

# Luigi Colombo

## List of Publications by Year in descending order

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105  
papers

33,835  
citations

47006

47  
h-index

40979

93  
g-index

108  
all docs

108  
docs citations

108  
times ranked

34680  
citing authors

#	ARTICLE	IF	CITATIONS
1	Large-Area Synthesis of High-Quality and Uniform Graphene Films on Copper Foils. <i>Science</i> , 2009, 324, 1312-1314.	12.6	10,000
2	Graphene, related two-dimensional crystals, and hybrid systems for energy conversion and storage. <i>Science</i> , 2015, 347, 1246501.	12.6	2,925
3	Transfer of Large-Area Graphene Films for High-Performance Transparent Conductive Electrodes. <i>Nano Letters</i> , 2009, 9, 4359-4363.	9.1	2,812
4	Electronics based on two-dimensional materials. <i>Nature Nanotechnology</i> , 2014, 9, 768-779.	31.5	2,505
5	Science and technology roadmap for graphene, related two-dimensional crystals, and hybrid systems. <i>Nanoscale</i> , 2015, 7, 4598-4810.	5.6	2,452
6	Evolution of Graphene Growth on Ni and Cu by Carbon Isotope Labeling. <i>Nano Letters</i> , 2009, 9, 4268-4272.	9.1	1,397
7	Large-Area Graphene Single Crystals Grown by Low-Pressure Chemical Vapor Deposition of Methane on Copper. <i>Journal of the American Chemical Society</i> , 2011, 133, 2816-2819.	13.7	1,161
8	The Role of Surface Oxygen in the Growth of Large Single-Crystal Graphene on Copper. <i>Science</i> , 2013, 342, 720-723.	12.6	977
9	Graphene Films with Large Domain Size by a Two-Step Chemical Vapor Deposition Process. <i>Nano Letters</i> , 2010, 10, 4328-4334.	9.1	896
10	Production and processing of graphene and 2d crystals. <i>Materials Today</i> , 2012, 15, 564-589.	14.2	866
11	Realization of a high mobility dual-gated graphene field-effect transistor with Al <sub>2</sub> O <sub>3</sub> dielectric. <i>Applied Physics Letters</i> , 2009, 94, .	3.3	827
12	Band alignment of two-dimensional transition metal dichalcogenides: Application in tunnel field effect transistors. <i>Applied Physics Letters</i> , 2013, 103, .	3.3	657
13	The Unusual Mechanism of Partial Fermi Level Pinning at Metal-MoS <sub>2</sub> Interfaces. <i>Nano Letters</i> , 2014, 14, 1714-1720.	9.1	629
14	Production and processing of graphene and related materials. <i>2D Materials</i> , 2020, 7, 022001.	4.4	333
15	Quantum engineering of transistors based on 2D materials heterostructures. <i>Nature Nanotechnology</i> , 2018, 13, 183-191.	31.5	319
16	Surface Defects on Natural MoS <sub>2</sub> . <i>ACS Applied Materials &amp; Interfaces</i> , 2015, 7, 11921-11929.	8.0	303
17	Toward the Controlled Synthesis of Hexagonal Boron Nitride Films. <i>ACS Nano</i> , 2012, 6, 6378-6385.	14.6	295
18	Oxygen-activated growth and bandgap tunability of large single-crystal bilayer graphene. <i>Nature Nanotechnology</i> , 2016, 11, 426-431.	31.5	287

#	ARTICLE	IF	CITATIONS
19	Synthesis of Graphene Films on Copper Foils by Chemical Vapor Deposition. Advanced Materials, 2016, 28, 6247-6252.	21.0	266
20	Impurities and Electronic Property Variations of Natural MoS <sub>2</sub> Crystal Surfaces. ACS Nano, 2015, 9, 9124-9133.	14.6	240
21	Nonvolatile Memories Based on Graphene and Related 2D Materials. Advanced Materials, 2019, 31, e1806663.	21.0	230
22	Reducing Extrinsic Performance-Limiting Factors in Graphene Grown by Chemical Vapor Deposition. ACS Nano, 2012, 6, 3224-3229.	14.6	216
23	Large ferroelectric polarization of TiN/Hf0.5Zr0.5O2/TiN capacitors due to stress-induced crystallization at low thermal budget. Applied Physics Letters, 2017, 111, .	3.3	201
24	HfSe <sub>2</sub> Thin Films: 2D Transition Metal Dichalcogenides Grown by Molecular Beam Epitaxy. ACS Nano, 2015, 9, 474-480.	14.6	195
25	Systematic study of electronic structure and band alignment of monolayer transition metal dichalcogenides in Van der Waals heterostructures. 2D Materials, 2017, 4, 015026.	4.4	160
26	Atomic Layer Deposition of Dielectrics on Graphene Using Reversibly Physisorbed Ozone. ACS Nano, 2012, 6, 2722-2730.	14.6	115
27	Effective mobility of single-layer graphene transistors as a function of channel dimensions. Journal of Applied Physics, 2011, 109, .	2.5	114
28	Effect of film thickness on the ferroelectric and dielectric properties of low-temperature (400±Å°C) Hf0.5Zr0.5O2 films. Applied Physics Letters, 2018, 112, .	3.3	111
29	CMOS-Compatible Synthesis of Large-Area, High-Mobility Graphene by Chemical Vapor Deposition of Acetylene on Cobalt Thin Films. ACS Nano, 2011, 5, 7198-7204.	14.6	109
30	Dielectric thickness dependence of carrier mobility in graphene with HfO2 top dielectric. Applied Physics Letters, 2010, 97, .	3.3	97
31	Nucleation and growth of WSe <sub>2</sub> : enabling large grain transition metal dichalcogenides. 2D Materials, 2017, 4, 045019.	4.4	96
32	Rapid Selective Etching of PMMA Residues from Transferred Graphene by Carbon Dioxide. Journal of Physical Chemistry C, 2013, 117, 23000-23008.	3.1	89
33	Resonant Raman spectroscopy of graphene grown on copper substrates. Solid State Communications, 2012, 152, 1317-1320.	1.9	86
34	Partially Fluorinated Graphene: Structural and Electrical Characterization. ACS Applied Materials & Interfaces, 2016, 8, 5002-5008.	8.0	82
35	Scanning tunnelling microscopy of suspended graphene. Nanoscale, 2012, 4, 3065.	5.6	74
36	Two-dimensional weak anti-localization in Bi2Te3 thin film grown on Si(111)-(7×7) surface by molecular beam epitaxy. Applied Physics Letters, 2013, 102, .	3.3	72

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37	A kinetic Monte Carlo simulation method of van der Waals epitaxy for atomistic nucleation-growth processes of transition metal dichalcogenides. Scientific Reports, 2017, 7, 2977.	3.3	72
38	Grain Boundary Effect on Electrical Transport Properties of Graphene. Journal of Physical Chemistry C, 2014, 118, 2338-2343.	3.1	71
39	Ab initio study of metal gate electrode work function. Applied Physics Letters, 2005, 86, 073118.	3.3	64
40	Scaling properties of polycrystalline graphene: a review. 2D Materials, 2017, 4, 012002.	4.4	62
41	<i>In situ</i> studies of Al <sub>2</sub> O <sub>3</sub> and HfO <sub>2</sub> dielectrics on graphite. Applied Physics Letters, 2009, 95, .	3.3	59
42	First principles kinetic Monte Carlo study on the growth patterns of WSe <sub>2</sub> monolayer. 2D Materials, 2016, 3, 025029.	4.4	59
43	Carbon-assisted chemical vapor deposition of hexagonal boron nitride. 2D Materials, 2017, 4, 025117.	4.4	54
44	High surface area graphene foams by chemical vapor deposition. 2D Materials, 2016, 3, 045013.	4.4	53
45	Bilayer Graphene-Hexagonal Boron Nitride Heterostructure Negative Differential Resistance Interlayer Tunnel FET. IEEE Electron Device Letters, 2015, 36, 405-407.	3.9	50
46	Low-voltage operation and high endurance of 5-nm ferroelectric Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> capacitors. Applied Physics Letters, 2018, 113, .	3.3	50
47	WTe <sub>2</sub> thin films grown by beam-interrupted molecular beam epitaxy. 2D Materials, 2017, 4, 025044.	4.4	48
48	Graphene Growth and Device Integration. Proceedings of the IEEE, 2013, 101, 1536-1556.	21.3	46
49	Roadmap for Ferroelectric Domain Wall Nanoelectronics. Advanced Functional Materials, 2022, 32, 2110263.	14.9	45
50	Index of refraction, dispersion, bandgap and light scattering in GeSe and GeSbSe glasses. Journal of Non-Crystalline Solids, 1987, 93, 1-16.	3.1	44
51	Synthesis, Characterization, and Properties of Large-Area Graphene Films. ECS Transactions, 2009, 19, 41-52.	0.5	43
52	Nonpolar Resistive Switching of Multilayer hBN-Based Memories. Advanced Electronic Materials, 2020, 6, 1900979.	5.1	42
53	Polycrystalline Few-Layer Graphene as a Durable Anticorrosion Film for Copper. Nano Letters, 2021, 21, 1161-1168.	9.1	39
54	Low temperature synthesis of graphite on Ni films using inductively coupled plasma enhanced CVD. Journal of Materials Chemistry C, 2015, 3, 5192-5198.	5.5	34

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55	Finite element thermal analysis on the crystal growth of HgCdTe by the travelling heater method. Journal of Crystal Growth, 1989, 98, 595-609.	1.5	33
56	Physics-based 1/f noise model for MOSFETs with nitrided high- $\kappa$ gate dielectrics. Solid-State Electronics, 2008, 52, 711-724.	1.4	30
57	Trimethyl-aluminum and ozone interactions with graphite in atomic layer deposition of Al <sub>2</sub> O <sub>3</sub> . Journal of Applied Physics, 2012, 112, 104110.	2.5	30
58	Ultrathin, wafer-scale hexagonal boron nitride on dielectric surfaces by diffusion and segregation mechanism. 2D Materials, 2017, 4, 025052.	4.4	30
59	Oxygen-Promoted Chemical Vapor Deposition of Graphene on Copper: A Combined Modeling and Experimental Study. ACS Nano, 2018, 12, 9372-9380.	14.6	30
60	Strong spin-orbit coupling and Zeeman spin splitting in angle dependent magnetoresistance of Bi <sub>2</sub> Te <sub>3</sub> . Applied Physics Letters, 2014, 104, .	3.3	29
61	Sub-10 nm Tunable Hybrid Dielectric Engineering on MoS <sub>2</sub> for Two-Dimensional Material-Based Devices. ACS Nano, 2017, 11, 10243-10252.	14.6	28
62	Stress-Induced Crystallization of Thin Hf <sub>1-x</sub> Zr <sub>x</sub> O <sub>2</sub> Films: The Origin of Enhanced Energy Density with Minimized Energy Loss for Lead-Free Electrostatic Energy Storage Applications. ACS Applied Materials & Interfaces, 2019, 11, 5208-5214.	8.0	28
63	Growth Kinetics and Defects of CVD Graphene on Cu. ECS Transactions, 2010, 28, 109-114.	0.5	27
64	Low-frequency noise characteristics of HfSiON gate-dielectric metal-oxide-semiconductor-field-effect transistors. Applied Physics Letters, 2005, 86, 082102.	3.3	26
65	Hydrogen-Robust Submicron IrOx/Pb(Zr, Ti)O <sub>3</sub> /Ir Capacitors for Embedded Ferroelectric Memory. Japanese Journal of Applied Physics, 2001, 40, 2911-2916.	1.5	25
66	Movement of edge dislocations in KCl by large electric fields. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1982, 46, 211-215.	0.6	24
67	Dislocation driven spiral and non-spiral growth in layered chalcogenides. Nanoscale, 2018, 10, 15023-15034.	5.6	24
68	Atomic Layer Deposition of Layered Boron Nitride for Large-Area 2D Electronics. ACS Applied Materials & Interfaces, 2020, 12, 36688-36694.	8.0	22
69	Effect of hydrogen derived from oxygen source on low-temperature ferroelectric TiN/Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> /TiN capacitors. Applied Physics Letters, 2019, 115, .	3.3	21
70	Probing carbon isotope effects on the Raman spectra of graphene with different $C_{13}$ concentrations. Physical Review B, 2015, 92, .	3.2	20
71	WSe <sub>2</sub> Te alloys grown by molecular beam epitaxy. 2D Materials, 2019, 6, 045027.	4.4	20
72	Issues with characterizing transport properties of graphene field effect transistors. Solid State Communications, 2012, 152, 1311-1316.	1.9	19

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73	Direct measurements of dislocation charges in Ca <sup>2+</sup> -doped KC1 by using large electric fields. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1984, 49, 395-407.	0.6	18
74	<i>Ab initio</i> study of Al–Ni bilayers on SiO <sub>2</sub> : Implications to effective work function modulation in gate stacks. Journal of Applied Physics, 2009, 105, .	2.5	16
75	Dependence of h-BN Film Thickness as Grown on Nickel Single-Crystal Substrates of Different Orientations. ACS Applied Materials & Interfaces, 2018, 10, 44862-44870.	8.0	15
76	Ferroelectric TiN/Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> /TiN Capacitors with Low-Voltage Operation and High Reliability for Next-Generation FRAM Applications. , 2018, , .		15
77	Atomic-Layer-Deposited Al <sub>2</sub> O <sub>3</sub> as Gate Dielectrics for Graphene-Based Devices. ECS Transactions, 2009, 19, 225-230.	0.5	14
78	Growth of large diameter (Hg,Cd)Te crystals by incremental quenching. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1985, 3, 100-104.	2.1	12
79	Emerging properties of non-crystalline phases of graphene and boron nitride based materials. Nano Materials Science, 2022, 4, 10-17.	8.8	12
80	Dislocation charges in Ca <sup>2+</sup> -doped KC1 effects of impurity concentration and temperature. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1984, 49, 409-423.	0.6	11
81	A new model for 1/f noise in high- $\mu$ MOSFETs. , 2007, , .		11
82	In-situ Studies of High- $\kappa$ Dielectrics for Graphene-Based Device. ECS Transactions, 2009, 19, 215-224.	0.5	9
83	<i>Large-volume production of HgCdTe by dipping liquid phase epitaxy</i> . , 1994, , .		6
84	Contact Resistance Studies of Metal on HOPG and Graphene Stacks. , 2009, , .		6
85	<i>Application of advanced sensors to the liquid phase epitaxy (LPE) growth of MCT</i> . , 1994, 2228, 342.		5
86	<i>Producibility of Vertically Integrated Photodiode (VIP) scanning focal plane arrays</i> . , 1994, 2228, 237.		5
87	Flicker noise in nitrided high-k dielectric NMOS transistors. , 2005, , .		5
88	Photon-Assisted CVD Growth of Graphene Using Metal Adatoms As Catalysts. Journal of Physical Chemistry C, 2012, 116, 18263-18269.	3.1	4
89	Dislocation charges in pure and Ca <sup>++</sup> -doped kc1 in the temperature range from 82 to 294 k. Radiation Effects, 1983, 75, 227-234.	0.4	3
90	Growth of (Hg,Cd)Te from Te-rich solutions. , 1990, , .		3

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91	Hot-Carrier- and Constant-Voltage-Stress-Induced Low-Frequency Noise in Nitrided High- $k$ Dielectric MOSFETs. IEEE Transactions on Device and Materials Reliability, 2009, 9, 203-208.	2.0	3
92	Fullerene-Based Hybrid Devices for High-Density Nonvolatile Memory. IEEE Nanotechnology Magazine, 2011, 10, 572-575.	2.0	3
93	Cross-Contamination during Ferroelectric Nonvolatile Memory Fabrication. Journal of the Electrochemical Society, 2001, 148, G195.	2.9	2
94	Materials Science of Graphene for Novel Device Applications. ECS Transactions, 2009, 19, 185-199.	0.5	2
95	Ambipolar Gate Modulation Technique for the Reduction of Offset and Flicker Noise in Graphene Hall-Effect Sensors. IEEE Sensors Journal, 2021, 21, 25675-25686.	4.7	2
96	Effect of Nitrogen Incorporation Methods on $1/f$ Noise and Mobility Characteristics in $\text{HfSiON}$ NMOSFETs. AIP Conference Proceedings, 2007, , .	0.4	1
97	Transport Properties of Graphene Transistors. ECS Transactions, 2011, 35, 229-237.	0.5	1
98	Triangular-Pulse Measurement for Hysteresis of High-Performance and Flexible Graphene Field-Effect Transistors. IEEE Electron Device Letters, 2014, 35, 277-279.	3.9	1
99	<title>Intelligent processing of focal plane arrays: sensors and controls for (Hg,Cd)Te LPE</title> . , 1992, 1683, 58.		0
100	<title>Magneto-optical characterization of HgCdTe thin films</title> . , 1994, , .		0
101	Low Frequency Noise Degradation in 45 nm High- $k$ nMOSFETs due to Hot Carrier and Constant Voltage Stress. , 2009, , .		0
102	High- $k$ Dielectrics for Ge, III-V and Graphene MOSFETs. ECS Transactions, 2009, 25, 285-299.	0.5	0
103	Wafer Scale Graphene Field Effect Transistors on Thin Thermal Oxide. ECS Transactions, 2018, 86, 51-57.	0.5	0
104	(Invited) 2D Materials: Crystal Growth for Future Device Structures. ECS Meeting Abstracts, 2019, , .	0.0	0
105	Graphene Mobility Dependence on the Resistivity of Si Wafer. ECS Meeting Abstracts, 2020, MA2020-02, 3550-3550.	0.0	0