-layer growth of thin amorphous solid water films on Pt(111) and Pd(111). Journal of Chemical Physics, 2006, 125, 044713.	1.2	48
23	Electron-Stimulated Oxidation of Thin Water Films Adsorbed on TiO ₂ (110). Journal of Physical Chemistry C, 2007, 111, 16319-16329.	1.5	44
24	Electron-stimulated production of molecular oxygen in amorphous solid water on Pt(111): Precursor transport through the hydrogen bonding network. Journal of Chemical Physics, 2006, 125, 124702.	1.2	43
25	Adsorption Geometry of CO versus Coverage on TiO ₂ (110) from s- and p-Polarized Infrared Spectroscopy. Journal of Physical Chemistry Letters, 2012, 3, 3425-3430.	2.1	43
26	Anticorrelation between Surface and Subsurface Point Defects and the Impact on the Redox Chemistry of TiO ₂ (110). ChemPhysChem, 2015, 16, 313-321.	1.0	41
27	Electron-stimulated sputtering of thin amorphous solid water films on Pt(111). Journal of Chemical Physics, 2005, 123, 054702.	1.2	38
28	Electron-Stimulated Production of Molecular Oxygen in Amorphous Solid Water. Journal of Physical Chemistry B, 2006, 110, 2723-2731.	1.2	37
29	Oxygen Photochemistry on TiO ₂ (110): Recyclable, Photoactive Oxygen Produced by Annealing Adsorbed O ₂ . Journal of Physical Chemistry Letters, 2011, 2, 2790-2796.	2.1	37
30	Hydrogen Bonding, H-D Exchange, and Molecular Mobility in Thin Water Films on $\text{TiO}_2(110)$. Journal of Physical Chemistry Letters, 2011, 2, 2790-2796.	2.9	35
31	Electron-stimulated reactions in thin D ₂ O films on Pt(111) mediated by electron trapping. Journal of Chemical Physics, 2004, 121, 3727-3735.	1.2	34
32	A unique vibrational signature of rotated water monolayers on Pt(111): Predicted and observed. Journal of Chemical Physics, 2011, 134, 204702.	1.2	31
33	Nonthermal Water Splitting on Rutile TiO ₂ : Electron-Stimulated Production of H ₂ and O ₂ in Amorphous Solid Water Films on TiO ₂ (110). Journal of Physical Chemistry C, 2009, 113, 4451-4460.	1.5	29
34	Multiple Nonthermal Reaction Steps for the Photooxidation of CO to CO ₂ on Reduced TiO ₂ (110). Journal of Physical Chemistry Letters, 2013, 4, 344-349.	2.1	28
35	Molecular Water Adsorption and Reactions on $\gamma\text{-Al}_2\text{O}_3(0001)$ and $\gamma\text{-Al}_2\text{O}_3$ Particles. Journal of Physical Chemistry C, 2018, 122, 9540-9551.	1.5	25
36	Binding of Formic Acid on Anatase TiO ₂ (101). Journal of Physical Chemistry C, 2020, 124, 20228-20239.	1.5	24

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37	Probing the photochemistry of chemisorbed oxygen on TiO ₂ (110) with Kr and other co-adsorbates. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 2338-2346.	1.3	23
38	Insights into Acetone Photochemistry on Rutile TiO ₂ (110). 1. Off-Normal CH ₃ Ejection from Acetone Diolate. <i>Journal of Physical Chemistry C</i> , 2015, 119, 12262-12272.	1.5	23
39	Electron-stimulated reactions in layered CO/H ₂ O films: Hydrogen atom diffusion and the sequential hydrogenation of CO to methanol. <i>Journal of Chemical Physics</i> , 2014, 140, 204710.	1.2	21
40	Adsorption and Photodesorption of CO from Charged Point Defects on TiO ₂ (110). <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 4565-4572.	2.1	20
41	Insights into Acetone Photochemistry on Rutile TiO ₂ (110). 2. New Photodesorption Channel with CH ₃ Ejection along the Surface Normal. <i>Journal of Physical Chemistry C</i> , 2015, 119, 12273-12282.	1.5	18
42	Homogeneous Nucleation of Ice in Transiently-Heated, Supercooled Liquid Water Films. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 5736-5743.	2.1	16
43	Observation of Molecular Hydrogen Produced from Bridging Hydroxyls on Anatase TiO ₂ (101). <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 9289-9297.	2.1	16
44	Electron Beam Induced Damage of NaNO ₃ Single Crystals: An Energy, Temperature, and Quantum State Resolved Study. <i>Journal of Physical Chemistry B</i> , 2000, 104, 1563-1571.	1.2	15
45	Diffusion and Photon-Stimulated Desorption of CO on TiO ₂ (110). <i>Journal of Physical Chemistry C</i> , 2018, 122, 15382-15389.	1.5	14
46	Adsorption and Reaction of Methanol on Anatase TiO ₂ (101) Single Crystals and Faceted Nanoparticles. <i>Journal of Physical Chemistry C</i> , 2019, 123, 24133-24145.	1.5	14
47	Homogeneous ice nucleation rates and crystallization kinetics in transiently-heated, supercooled water films from 188 K to 230 K. <i>Journal of Chemical Physics</i> , 2019, 150, 204509.	1.2	14
48	Site-dependent electron-stimulated reactions in water films on TiO ₂ (110). <i>Journal of Chemical Physics</i> , 2007, 127, 224706.	1.2	13
49	Complete Wetting of Pt(111) by Nanoscale Liquid Water Films. <i>Journal of Physical Chemistry Letters</i> , 2016, 7, 541-547.	2.1	12
50	Turning things downside up: Adsorbate induced water flipping on Pt(111). <i>Journal of Chemical Physics</i> , 2014, 141, 18C515.	1.2	11
51	Distance-Dependent Radiation Chemistry: Oxidation versus Hydrogenation of CO in Electron-Irradiated H ₂ O/CO/H ₂ O Ices. <i>Journal of Physical Chemistry C</i> , 2014, 118, 27483-27492.	1.5	11
52	A nanosecond pulsed laser heating system for studying liquid and supercooled liquid films in ultrahigh vacuum. <i>Journal of Chemical Physics</i> , 2016, 144, 164201.	1.2	11
53	Electron-stimulated reactions and O ₂ production in methanol-covered amorphous solid water films. <i>Journal of Chemical Physics</i> , 2009, 130, 104710.	1.2	10
54	Quenching of electron transfer reactions through coadsorption: A study of oxygen photodesorption from TiO ₂ (110). <i>Surface Science</i> , 2016, 652, 183-188.	0.8	10

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55	Conversion of Formic Acid on Single- and Nano-Crystalline Anatase TiO ₂ (101). Journal of Physical Chemistry C, 2021, 125, 7686-7700.	1.5	10
56	Low-Energy Electron-Stimulated Luminescence of Thin H ₂ O and D ₂ O Layers on Pt(111). Journal of Physical Chemistry B, 2005, 109, 15835-15841.	1.2	8
57	Electron-stimulated reactions in nanoscale water films adsorbed on Î±-Al ₂ O ₃ (0001). Physical Chemistry Chemical Physics, 2018, 20, 11634-11642.	1.3	8
58	Crystallization growth rates and front propagation in amorphous solid water films. Journal of Chemical Physics, 2019, 150, 214703.	1.2	6
59	Direct visualization of radiation-induced transformations at alkali halideâ€“air interfaces. Communications Chemistry, 2021, 4, .	2.0	2
60	Absorption of molecular forms of iodine from the gaseous phase by protective paint coatings. Atomic Energy, 1996, 80, 414-418.	0.1	1
61	Communication: Proton exchange in low temperature co-mixed amorphous H ₂ O and D ₂ O films: The effect of the underlying Pt(111) and graphene substrates. Journal of Chemical Physics, 2018, 149, 081104.	1.2	1