

Luca Vattuone

List of Publications by Year in descending order

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132
papers

3,800
citations

117571

34
h-index

149623

56
g-index

136
all docs

136
docs citations

136
times ranked

2823
citing authors

#	ARTICLE	IF	CITATIONS
1	Calorimetric heats for CO and oxygen adsorption and for the catalytic CO oxidation reaction on Pt{111}. Journal of Chemical Physics, 1997, 106, 392-401.	1.2	327
2	Low-energy acoustic plasmons at metal surfaces. Nature, 2007, 448, 57-59.	13.7	189
3	Carbon Dioxide Hydrogenation on Ni(110). Journal of the American Chemical Society, 2008, 130, 11417-11422.	6.6	151
4	Initial sticking coefficient of O ₂ on Ag(110). Journal of Chemical Physics, 1994, 101, 713-725.	1.2	125
5	Bridging the structure gap: Chemistry of nanostructured surfaces at well-defined defects. Surface Science Reports, 2008, 63, 101-168.	3.8	120
6	Energetics and kinetics of CO and NO adsorption on Pt{100}: Restructuring and lateral interactions. Journal of Chemical Physics, 1996, 104, 3810-3821.	1.2	116
7	Hydrogen-Assisted Transformation of CO ₂ on Nickel: The Role of Formate and Carbon Monoxide. Journal of Physical Chemistry Letters, 2010, 1, 402-406.	2.1	111
8	Phase transition of dissociatively adsorbed oxygen on Ag(001). Physical Review B, 2000, 61, 213-227.	1.1	108
9	Interaction of carbon dioxide with Ni(110): A combined experimental and theoretical study. Physical Review B, 2007, 76, .	1.1	78
10	Interaction of rotationally aligned and of oriented molecules in gas phase and at surfaces. Progress in Surface Science, 2010, 85, 92-160.	3.8	71
11	Energetics and kinetics of the interaction of acetylene and ethylene with Pd{100} and Ni{100}. Surface Science, 2000, 447, 1-14.	0.8	69
12	Low-temperature dissociation of O ₂ on Ag(110): Surface disorder and reconstruction. Physical Review B, 1994, 49, 5113-5116.	1.1	66
13	Calorimetric investigation of NO and CO adsorption on Pd{100} and the influence of preadsorbed carbon. Journal of Chemical Physics, 1997, 106, 1990-1996.	1.2	66
14	Azimuthal dependence of sticking probability of O ₂ on Ag(110). Physical Review Letters, 1994, 72, 510-513.	2.9	64
15	Morphology of Monolayer MgO Films on Ag(100): Switching from Corrugated Islands to Extended Flat Terraces. Physical Review Letters, 2014, 112, 126102.	2.9	60
16	Adatom bond energies and lateral interaction energies from calorimetry: NO, O ₂ , and N ₂ adsorption on Ni{100}. Journal of Chemical Physics, 1996, 104, 8096-8102.	1.2	59
17	Acoustic surface plasmon on Cu(111). Europhysics Letters, 2010, 90, 57006.	0.7	59
18	Molecular Ordering and Adsorbate Induced Faceting in the Ag{110}-(S)-Glutamic Acid System. Langmuir, 2005, 21, 9468-9475.	1.6	51

#	ARTICLE	IF	CITATIONS
19	Role of Steps and of Terrace Width in Gas-Surface Interaction:O ₂ /Ag(410). Physical Review Letters, 2001, 87, 276101.	2.9	50
20	Stereodynamic Effects in the Adsorption of Ethylene onto a Metal Surface. Angewandte Chemie - International Edition, 2004, 43, 5200-5203.	7.2	50
21	Oxygen interaction with disordered and nanostructured Ag(001) surfaces. Journal of Chemical Physics, 2001, 115, 3346-3355.	1.2	47
22	Correlated Motion of Electrons on the Au(111) Surface: Anomalous Acoustic Surface-Plasmon Dispersion and Single-Particle Excitations. Physical Review Letters, 2013, 110, 127405.	2.9	46
23	Influence of Rotational Energy on Adsorption Probability for a Physisorbed System:C ₂ H ₄ onAg(001). Physical Review Letters, 1999, 82, 4878-4881.	2.9	45
24	Direct Access to Subsurface Sites in Gas-SurfaceO ₂ /Ag(210)Interactions using Supersonic Molecular Beams. Physical Review Letters, 2003, 90, 228302.	2.9	44
25	Role of Rotational Alignment in Dissociative Chemisorption and Oxidation: O ₂ on Bare and CO-Precovered Pd(100). Angewandte Chemie - International Edition, 2006, 45, 6655-6658.	7.2	44
26	Tuning surface reactivity by in situ surface nanostructuring. Journal of Chemical Physics, 2000, 112, 6840-6843.	1.2	43
27	MgO/Ag(100): Confined vibrational modes in the limit of ultrathin films. Physical Review B, 2003, 67, .	1.1	41
28	Coverage dependence of sticking coefficient of O ₂ on Ag(110). Journal of Chemical Physics, 1994, 101, 726-730.	1.2	40
29	Anharmonic shift in the stretching frequency of O ₂ chemisorbed on Ag (110). Surface Science, 1994, 314, L904-L908.	0.8	40
30	Enhanced Reactivity at Metal ⁺ Oxide Interface: Water Interaction with MgO Ultrathin Films. Journal of Physical Chemistry B, 2004, 108, 7771-7778.	1.2	40
31	X-ray photoemission study of the temperature-dependent CuO formation on Cu(410) using an energeticO ₂ molecular beam. Physical Review B, 2007, 75, .	1.1	39
32	Ethylene Decomposition at Undercoordinated Sites on Cu(410). Journal of the American Chemical Society, 2008, 130, 12552-12553.	6.6	37
33	HREELS study of O ₂ molecular chemisorption on Ag(001). Surface Science, 1997, 377-379, 671-675.	0.8	36
34	Enhanced Chemical Reactivity of Pristine Graphene Interacting Strongly with a Substrate: Chemisorbed Carbon Monoxide on Graphene/Nickel(111). ChemCatChem, 2015, 7, 2328-2331.	1.8	36
35	HREELS study of CO oxidation on Ag(001) by O ₂ or O. Surface Science, 1997, 374, 1-8.	0.8	34
36	Collision induced desorption and dissociation of O ₂ chemisorbed on Ag(001). Journal of Chemical Physics, 1998, 109, 2490-2502.	1.2	33

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37	How Growing Conditions and Interfacial Oxygen Affect the Final Morphology of MgO/Ag(100) Films. Journal of Physical Chemistry C, 2014, 118, 26091-26102.	1.5	31
38	Self-Assembly of (<i>S</i>)-Glutamic Acid on Ag(100): A Combined LT-STM and Ab Initio Investigation. Langmuir, 2010, 26, 7208-7215.	1.6	29
39	Lateral interactions as the determinant in the switch from dissociative to molecular chemisorption: NO on Ni{100}. Catalysis Letters, 1996, 41, 119-123.	1.4	27
40	Breakdown of normal energy scaling at high impact energy for O ₂ on Ag(001). Surface Science, 1998, 408, L693-L697.	0.8	27
41	Enhanced hydrolysis at monolayer MgO films. Journal of Chemical Physics, 2003, 119, 12053-12056.	1.2	27
42	Selective Production of Reactive and Nonreactive Oxygen Atoms on Pd(001) by Rotationally Aligned Oxygen Molecules. Angewandte Chemie - International Edition, 2009, 48, 4845-4848.	7.2	27
43	Correlating hydrophobicity to surface chemistry of microstructured aluminium surfaces. Applied Surface Science, 2021, 542, 148574.	3.1	27
44	Coverage dependence of the O-Ag (110) vibration. Surface Science, 1994, 317, L1120-L1123.	0.8	26
45	Enhanced collision induced desorption and dissociation of O ₂ chemisorbed on Ag(001) at grazing incidence. Chemical Physics Letters, 1997, 278, 245-250.	1.2	24
46	Transient CO adsorption and the catalytic properties of surfaces. Physical Review B, 2001, 63, .	1.1	24
47	Formation of channels for oxygen migration towards subsurface sites by CO oxidation and growth of the surface oxide phase on Ag(). Surface Science, 2002, 506, 213-222.	0.8	23
48	A simple and compact mechanical velocity selector of use to analyze/select molecular alignment in supersonic seeded beams. Review of Scientific Instruments, 2004, 75, 349-354.	0.6	22
49	Stoichiometry-Dependent Chemical Activity of Supported MgO(100) Films. Journal of Physical Chemistry A, 2011, 115, 7161-7168.	1.1	21
50	Effect of surface interband transitions on surface plasmon dispersion: O/Ag(001). Physical Review B, 2000, 61, 7324-7327.	1.1	20
51	Substrate reconstruction and electronic surface states: Ag(001). Surface Science, 2001, 486, 65-72.	0.8	20
52	Ethene Adsorption and Decomposition on the Cu(410) Surface. Journal of Physical Chemistry C, 2009, 113, 20881-20889.	1.5	20
53	(<i>S</i>)-Glutamic Acid on Ag(100): Self-Assembly in the Nonzwitterionic Form. Langmuir, 2011, 27, 2393-2404.	1.6	20
54	New insights on the stereodynamics of ethylene adsorption on an oxygen-precovered silver surface. Journal of Chemical Physics, 2005, 123, 224709.	1.2	19

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55	STM study of hydroxyl formation at $\text{O}^{\bullet}\text{Ag}(110)$. <i>Physical Review B</i> , 2006, 74, .	1.1	19
56	Band structure effects on the $\text{Be}(0001)$ acoustic surface plasmon energy dispersion. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2008, 205, 1307-1311.	0.8	19
57	Acoustic Surface Plasmon Dispersion on Nanostructured $\text{Cu}(111)$. <i>Plasmonics</i> , 2012, 7, 323-329.	1.8	19
58	Unraveling the Self-Assembly of the $\langle i \rangle \text{S} \langle /i \rangle$ -Glutamic Acid $\hat{\text{e}}$ Flower $\hat{\text{e}}$ Structure on $\text{Ag}(100)$. <i>Langmuir</i> , 2013, 29, 7876-7884.	1.6	19
59	Switching from molecular to dissociative adsorption with vibrational energy: ethylene on $\text{Ag}(001)$. <i>Chemical Physics Letters</i> , 2000, 331, 177-183.	1.2	18
60	Surface plasmon dispersion on sputtered and nanostructured $\text{Ag}(001)$. <i>Physical Review B</i> , 2003, 67, .	1.1	18
61	Stereodynamic Effects in the Adsorption of Propylene Molecules on $\text{Ag}(001)$. <i>Journal of Physical Chemistry B</i> , 2005, 109, 22884-22889.	1.2	18
62	Monitoring Super- and Subsurface Oxygen on $\text{Ag}(210)$ by High Energy Resolution X-ray Photoelectron Spectroscopy: A Subsurface Diffusion and Segregation. <i>Journal of Physical Chemistry B</i> , 2006, 110, 942-947.	1.2	18
63	From adsorption at the surface to incorporation into subsurface sites: the role of steps for O/Ag . <i>Applied Physics A: Materials Science and Processing</i> , 2007, 87, 399-404.	1.1	18
64	Unravelling the Role of Steps in Cu_{2}O Formation via Hyperthermal O_{2} Adsorption at $\text{Cu}(410)$. <i>Journal of Physical Chemistry C</i> , 2007, 111, 17340-17345.	1.5	18
65	Turning the Stoichiometry of Surface Oxide Phases by Step Morphology Ag 511 T_j 1.0784314 $rgBT$ 10 Tf 50 347 Td	2.9	18
66	Chemisorption of CO on N-doped graphene on $\text{Ni}(111)$. <i>Applied Surface Science</i> , 2018, 428, 775-780.	3.1	18
67	Real-time XPS investigation of the impact-energy dependence of C_2H_4 adsorption on $\text{Ag}(100)$. <i>Physical Review B</i> , 2002, 66, .	1.1	17
68	Oxygen vibrations in $\text{O}^{\bullet}\text{Ag}(001)$. <i>Surface Science</i> , 2003, 530, 26-36.	0.8	17
69	Ethylene Adsorption on Clean and Oxygen Covered Flat and Stepped $\text{Ag}(001)$. <i>International Journal of Modern Physics B</i> , 2003, 17, 2497-2526.	1.0	17
70	Ethene stabilization on $\text{Cu}(111)$ by surface roughness. <i>Journal of Chemical Physics</i> , 2009, 131, 024701.	1.2	17
71	Dynamics of the gas $\hat{\text{e}}$ surface interaction in presence of well defined defects. <i>Surface Science</i> , 2002, 502-503, 331-340.	0.8	16
72	Subsurface Oxygen Stabilization by a Third Species: $\hat{\text{e}}$ Carbonates on $\text{Ag}(210)$. <i>Journal of Physical Chemistry C</i> , 2007, 111, 10923-10930.	1.5	16

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73	Spontaneous Oxidation of Ni Nanoclusters on MgO Monolayers Induced by Segregation of Interfacial Oxygen. <i>Journal of Physical Chemistry Letters</i> , 2015, 6, 3104-3109.	2.1	15
74	CO chemisorption at vacancies of supported graphene films: a candidate for a sensor?. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 18692-18696.	1.3	15
75	NUMERICAL SIMULATION OF ELECTRON TRAJECTORIES FOR EELS. <i>COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering</i> , 1992, 11, 85-88.	0.5	14
76	Accretion disc origin of the Earth's water. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2013, 371, 20110585.	1.6	14
77	Influence of growing conditions on the reactivity of Ni supported graphene towards CO. <i>Journal of Chemical Physics</i> , 2017, 146, 104704.	1.2	14
78	Dynamics of Ethene Adsorption on Clean and C-Contaminated Cu(410). <i>Journal of Physical Chemistry C</i> , 2009, 113, 20875-20880.	1.5	13
79	Anisotropic Dispersion and Partial Localization of Acoustic Surface Plasmons on an Atomically Stepped Surface: Au(788). <i>Physical Review Letters</i> , 2014, 113, 186804.	2.9	13
80	Adsorption of molecular oxygen on Ag(110). <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 1993, 64-65, 577-581.	0.8	12
81	Dynamics of the interaction of O ₂ with stepped and damaged Ag surfaces. <i>Journal of Physics Condensed Matter</i> , 2002, 14, 6065-6079.	0.7	12
82	Common fingerprint of hydroxylated non-polar steps on MgO smoke and MgO films. <i>Surface Science</i> , 2010, 604, 252-257.	0.8	12
83	Negative ion resonances of O ₂ adsorbed on Ag surfaces. <i>Journal of Physics Condensed Matter</i> , 2000, 12, R53-R82.	0.7	11
84	Coverage dependence of the sticking probability of ethylene on Ag(410). <i>Surface Science</i> , 2005, 587, 110-120.	0.8	11
85	Adatom Extraction from Pristine Metal Terraces by Dissociative Oxygen Adsorption: Combined STM and Density Functional Theory Investigation of O and Ag on Ti 110 . <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 104704.	2.9	11
86	Influence of electron reflectivity on the analysis of surface processes: O ₂ -Ag(110). <i>Physical Review B</i> , 1994, 49, 14744-14745.	1.1	10
87	High-resolution Electron Energy Loss Spectroscopy Study of O-Cu(410). <i>Journal of Physical Chemistry B</i> , 2007, 111, 1679-1683.	1.2	10
88	Hydrogen-induced nanotunnel opening within semiconductor subsurface. <i>Nature Communications</i> , 2013, 4, .	5.8	10
89	On the equivalence of EELS and IRAS: the case of O _i -Ag(110). <i>Surface Science</i> , 1996, 369, 336-342.	0.8	9
90	Adsorption and desorption of O on Ag surfaces. <i>Vacuum</i> , 1998, 50, 445-450.	1.6	9

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91	Cooling and alignment of ethylene molecules in supersonic seeded expansions: diagnostic and application to gas phase and surface scattering experiments. <i>European Physical Journal D</i> , 2006, 38, 121-127.	0.6	9
92	Pressure and temperature dependence of cuprous oxide nucleation on Cu(410). <i>Journal of Physics Condensed Matter</i> , 2007, 19, 305022.	0.7	9
93	O ₂ dissociation before the onset of added row nucleation on Ag(110): an atomistic scanning tunnelling microscopy view. <i>Journal of Physics Condensed Matter</i> , 2010, 22, 304015.	0.7	9
94	The effect of step geometry in copper oxidation by hyperthermal O ₂ molecular beam: Cu(511) vs Cu(410). <i>Journal of Chemical Physics</i> , 2012, 136, 094704.	1.2	9
95	Synthesis of corrugated C-based nanostructures by Br-corannulene oligomerization. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 26161-26172.	1.3	9
96	Influence of Defects and Heteroatoms on the Chemical Properties of Supported Graphene Layers. <i>Coatings</i> , 2022, 12, 397.	1.2	9
97	Electrostatic electron analyzer with 90° deflection angle. <i>Review of Scientific Instruments</i> , 2002, 73, 3861-3866.	0.6	8
98	Graphene growth on Ni (1 1 1) by CO exposure at near ambient pressure. <i>Chemical Physics Letters</i> , 2021, 774, 138596.	1.2	8
99	Dynamics of propene adsorption on Ag(001). <i>Journal of Chemical Physics</i> , 2005, 122, 134701.	1.2	7
100	Collisionally aligned molecular beams: a tool for stereodynamical studies in the gas phase and at surfaces. <i>Physica Scripta</i> , 2006, 73, C20-C24.	1.2	7
101	DFT Atomistic Thermodynamics Applied To Elucidate the Driving Force behind Glutamic Acid Self-Assemblies on Silver (100) Surface. <i>Journal of Physical Chemistry C</i> , 2014, 118, 29874-29879.	1.5	7
102	Interaction of ethylene and oxygen with stepped Ag surfaces. <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 2003, 129, 157-164.	0.8	6
103	Stereoselectivity in catalytic reactions: CO oxidation on Pd(100) by rotationally aligned O ₂ molecules. <i>European Physical Journal B</i> , 2010, 75, 81-87.	0.6	6
104	Coupling scanning tunneling microscope and supersonic molecular beams: A unique tool for in situ investigation of the morphology of activated systems. <i>Review of Scientific Instruments</i> , 2012, 83, 093703.	0.6	6
105	High Resolution Electron Energy Loss Spectroscopy (HREELS): A Sensitive and Versatile Surface Tool. <i>Springer Series in Surface Sciences</i> , 2013, , 499-529.	0.3	6
106	Spectroscopic Evidence for Neutral and Anionic Adsorption of (S)-Glutamic Acid on Ag(111). <i>Langmuir</i> , 2013, 29, 6867-6875.	1.6	6
107	Deciphering complex features in STM images of O adatoms on Ag(110). <i>Physical Review B</i> , 2018, 98, .	1.1	6
108	Steering in non-dissociative chemisorption: ethylene on Ag(410). <i>Chemical Physics Letters</i> , 2003, 382, 605-610.	1.2	5

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109	Heterolitic photolysis of O ₂ on Ag(100). Chemical Physics Letters, 2005, 404, 336-340.	1.2	5
110	Initial sticking probability of O ₂ on Cu(410). Surface Science, 2008, 602, 2689-2692.	0.8	5
111	Oxygen interaction at Ag(511): from chemisorption to the initial stages of oxide formation. Journal of Physics Condensed Matter, 2008, 20, 224006.	0.7	5
112	Interface Oxygen Induced Internal Structures of Ultrathin MgO Islands Grown on Ag(100). Journal of Physical Chemistry C, 2020, 124, 8834-8842.	1.5	5
113	Boudouard reaction under graphene cover on Ni(1 1 1). Applied Surface Science, 2022, 599, 154065.	3.1	5
114	Coverage dependence of the dynamics of ethylene adsorption on Ag(210). Journal of Physics Condensed Matter, 2004, 16, S2929-S2936.	0.7	4
115	Chemisorption dynamics in the presence of well defined surface defects. Chemical Physics of Solid Surfaces, 2003, , 223-246.	0.3	3
116	Supersonic Molecular Beams Studies of Surfaces. Springer Series in Surface Sciences, 2013, , 1-23.	0.3	3
117	Prominence of Terahertz Acoustic Surface Plasmon Excitation in Gasâ€œSurface Interaction with Metals. Journal of Physical Chemistry Letters, 2021, 12, 9894-9898.	2.1	3
118	Phonons in Thin Oxide Films. Springer Series in Materials Science, 2016, , 169-199.	0.4	2
119	Influence of Defects on Adsorptionâ€œModel Studies With Stepped Surfaces. , 2018, , 138-165.		2
120	Morphological characterization and electronic properties of pristine and oxygen-exposed graphene nanoribbons on Ag(110). Physical Chemistry Chemical Physics, 2021, 23, 7926-7937.	1.3	2
121	Graphene. Springer Handbooks, 2020, , 1171-1198.	0.3	2
122	Adsorption of Glutamic acid on clean and hydroxylated rutile TiO ₂ (110): an XPS and NEXAFS investigation. Journal of Physics Condensed Matter, 2022, , .	0.7	2
123	The 12th International Conference on Vibrations at Surfaces (VAS 12) (Erice, 20â€œ26 July 2007). Journal of Physics Condensed Matter, 2008, 20, 220301.	0.7	1
124	Poisoning and non-poisoning oxygen on Cu(410). Journal of Physics Condensed Matter, 2011, 23, 484001.	0.7	1
125	Sticking Probability and Reactivity of Hyperthermal O ₂ Molecules Impinging on CO Pre-covered Pd(100): Effect of Rotational States with K>1. Topics in Catalysis, 2015, 58, 580-590.	1.3	1
126	Comment on â€œAdsorption of hydrogen and hydrocarbon molecules on SiC(001)â€œby Pollmann et al. (Surf. Sci. Rep. 69 (2014) 55â€œ104). Surface Science, 2016, 644, L170-L171.	0.8	1

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127	2D Ni Nanoclusters on Ultrathin MgO/Ag(100). Journal of Physical Chemistry C, 2020, 124, 482-488.	1.5	1
128	Vibrational fingerprint of the catalytically-active FeO _{2-x} iron oxide phase on Pt(111). Applied Surface Science, 2020, 512, 145774.	3.1	1
129	Energetics of Adsorption: Single Crystal Calorimetry. Springer Handbooks, 2020, , 1005-1033.	0.3	1
130	Plasmons in One and Two Dimensions. Springer Handbooks, 2020, , 557-584.	0.3	1
131	State Resolved Sticking Probability in Gas-Surface Interaction. Springer Handbooks, 2020, , 1053-1084.	0.3	1
132	Dynamics of the interaction of O ₂ with stepped and damaged Ag surfaces. Journal of Physics Condensed Matter, 2003, 15, 2231-2231.	0.7	0