Alessandro Molle

List of Publications by Year
in descending order

125 papers	5,732 citations	159585 30 h-index	76900 74 g-index
130 all docs	130 docs citations	130 times ranked	6093 citing authors

#	Article	IF	Citations
1	Ambient Pressure Chemical Vapor Deposition of Flat and Vertically Aligned MoS2 Nanosheets. Nanomaterials, 2022, 12, 973.	4.1	12
2	Optothermal Raman Spectroscopy of Black Phosphorus on a Gold Substrate. Nanomaterials, 2022, 12, 1410.	4.1	3
3	Closing the THz gap with Dirac semimetals. Light: Science and Applications, 2022, 11, 124.	16.6	2
4	Vapor phase epitaxy of antimonene-like nanocrystals on germanium by an MOCVD process. Applied Surface Science, 2021, 535, 147729.	6.1	6
5	Geometrical Engineering of Giant Optical Dichroism in Rippled MoS₂ Nanosheets. Advanced Optical Materials, 2021, 9, 2001408.	7.3	6
6	Stability and universal encapsulation of epitaxial Xenes. Faraday Discussions, 2021, 227, 171-183.	3.2	24
7	Applications in opto-electronics: general discussion. Faraday Discussions, 2021, 227, 184-188.	3.2	1
8	Hybrid MoS2/PEDOT:PSS transporting layers for interface engineering of nanoplatelet-based light-emitting diodes. Dalton Transactions, 2021, 50, 9208-9214.	3.3	2
9	Tailoring the Phase in Nanoscale MoTe₂ Grown by Barrier-Assisted Chemical Vapor Deposition. Crystal Growth and Design, 2021, 21, 2970-2976.	3.0	5
10	Broadband and Tunable Light Harvesting in Nanorippled MoS₂ Ultrathin Films. ACS Applied Materials & Interfaces, 2021, 13, 13508-13516.	8.0	21
11	Optical Properties of Stanene-like Nanosheets on Al₂O₃(0001): Implications for Xene Photonics. ACS Applied Nano Materials, 2021, 4, 2351-2356.	5.0	7
12	Hydrophilic Character of Single-Layer MoS₂ Grown on Ag(111). Journal of Physical Chemistry C, 2021, 125, 9479-9485.	3.1	11
13	Probing the Laser Ablation of Black Phosphorus by Raman Spectroscopy. Journal of Physical Chemistry C, 2021, 125, 8704-8711.	3.1	4
14	Twoâ€Đimensional Siliceneâ€“Stanene Heterostructures by Epitaxy. Advanced Functional Materials, 2021, 31, 2102797.	14.9	23
15	How Oxygen Absorption Affects the Al 2 O 3 â€Ɛncapsulated Blue Phosphoreneâ€“Au Alloy. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2100217.	2.4	1
16	3-Dimensional graphene-like structures and applications: general discussion. Faraday Discussions, 2021, 227, 359-382.	3.2	0
17	The Xenes Generations: A Taxonomy of Epitaxial Singleâ€Ɛlement 2D Materials. Physica Status Solidi - Rapid Research Letters, 2020, 14, 1900439.	2.4	42
18	Evidence of Plasmon Enhanced Charge Transfer in Largeâ€Area Hybrid Auâ€“MoS₂ Metasurface. Advanced Optical Materials, 2020, 8, 2000653.	7.3	20

#	Article	IF	Citations
19	Changing the Electronic Polarizability of Monolayer MoS₂ by Peryleneâ€Based Seeding Promoters. Advanced Materials Interfaces, 2020, 7, 2000791.	3.7	13
20	Disassembling Silicene from Native Substrate and Transferring onto an Arbitrary Target Substrate. Advanced Functional Materials, 2020, 30, 2004546.	14.9	21
21	Ultra-broadband photon harvesting in large-area few-layer MoS₂ nanostripe gratings. Nanoscale, 2020, 12, 24385-24393.	5.6	18
22	Thickness determination of anisotropic van der Waals crystals by raman spectroscopy: the case of black phosphorus. Nanotechnology, 2020, 31, 415703.	2.6	8
23	Two-dimensional Xenes and their device concepts for future micro- and nanoelectronics and energy applications. , 2020, , 181-219.		1
24	Emerging Dirac materials for THz plasmonics. Applied Materials Today, 2020, 20, 100732.	4.3	14
25	Application-Oriented Growth of a Molybdenum Disulfide (MoS2) Single Layer by Means of Parametrically Optimized Chemical Vapor Deposition. Materials, 2020, 13, 2786.	2.9	20
26	Prolonged Lifetime in Nanocrystal Light-Emitting Diodes Incorporating MoS2-Based Conjugated Polyelectrolyte Interfacial Layer as an Alternative to PEDOT:PSS. ACS Applied Electronic Materials, 2020, 2, 1186-1192.	4.3	9
27	Growth of 2D-molybdenum disulfide on top of magnetite and iron by chemical methods. Thin Solid Films, 2020, 701, 137943.	1.8	3
28	Tuning the transient opto-electronic properties of few-layer MoS2 nanosheets via substrate nano-patterning. EPJ Web of Conferences, 2020, 238, 07006.	0.3	0
29	Large-area patterning of substrate-conformal MoS2 nano-trenches. Nano Research, 2019, 12, 1851-1854.	10.4	16
30	Embedding epitaxial (blue) phosphorene in between device-compatible functional layers. Nanoscale, 2019, 11, 18232-18237.	5.6	15
31	Engineering Epitaxial Silicene on Functional Substrates for Nanotechnology. Research, 2019, 2019, 8494606.	5.7	7
32	Designer Shape Anisotropy on Transitionâ€Metalâ€Dichalcogenide Nanosheets. Advanced Materials, 2018, 30, 1705615.	21.0	52
33	Bonding Character and Magnetism at the Interface Between Fe and MoS₂ Nanosheets. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800015.	1.8	4
34	Encapsulated Silicene Field-Effect Transistors. Nanoscience and Technology, 2018, , 235-254.	1.5	1
35	Optical Conductivity of Two-Dimensional Silicon: Evidence of Dirac Electrodynamics. Nano Letters, 2018, 18, 7124-7132.	9.1	34
36	Silicene, silicene derivatives, and their device applications. Chemical Society Reviews, 2018, 47, 6370-6387.	38.1	261

#	Article	IF	Citations
37	Ultrafast Anisotropic Exciton Dynamics in Nanopatterned MoS₂ Sheets. ACS Photonics, 2018, 5, 3363-3371.	6.6	17
38	Buckled two-dimensional Xene sheets. Nature Materials, 2017, 16, 163-169.	27.5	641
39	Silicon Nanosheets: Crossover between Multilayer Silicene and Diamond-like Growth Regime. ACS Nano, 2017, 11, 3376-3382.	14.6	61
40	Anisotropic MoS₂ Nanosheets Grown on Selfâ€Organized Nanopatterned Substrates. Advanced Materials, 2017, 29, 1605785.	21.0	53
41	Ultrafast carrier dynamics of epitaxial silicene. , 2017, , .		3
42	Optical characterization of anisotropic MoS<inf>2</inf> nanosheets. , 2017, , .		1
43	Silicene in the Flatland. Carbon Nanostructures, 2017, , 137-152.	0.1	1
44	MOS2Impurities: Evidence of Native Cs Impurities and Metal-Insulator Transition in MoS2Natural Crystals (Adv. Electron. Mater. 6/2016). Advanced Electronic Materials, 2016, 2, .	5.1	0
45	Electron Confinement at the Si/MoS₂ Heterosheet Interface. Advanced Materials Interfaces, 2016, 3, 1500619.	3.7	28
46	Structural, optical and compositional stability of MoS ₂ multi-layer flakes under high dose electron beam irradiation. 2D Materials, 2016, 3, 025024.	4.4	19
47	Towards a uniform and large-scale deposition of MoS₂nanosheets via sulfurization of ultra-thin Mo-based solid films. Nanotechnology, 2016, 27, 175703.	2.6	59
48	(Invited) Xenes: A New Emerging Two-Dimensional Materials Platform for Nanoelectronics. ECS Transactions, 2016, 75, 163-173.	0.5	19
49	(Invited) Silicene: Silicon at the Two Dimensional Limit and Its Applications to Nanoelectronics. ECS Transactions, 2016, 75, 703-709.	0.5	7
50	Engineering the Growth of MoS₂ via Atomic Layer Deposition of Molybdenum Oxide Film Precursor. Advanced Electronic Materials, 2016, 2, 1600330.	5.1	41
51	Novel near-infrared emission from crystal defects in MoS2 multilayer flakes. Nature Communications, 2016, 7, 13044.	12.8	60
52	Evidence of Native Cs Impurities and Metalâ€“Insulator Transition in MoS₂ Natural Crystals. Advanced Electronic Materials, 2016, 2, 1600091.	5.1	12
53	Two-dimensional silicon: the advent of silicene. 2D Materials, 2016, 3, 012001.	4.4	155
54	(Invited) Xenes: A New Emerging Two-Dimensional Materials Platform for Nanoelectronics. ECS Meeting Abstracts, 2016, , .	0.0	0

#	Article	IF	Citations
55	(Invited) Silicene: Silicon at the Two Dimensional Limit and Its Applications to Nanoelectronics. ECS Meeting Abstracts, 2016, , .	0.0	0
56	Silicene: a review of recent experimental and theoretical investigations. Journal of Physics Condensed Matter, 2015, 27, 253002.	1.8	180
57	Optical response and ultrafast carrier dynamics of the silicene-silver interface. Physical Review B, 2015, 92, .	3.2	37
58	(Invited) Defects and Dopants in Silicon and Germanium Nanowires. ECS Transactions, 2015, 69, 69-79.	0.5	2
59	Silicene field-effect transistors operating at room temperature. Nature Nanotechnology, 2015, 10, 227-231.	31.5	1,429
60	Nucleation and temperature-driven phase transitions of silicene superstructures on Ag(1â€‰1â€‰1). Journal of Physics Condensed Matter, 2015, 27, 255005.	1.8	23
61	Ultrafast Dynamics in Epitaxial Silicene on Ag(111). Springer Proceedings in Physics, 2015, , 329-332.	0.2	2
62	Ultrafast dynamics in epitaxial silicene on Ag(111). , 2014, , .		0
63	Engineering the electronic properties of silicene by tuning the composition of MoX ₂ and GaX (X = S,Se,Te) chalchogenide templates. 2D Materials, 2014, 1, 011010.	4.4	53
64	Effect on Al:MO2/In0.53Ga0.47As interface (M=Hf, Zr) of trimethyl-aluminum pre-treatment during atomic layer deposition. Thin Solid Films, 2014, 563, 44-49.	1.8	0
65	Twoâ€Đimensional Si Nanosheets with Local Hexagonal Structure on a MoS₂ Surface. Advanced Materials, 2014, 26, 2096-2101.	21.0	311
66	Electrically detected magnetic resonance study of the Ge dangling bonds at the Ge(111)/GeO2 interface after capping with Al2O3 layer. Applied Surface Science, 2014, 291, 3-5.	6.1	0
67	Phase Stabilization of Al:HfO₂ Grown on In_xGa_{1â€“x}As Substrates (x = 0, 0.15, 0.53) via Trimethylaluminum-Based Atomic Layer Deposition. ACS Applied Materials & Interfaces, 2014, 6, 3455-3461.	8.0	25
68	Exploring the morphological and electronic properties of silicene superstructures. Applied Surface Science, 2014, 291, 109-112.	6.1	34
69	Vibrational properties of epitaxial silicene layers on (111) Ag. Applied Surface Science, 2014, 291, 113-117.	6.1	49
70	Theoretical aspects of graphene-like group IV semiconductors. Applied Surface Science, 2014, 291, 98-103.	6.1	23
71	Getting through the Nature of Silicene: An sp²â€“sp³ Two-Dimensional Silicon Nanosheet. Journal of Physical Chemistry C, 2013, 117, 16719-16724.	3.1	163
72	Evidence for graphite-like hexagonal AlN nanosheets epitaxially grown on single crystal Ag(111). Applied Physics Letters, 2013, 103, .	3.3	251

#	Article	IF	Citations
73	Atomic layer-deposited Alâ€“HfO2/SiO2 bi-layers towards 3D charge trapping non-volatile memory. Thin Solid Films, 2013, 533, 9-14.	1.8	16
74	Hindering the Oxidation of Silicene with Nonâ€Reactive Encapsulation. Advanced Functional Materials, 2013, 23, 4340-4344.	14.9	161
75	A Viable Route to Enhance Permittivity of Gate Dielectrics on In_{0.53}Ga_{0.47}As(001): Trimethylaluminum-Based Atomic Layer Deposition of MeO₂ (Me = Zr, Hf). ECS Journal of Solid State Science and Technology, 2013, 2, P395-P399.	1.8	2
76	Trimethylaluminum-based Atomic Layer Deposition of MO2 (M=Zr, Hf): Gate Dielectrics on In0.53Ga0.47As(001) Substrates. ECS Transactions, 2013, 50, 11-19.	0.5	1
77	Evidence of Trigonal Dangling Bonds at the Ge(111)/Oxide Interface by Electrically Detected Magnetic Resonance. Physical Review Letters, 2013, 110, 206101.	7.8	15
78	(Invited) Structural and Chemical Stabilization of the Epitaxial Silicene. ECS Transactions, 2013, 58, 217-227.	0.5	5
79	Atomic Layer Deposition of Al-Doped ZrO2Thin Films as Gate Dielectric for In0.53Ga0.47As. Journal of the Electrochemical Society, 2012, 159, H220-H224.	2.9	11
80	Role of the Oxygen Content in the GeO2Passivation of Ge Substrates as a Function of the Oxidizer. Journal of the Electrochemical Society, 2012, 159, H555-H559.	2.9	2
81	Electronic properties at the oxide interface with silicon and germanium through x-ray induced oxide charging. Applied Physics Letters, 2012, 101, 211606.	3.3	19
82	Structural and electrical properties of atomic layer deposited Al-doped ZrO2 films and of the interface with TaN electrode. Journal of Applied Physics, 2012, 112, .	2.5	22
83	Effect of Electric Dipoles on Fermi Level Positioning at the Interface between Ultrathin Al₂O₃ Films and Differently Reconstructed In_{0.53}Ga_{0.47}As(001) Surfaces. Journal of Physical Chemistry C, 2012, 116, 18746-18751.	3.1	4
84	Local Electronic Properties of Corrugated Silicene Phases. Advanced Materials, 2012, 24, 5088-5093.	21.0	278
85	Reconstruction dependent reactivity of As-decapped In0.53Ga0.47As(001) surfaces and its influence on the electrical quality of the interface with Al2O3 grown by atomic layer deposition. Applied Physics Letters, 2011, 99, .	3.3	11
86	Transitivity of band offsets between semiconductor heterojunctions and oxide insulators. Applied Physics Letters, 2011, 99, .	3.3	20
87	Impact of post deposition annealing in the electrically active traps at the interface between Ge(001) substrates and LaGeOx films grown by molecular beam deposition. Journal of Applied Physics, 2011, 110, 084504.	2.5	8
88	Effects of surface passivation during atomic layer deposition of Al2O3 on In0.53Ga0.47As substrates. Microelectronic Engineering, 2011, 88, 431-434.	2.4	16
89	Influence of the oxidation temperature on the non-trigonal Ge dangling bonds at the (100)Ge/GeO2 interface. Microelectronic Engineering, 2011, 88, 388-390.	2.4	4
90	Chemical nature of the passivation layer depending on the oxidizing agent in Gd2O3/GeO2/Ge stacks grown by molecular beam deposition. Microelectronic Engineering, 2011, 88, 403-406.	2.4	2

#	Article	IF	Citations
91	Al2O3 stacks on In0.53Ga0.47As substrates: In situ investigation of the interface. Microelectronic Engineering, 2011, 88, 435-439.	2.4	4
92	Magnetic resonance spectroscopy of defects at the dielectric-semiconductor interface: Ge substrates and Si nanowires (invited). Microelectronic Engineering, 2011, 88, 1482-1487.	2.4	8
93	Influence of lattice parameters on the dielectric constant of tetragonal ZrO2 and La-doped ZrO2 crystals in thin films deposited by atomic layer deposition on Ge(001). Applied Physics Letters, 2011, 99, 232907.	3.3	10
94	Improved Performance of In$_{0.53}$Ga$_{0.47}$As-Based Metalâ€“Oxideâ€“Semiconductor Capacitors with Al:ZrO$_{2}$ Gate Dielectric Grown by Atomic Layer Deposition. Applied Physics Express, 2011, 4, 094103.	2.4	5
95	(Invited) Active Trap Determination at the Interface of Ge and In0.53Ga0.47 as Substrates with Dielectric Layers. ECS Transactions, 2011, 41, 203-221.	0.5	3
96	Detection of the Tetragonal Phase in Atomic Layer Deposited La-Doped ZrO2 Thin Films on Germanium. Journal of the Electrochemical Society, 2011, 158, G194.	2.9	7
97	Atomic Layer Deposition of Al-Doped ZrO2 Thin Films for Advanced Gate Stack on III-V Substrates. ECS Transactions, 2011, 35, 431-440.	0.5	1
98	Detection of the Tetragonal and Monoclinic Phases and their Role on the Dielectric Constant of Atomic Layer Deposited La-Doped ZrO2 Thin Films on Ge (001). ECS Transactions, 2011, 35, 481-490.	0.5	1
99	High permittivity materials for oxide gate stack in Ge-based metal oxide semiconductor capacitors. Thin Solid Films, 2010, 518, S96-S103.	1.8	15
100	Interface analysis of Ge ultra thin layers intercalated between GaAs substrates and oxide stacks. Thin Solid Films, 2010, 518, S123-S127.	1.8	6
101	Influence of the oxidizing species on the Ge dangling bonds at the (100)Ge/GeO2 interface. Applied Physics Letters, 2010, 96, .	3.3	31
102	Atomic layer deposition of LaxZr1âˆ’xO2âˆ’Îˆâ€˜(x=0.25) high-k dielectrics for advanced gate stacks. Applied Physics Letters, 2009, 94, .	3.3	37
103	Interface quality of atomic layer deposited La-doped ZrO2 films on Ge-passivated In0.15Ga0.85As substrates. Materials Research Society Symposia Proceedings, 2009, 1194, 80.	0.1	0
104	Ge-based interface passivation for atomic layer deposited La-doped ZrO2 on III-V compound (GaAs,In0.15Ga0.85As) substrates. Applied Physics Letters, 2009, 95, 023507.	3.3	25
105	Thermally induced permittivity enhancement in La-doped ZrO2 grown by atomic layer deposition on Ge(100). Applied Physics Letters, 2009, 95, 122902.	3.3	31
106	Growth study of GexSbyTez deposited by MOCVD under nitrogen for non-volatile memory applications. Journal of Crystal Growth, 2008, 310, 5053-5057.	1.5	19
107	Atomic oxygen-assisted molecular beam deposition of Gd2O3 films for ultra-scaled Ge-based electronic devices. Materials Science in Semiconductor Processing, 2008, 11, 236-240.	4.0	9
108	Stability and interface quality of GeO2 films grown on Ge by atomic oxygen assisted deposition. Journal of Chemical Physics, 2008, 129, 011104.	3.0	17

#	Article	IF	Citations
109	Evidence of dangling bond electrical activity at the Ge/oxide interface. Applied Physics Letters, 2008, 93, .	3.3	41
110	Effect of oxygen on the electronic configuration of Gd2O3âˆ•Ge heterojunctions. Applied Physics Letters, 2008, 92, 042106.	3.3	16
111	Structure and interface bonding of GeO2âˆ•Geâˆ•In0.15Ga0.85As heterostructures. Applied Physics Letters, 2008, 93, 133504.	3.3	9
112	Epitaxial growth of cubic Gd₂O₃thin films on Ge substrates. Journal of Physics: Conference Series, 2008, 100, 042048.	0.4	6
113	Cubic-to-monoclinic phase transition during the epitaxial growth of crystalline Gd2O3 films on Ge(001) substrates. Applied Physics Letters, 2007, 90, 193511.	3.3	41
114	The interface between Gd2O3 films and Ge(001): A comparative study between molecular and atomic oxygen mediated growths. Journal of Applied Physics, 2007, 102, 034513.	2.5	12
115	Self-organised synthesis of Rh nanostructures with tunable chemical reactivity. Nanoscale Research Letters, 2007, 2, 251-264.	5.7	6
116	In situ chemical and structural investigations of the oxidation of Ge(001) substrates by atomic oxygen. Applied Physics Letters, 2006, 89, 083504.	3.3	127
117	Formation and stability of germanium oxide induced by atomic oxygen exposure. Materials Science in Semiconductor Processing, 2006, 9, 673-678.	4.0	28
118	Nanostructuring Rh(110) Surfaces by Ion Etching. Materials Research Society Symposia Proceedings, 2006, 960, 1.	0.1	0
119	Interfacial dynamics of the rhomboidal pyramid pattern on ion-eroded Cu(110). Physical Review B, 2006, 73, .	3.2	14
120	Carbon Monoxide Dissociation on Rh Nanopyramids. Physical Review Letters, 2006, 97, 056103.	7.8	41
121	Temperature dependence of rippled corrugations induced on the Rh(110) surface via ion sputtering. Nuclear Instruments & Methods in Physics Research B, 2005, 230, 555-559.	1.4	3
122	Dense arrays of Co nanocrystals epitaxially grown on ion-patterned Cu(110) substrates. Applied Physics Letters, 2005, 86, 141906.	3.3	10
123	Self-Organized Formation of Rhomboidal Nanopyramids on fcc(110) Metal Surfaces. Physical Review Letters, 2004, 93, 256103.	7.8	22
124	Time evolution of the local slope during Cu(110) ion sputtering. Physical Review B, 2003, 68, .	3.2	15
125	Nanocrystal Formation and Faceting Instability in Al(110) Homoepitaxy:TrueUpward Adatom Diffusion at Step Edges and Island Corners. Physical Review Letters, 2003, 91, 016102.	7.8	55