

Thomas M Orlando

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/3555413/publications.pdf>

Version: 2024-02-01

92
papers

3,990
citations

147801

31
h-index

123424

61
g-index

94
all docs

94
docs citations

94
times ranked

4761
citing authors

#	ARTICLE	IF	CITATIONS
1	Role of Water in Electron-Initiated Processes and Radical Chemistry: Issues and Scientific Advances. <i>Chemical Reviews</i> , 2005, 105, 355-390.	47.7	560
2	Biomolecular Damage Induced by Ionizing Radiation: The Direct and Indirect Effects of Low-Energy Electrons on DNA. <i>Annual Review of Physical Chemistry</i> , 2015, 66, 379-398.	10.8	347
3	Formation of Graphene Features from Direct Laser-Induced Reduction of Graphite Oxide. <i>Journal of Physical Chemistry Letters</i> , 2010, 1, 2633-2636.	4.6	211
4	Guanine, Adenine, and Hypoxanthine Production in UV ϵ -Irradiated Formamide Solutions: Relaxation of the Requirements for Prebiotic Purine Nucleobase Formation. <i>ChemBioChem</i> , 2010, 11, 1240-1243.	2.6	178
5	Space-Weathering of Solar System Bodies: A Laboratory Perspective. <i>Chemical Reviews</i> , 2013, 113, 9086-9150.	47.7	130
6	Low-Energy (5 ϵ 120 eV) Electron-Stimulated Dissociation of Amorphous D ₂ O Ice: D(2S), O(3P ₂ ,1,0), and O(1D ₂) Yields and Velocity Distributions. <i>Physical Review Letters</i> , 1995, 75, 2606-2609.	7.8	129
7	Low-energy electron-stimulated production of molecular hydrogen from amorphous water ice. <i>Journal of Chemical Physics</i> , 1994, 101, 3282-3286.	3.0	121
8	Mercury's Weather-Beaten Surface: Understanding Mercury in the Context of Lunar and Asteroidal Space Weathering Studies. <i>Space Science Reviews</i> , 2014, 181, 121-214.	8.1	108
9	Excimer laser reduction and patterning of graphite oxide. <i>Carbon</i> , 2013, 53, 81-89.	10.3	107
10	Thermal and radiation stability of the hydrated salt minerals epsomite, mirabilite, and natron under Europa environmental conditions. <i>Journal of Geophysical Research</i> , 2001, 106, 3311-3319.	3.3	104
11	Molecular water detected on the sunlit Moon by SOFIA. <i>Nature Astronomy</i> , 2021, 5, 121-127.	10.1	104
12	Observation of Negative Ion Resonances in Amorphous Ice via Low-Energy (5 ϵ 40 eV) Electron-Stimulated Production of Molecular Hydrogen. <i>Physical Review Letters</i> , 1996, 77, 3983-3986.	7.8	84
13	Theoretical Study of Formamide Decomposition Pathways. <i>Journal of Physical Chemistry A</i> , 2011, 115, 841-851.	2.5	82
14	Nucleoside phosphorylation by the mineral schreibersite. <i>Scientific Reports</i> , 2015, 5, 17198.	3.3	82
15	Brines exposed to Europa surface conditions. <i>Journal of Geophysical Research</i> , 2002, 107, 4-1.	3.3	81
16	Boehmite and Gibbsite Nanoplates for the Synthesis of Advanced Alumina Products. <i>ACS Applied Nano Materials</i> , 2018, 1, 7115-7128.	5.0	79
17	The chemical nature of Europa surface material and the relation to a subsurface ocean. <i>Icarus</i> , 2005, 177, 528-533.	2.5	73
18	Low-energy electron diffraction and induced damage in hydrated DNA. <i>Journal of Chemical Physics</i> , 2008, 128, 195102.	3.0	62

#	ARTICLE	IF	CITATIONS
19	Electron-stimulated desorption of D ⁺ from D ₂ O ice: Surface structure and electronic excitations. <i>Physical Review B</i> , 1997, 56, 4925-4937.	3.2	58
20	Temperature programmed desorption studies of water interactions with Apollo lunar samples 12001 and 72501. <i>Icarus</i> , 2015, 255, 24-29.	2.5	53
21	Solar Wind-Induced Water Cycle on the Moon. <i>Geophysical Research Letters</i> , 2018, 45, 10,959.	4.0	45
22	Electron-Stimulated Oxidation of Thin Water Films Adsorbed on TiO ₂ (110). <i>Journal of Physical Chemistry C</i> , 2007, 111, 16319-16329.	3.1	44
23	Roles of Water, Acidity, and Surface Morphology in Surface-Assisted Laser Desorption/Ionization of Amino Acids. <i>Journal of Physical Chemistry C</i> , 2008, 112, 6953-6960.	3.1	41
24	Theoretical Study of the Decomposition of Formamide in the Presence of Water Molecules. <i>Journal of Physical Chemistry A</i> , 2013, 117, 2543-2555.	2.5	41
25	Adsorption of Formamide on Kaolinite Surfaces: A Combined Infrared Experimental and Theoretical Study. <i>Journal of Physical Chemistry C</i> , 2012, 116, 23981-23991.	3.1	36
26	The importance of pores in the electron stimulated production of D ₂ and O ₂ in low temperature ice. <i>Surface Science</i> , 2005, 593, 180-186.	1.9	35
27	Reactive Adsorption of Humid SO ₂ on Metal-Organic Framework Nanosheets. <i>Journal of Physical Chemistry C</i> , 2018, 122, 10413-10422.	3.1	35
28	Intermolecular Coulomb Decay at Weakly Coupled Heterogeneous Interfaces. <i>Physical Review Letters</i> , 2011, 107, 016104.	7.8	34
29	Water interactions with micronized lunar surrogates JSC-1A and albite under ultra-high vacuum with application to lunar observations. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 105-115.	3.6	34
30	Low-energy(5-250eV)electron-stimulated desorption of H ⁺ , H ₂ ⁺ , and H ⁺ (H ₂ O) from low-temperature water ice surfaces. <i>Physical Review B</i> , 2005, 72, .	3.2	33
31	Stimulated Desorption of Cations from Pristine and Acidic Low-Temperature Water Ice Surfaces. <i>Physical Review Letters</i> , 2004, 92, 187602.	7.8	32
32	Probing low-energy electron induced DNA damage using single photon ionization mass spectrometry. <i>International Journal of Mass Spectrometry</i> , 2008, 277, 314-320.	1.5	32
33	Kinetic and internal energy distributions of molecular hydrogen produced from amorphous ice by impact of 100 eV electrons. <i>Nuclear Instruments & Methods in Physics Research B</i> , 1995, 101, 179-183.	1.4	31
34	Mechanisms of H ₂ O desorption from amorphous solid water by 157-nm irradiation: An experimental and theoretical study. <i>Journal of Chemical Physics</i> , 2013, 139, 164702.	3.0	31
35	Electron transport and precipitation at Mercury during the MESSENGER flybys: Implications for electron-stimulated desorption. <i>Planetary and Space Science</i> , 2011, 59, 2026-2036.	1.7	30
36	Electron-stimulated desorption of silicates: A potential source for ions in Mercury's space environment. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	28

#	ARTICLE	IF	CITATIONS
37	Role of Excitons in Electron- and Photon-Stimulated Desorption of Neutrals from Alkali Halides. <i>Physical Review Letters</i> , 2001, 86, 536-539.	7.8	27
38	Interactions on External MOF Surfaces: Desorption of Water and Ethanol from CuBDC Nanosheets. <i>Langmuir</i> , 2017, 33, 10153-10160.	3.5	27
39	A Stark Contrast to Modern Earth: Phosphate Mineral Transformation and Nucleoside Phosphorylation in an Iron- and Cyanide-Rich Early Earth Scenario. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 16981-16987.	13.8	26
40	Molecular Water Adsorption and Reactions on γ -Al ₂ O ₃ (0001) and γ -Alumina Particles. <i>Journal of Physical Chemistry C</i> , 2018, 122, 9540-9551.	3.1	25
41	Analysis of Organoselenium and Organic Acid Metabolites by Laser Desorption Single Photon Ionization Mass Spectrometry. <i>Analytical Chemistry</i> , 2006, 78, 8386-8394.	6.5	24
42	Kinetic Energy Dependence of Spin Filtering of Electrons Transmitted through Organized Layers of DNA. <i>Journal of Physical Chemistry C</i> , 2013, 117, 22307-22313.	3.1	21
43	Water Group Exospheres and Surface Interactions on the Moon, Mercury, and Ceres. <i>Space Science Reviews</i> , 2021, 217, 1.	8.1	21
44	Electron-Stimulated Desorption of H ⁺ , H ₂ ⁺ , OH ⁺ , and H ⁺ (H ₂ O) from Water-Covered Zirconia Surfaces. <i>Journal of Physical Chemistry B</i> , 2003, 107, 9370-9376.	2.6	19
45	Signatures of epitaxial graphene grown on Si-terminated 6H-SiC (0001). <i>Surface Science</i> , 2010, 604, 84-88.	1.9	19
46	Desorption Electrospray Ionization Imaging Mass Spectrometry as a Tool for Investigating Model Prebiotic Reactions on Mineral Surfaces. <i>Analytical Chemistry</i> , 2013, 85, 1276-1279.	6.5	19
47	The relationship between interfacial bonding and radiation damage in adsorbed DNA. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 15319-15325.	2.8	19
48	Laser-Induced Acoustic Desorption Atmospheric Pressure Photoionization via VUV-Generating Microplasmas. <i>Journal of the American Society for Mass Spectrometry</i> , 2016, 27, 1805-1812.	2.8	19
49	Particles and Photons as Drivers for Particle Release from the Surfaces of the Moon and Mercury. <i>Space Science Reviews</i> , 2022, 218, 1.	8.1	19
50	Photon-stimulated desorption of O(3P) and NO(2 $\hat{1}$) from NaNO ₃ single crystals. <i>Physical Review B</i> , 1997, 55, 13246-13252.	3.2	18
51	Prebiotic synthesis of triazines from urea: a theoretical study of free radical routes to melamine, ammeline, ammelide and cyanuric acid. <i>RSC Advances</i> , 2014, 4, 32375-32382.	3.6	18
52	Radiation Processing of Formamide and Formamide:Water Ices on Silicate Grain Analogue. <i>Journal of Physical Chemistry A</i> , 2014, 118, 1228-1236.	2.5	17
53	Investigating potential sources of Mercury's exospheric Calcium: Photon-stimulated desorption of Calcium Sulfide. <i>Journal of Geophysical Research E: Planets</i> , 2016, 121, 137-146.	3.6	16
54	A New In Situ Quasi-continuous Solar-wind Source of Molecular Water on Mercury. <i>Astrophysical Journal Letters</i> , 2020, 891, L43.	8.3	16

#	ARTICLE	IF	CITATIONS
55	The reactions of NO ₂ and CH ₃ CHO with Na-Y zeolite and the relevance to plasma-activated lean NO _x catalysis. <i>Catalysis Today</i> , 2004, 89, 151-157.	4.4	15
56	Space Weathering Induced Via Microparticle Impacts: 2. Dust Impact Simulation and Meteorite Target Analysis. <i>Journal of Geophysical Research E: Planets</i> , 2019, 124, 1084-1099.	3.6	15
57	H ₂ O and O(3P) photodesorption from amorphous solid water deposited on a lunar mare basalt. <i>Icarus</i> , 2015, 255, 44-50.	2.5	14
58	A Possible Path to Prebiotic Peptides Involving Silica and Hydroxy Acid-Mediated Amide Bond Formation. <i>ChemBioChem</i> , 2018, 19, 1913-1917.	2.6	14
59	Site-dependent electron-stimulated reactions in water films on TiO ₂ (110). <i>Journal of Chemical Physics</i> , 2007, 127, 224706.	3.0	13
60	Characterization and Simulation of Natural Pyrite Surfaces: A Combined Experimental and Theoretical Study. <i>Journal of Physical Chemistry C</i> , 2019, 123, 26397-26405.	3.1	13
61	Prebiotic Phosphorylation of Uridine using Diamidophosphate in Aerosols. <i>Scientific Reports</i> , 2019, 9, 13527.	3.3	13
62	UV Photon-Induced Water Decomposition on Zirconia Nanoparticles. <i>Journal of Physical Chemistry C</i> , 2014, 118, 12789-12795.	3.1	12
63	Photodissociation of water and O(³ P) formation on a lunar impact melt breccia. <i>Journal of Geophysical Research E: Planets</i> , 2014, 119, 894-904.	3.6	11
64	Mechanisms and cross sections for water desorption from a lunar impact melt breccia. <i>Journal of Geophysical Research E: Planets</i> , 2014, 119, 884-893.	3.6	11
65	Low energy secondary electron induced damage of condensed nucleotides. <i>Journal of Chemical Physics</i> , 2019, 150, 204709.	3.0	11
66	Investigation of Water Interactions With Apollo Lunar Regolith Grains. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2019JE006147.	3.6	11
67	Low-energy (5–100 eV) electron- and ultraviolet (6.4 eV) photon-stimulated desorption of neutral fragments from NaNO ₃ single crystals. <i>Applied Surface Science</i> , 1998, 127-129, 1-6.	6.1	10
68	Inelastic electron scattering and energy-selective negative ion reactions in molecular films on silicon surfaces. <i>Applied Surface Science</i> , 2007, 253, 6646-6656.	6.1	10
69	Microplasma Ionization of Volatile Organics for Improving Air/Water Monitoring Systems On-Board the International Space Station. <i>Journal of the American Society for Mass Spectrometry</i> , 2016, 27, 1203-1210.	2.8	10
70	Parameters affecting intracellular delivery of molecules using laser-activated carbon nanoparticles. <i>Nanomedicine: Nanotechnology, Biology, and Medicine</i> , 2016, 12, 1003-1011.	3.3	10
71	Electron Spin-Polarization Dependent Damage to Chiral Amino Acid L-Histidine. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 10182-10187.	4.6	10
72	Probing Water Interactions and Vacancy Production on Gadolinia-Doped Ceria Surfaces Using Electron Stimulated Desorption. <i>Journal of Physical Chemistry B</i> , 2005, 109, 11257-11262.	2.6	9

#	ARTICLE	IF	CITATIONS
73	Electron-stimulated desorption of D ₂ O coadsorbed with CO ₂ ice at VUV and EUV energies. <i>Journal of Chemical Physics</i> , 2003, 118, 8898-8904.	3.0	8
74	Electron- and Thermal-Stimulated Synthesis of Water on Boehmite (β -AlOOH) Nanoplates. <i>Journal of Physical Chemistry C</i> , 2019, 123, 18986-18992.	3.1	8
75	Advection diffusion model for gas transport within a packed bed of JSC-1A regolith simulant. <i>Acta Astronautica</i> , 2020, 169, 32-39.	3.2	8
76	Sweep Jet Collection Laser-Induced Acoustic Desorption Atmospheric Pressure Photoionization for Lipid Analysis Applications. <i>Journal of the American Society for Mass Spectrometry</i> , 2019, 30, 647-658.	2.8	7
77	O(3P) formation and desorption by 157-nm photoirradiation of amorphous solid water. <i>Journal of Chemical Physics</i> , 2014, 140, 094702.	3.0	6
78	Catalyst: Radiation Effects on Volatiles and Exploration of Asteroids and the Lunar Surface. <i>CheM</i> , 2018, 4, 8-12.	11.7	6
79	Direct Damage of Deoxyadenosine Monophosphate by Low Energy Electrons Probed by X-Ray Photoelectron Spectroscopy. <i>Journal of Physical Chemistry B</i> , 2020, 124, 1585-1591.	2.6	6
80	Zone specificity in low energy electron stimulated desorption of Cl ⁺ from reconstructed Si(111)-7 \times 7:Cl surfaces. <i>Surface Science</i> , 2006, 600, L245-L249.	1.9	5
81	Photon-stimulated Desorption of MgS as a Potential Source of Sulfur in Mercury's Exosphere. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2020JE006479.	3.6	5
82	Efficient Intermolecular Energy Exchange and Soft Ionization of Water at Nanoplatelet Interfaces. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 10088-10093.	4.6	4
83	Characterization of H ₂ O transport through Johnson Space Center number 1A lunar regolith simulant at low pressure for <i>in-situ</i> resource utilization. <i>Physics of Fluids</i> , 2021, 33, .	4.0	4
84	Thermal evolution of water and hydrogen from Apollo lunar regolith grains. <i>Earth and Planetary Science Letters</i> , 2021, 571, 117107.	4.4	4
85	Indirect solar receiver development for the thermal extraction of H ₂ O(<i>v</i>) from lunar regolith: Heat and mass transfer modeling. <i>Acta Astronautica</i> , 2022, 190, 365-376.	3.2	4
86	Low-energy electron-stimulated desorption of cations and neutrals from Si(111)-(7 \times 7):C2D ₂ . <i>Journal of Chemical Physics</i> , 2010, 132, 214704.	3.0	3
87	A Stark Contrast to Modern Earth: Phosphate Mineral Transformation and Nucleoside Phosphorylation in an Iron- and Cyanide-Rich Early Earth Scenario. <i>Angewandte Chemie</i> , 2019, 131, 17137-17143.	2.0	3
88	In-flight particulate matter concentrations in commercial flights are likely lower than other indoor environments. <i>Indoor Air</i> , 2021, 31, 1484-1494.	4.3	3
89	Temperature programmed desorption comparison of lunar regolith to lunar regolith simulants LMS-1 and LHS-1. <i>Earth and Planetary Science Letters</i> , 2022, 592, 117632.	4.4	3
90	Space Weathering Induced Via Microparticle Impacts: 1. Modeling of Impact Velocities and Flux of Micrometeoroids From Cometary, Asteroidal, and Interstellar Origin in the Main Asteroid Belt and the Near-Earth Environment. <i>Journal of Geophysical Research E: Planets</i> , 2019, 124, 1044-1083.	3.6	2

#	ARTICLE	IF	CITATIONS
91	Electron-Stimulated Formation and Release of Molecular Hydrogen and Oxygen from Boehmite Nanoplatelet Films. <i>Journal of Physical Chemistry C</i> , 2022, 126, 2542-2547.	3.1	2
92	Photon-In/Photon-Out X-ray Free-Electron Laser Studies of Radiolysis. <i>Applied Sciences (Switzerland)</i> , 2021, 11, 701.	2.5	1