

# Luigi Colombo

## List of Publications by Year in descending order

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105  
papers

33,835  
citations

46918

47  
h-index

40881

93  
g-index

108  
all docs

108  
docs citations

108  
times ranked

34680  
citing authors

#	ARTICLE	IF	CITATIONS
1	Emerging properties of non-crystalline phases of graphene and boron nitride based materials. Nano Materials Science, 2022, 4, 10-17.	3.9	12
2	Roadmap for Ferroelectric Domain Wall Nanoelectronics. Advanced Functional Materials, 2022, 32, 2110263.	7.8	45
3	Polycrystalline Few-Layer Graphene as a Durable Anticorrosion Film for Copper. Nano Letters, 2021, 21, 1161-1168.	4.5	39
4	Ambipolar Gate Modulation Technique for the Reduction of Offset and Flicker Noise in Graphene Hall-Effect Sensors. IEEE Sensors Journal, 2021, 21, 25675-25686.	2.4	2
5	Nonpolar Resistive Switching of Multilayer h-BN Based Memories. Advanced Electronic Materials, 2020, 6, 1900979.	2.6	42
6	Atomic Layer Deposition of Layered Boron Nitride for Large-Area 2D Electronics. ACS Applied Materials & Interfaces, 2020, 12, 36688-36694.	4.0	22
7	Production and processing of graphene and related materials. 2D Materials, 2020, 7, 022001.	2.0	333
8	Graphene Mobility Dependence on the Resistivity of Si Wafer. ECS Meeting Abstracts, 2020, MA2020-02, 3550-3550.	0.0	0
9	WSe <sub>2</sub> (2D) Te <sub>x</sub> alloys grown by molecular beam epitaxy. 2D Materials, 2019, 6, 045027.	2.0	20
10	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, .	1.5	21
11	Nonvolatile Memories Based on Graphene and Related 2D Materials. Advanced Materials, 2019, 31, e1806663.	11.1	230
12	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.	4.0	28
13	(Invited) 2D Materials: Crystal Growth for Future Device Structures. ECS Meeting Abstracts, 2019, , .	0.0	0
14	Quantum engineering of transistors based on 2D materials heterostructures. Nature Nanotechnology, 2018, 13, 183-191.	15.6	319
15	Effect of film thickness on the ferroelectric and dielectric properties of low-temperature (400 °C) Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> films. Applied Physics Letters, 2018, 112, .	1.5	111
16	Wafer Scale Graphene Field Effect Transistors on Thin Thermal Oxide. ECS Transactions, 2018, 86, 51-57.	0.3	0
17	Dependence of h-BN Film Thickness as Grown on Nickel Single-Crystal Substrates of Different Orientations. ACS Applied Materials & Interfaces, 2018, 10, 44862-44870.	4.0	15
18	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, .	1.5	50

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19	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
20	Dislocation driven spiral and non-spiral growth in layered chalcogenides. Nanoscale, 2018, 10, 15023-15034.	2.8	24
21	Oxygen-Promoted Chemical Vapor Deposition of Graphene on Copper: A Combined Modeling and Experimental Study. ACS Nano, 2018, 12, 9372-9380.	7.3	30
22	WTe <sub>2</sub> thin films grown by beam-interrupted molecular beam epitaxy. 2D Materials, 2017, 4, 025044.	2.0	48
23	Systematic study of electronic structure and band alignment of monolayer transition metal dichalcogenides in Van der Waals heterostructures. 2D Materials, 2017, 4, 015026.	2.0	160
24	Carbon-assisted chemical vapor deposition of hexagonal boron nitride. 2D Materials, 2017, 4, 025117.	2.0	54
25	Ultrathin, wafer-scale hexagonal boron nitride on dielectric surfaces by diffusion and segregation mechanism. 2D Materials, 2017, 4, 025052.	2.0	30
26	Scaling properties of polycrystalline graphene: a review. 2D Materials, 2017, 4, 012002.	2.0	62
27	Sub-10 nm Tunable Hybrid Dielectric Engineering on MoS <sub>2</sub> for Two-Dimensional Material-Based Devices. ACS Nano, 2017, 11, 10243-10252.	7.3	28
28	Nucleation and growth of WSe <sub>2</sub> : enabling large grain transition metal dichalcogenides. 2D Materials, 2017, 4, 045019.	2.0	96
29	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.	1.6	72
30	Large ferroelectric polarization of TiN/Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> /TiN capacitors due to stress-induced crystallization at low thermal budget. Applied Physics Letters, 2017, 111, .	1.5	201
31	Synthesis of Graphene Films on Copper Foils by Chemical Vapor Deposition. Advanced Materials, 2016, 28, 6247-6252.	11.1	266
32	High surface area graphene foams by chemical vapor deposition. 2D Materials, 2016, 3, 045013.	2.0	53
33	First principles kinetic Monte Carlo study on the growth patterns of WSe <sub>2</sub> monolayer. 2D Materials, 2016, 3, 025029.	2.0	59
34	Partially Fluorinated Graphene: Structural and Electrical Characterization. ACS Applied Materials & Interfaces, 2016, 8, 5002-5008.	4.0	82
35	Oxygen-activated growth and bandgap tunability of large single-crystal bilayer graphene. Nature Nanotechnology, 2016, 11, 426-431.	15.6	287
36	Probing carbon isotope effects on the Raman spectra of graphene with different $C_{13}$ concentrations. Physical Review B, 2015, 92, .	1.1	20

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37	Surface Defects on Natural MoS <sub>2</sub> . ACS Applied Materials & Interfaces, 2015, 7, 11921-11929.	4.0	303
38	Graphene, related two-dimensional crystals, and hybrid systems for energy conversion and storage. Science, 2015, 347, 1246501.	6.0	2,925
39	Bilayer Graphene-Hexagonal Boron Nitride Heterostructure Negative Differential Resistance Interlayer Tunnel FET. IEEE Electron Device Letters, 2015, 36, 405-407.	2.2	50
40	Low temperature synthesis of graphite on Ni films using inductively coupled plasma enhanced CVD. Journal of Materials Chemistry C, 2015, 3, 5192-5198.	2.7	34
41	Impurities and Electronic Property Variations of Natural MoS <sub>2</sub> Crystal Surfaces. ACS Nano, 2015, 9, 9124-9133.	7.3	240
42	HfSe <sub>2</sub> Thin Films: 2D Transition Metal Dichalcogenides Grown by Molecular Beam Epitaxy. ACS Nano, 2015, 9, 474-480.	7.3	195
43	Science and technology roadmap for graphene, related two-dimensional crystals, and hybrid systems. Nanoscale, 2015, 7, 4598-4810.	2.8	2,452
44	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, .	1.5	29
45	Grain Boundary Effect on Electrical Transport Properties of Graphene. Journal of Physical Chemistry C, 2014, 118, 2338-2343.	1.5	71
46	Triangular-Pulse Measurement for Hysteresis of High-Performance and Flexible Graphene Field-Effect Transistors. IEEE Electron Device Letters, 2014, 35, 277-279.	2.2	1
47	Electronics based on two-dimensional materials. Nature Nanotechnology, 2014, 9, 768-779.	15.6	2,505
48	The Unusual Mechanism of Partial Fermi Level Pinning at Metal-MoS <sub>2</sub> Interfaces. Nano Letters, 2014, 14, 1714-1720.	4.5	629
49	Band alignment of two-dimensional transition metal dichalcogenides: Application in tunnel field effect transistors. Applied Physics Letters, 2013, 103, .	1.5	657
50	The Role of Surface Oxygen in the Growth of Large Single-Crystal Graphene on Copper. Science, 2013, 342, 720-723.	6.0	977
51	Two-dimensional weak anti-localization in Bi <sub>2</sub> Te <sub>3</sub> thin film grown on Si(111)-(7×7) surface by molecular beam epitaxy. Applied Physics Letters, 2013, 102, .	1.5	72
52	Graphene Growth and Device Integration. Proceedings of the IEEE, 2013, 101, 1536-1556.	16.4	46
53	Rapid Selective Etching of PMMA Residues from Transferred Graphene by Carbon Dioxide. Journal of Physical Chemistry C, 2013, 117, 23000-23008.	1.5	89
54	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.	1.1	30

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55	Photon-Assisted CVD Growth of Graphene Using Metal Adatoms As Catalysts. Journal of Physical Chemistry C, 2012, 116, 18263-18269.	1.5	4
56	Reducing Extrinsic Performance-Limiting Factors in Graphene Grown by Chemical Vapor Deposition. ACS Nano, 2012, 6, 3224-3229.	7.3	216
57	Issues with characterizing transport properties of graphene field effect transistors. Solid State Communications, 2012, 152, 1311-1316.	0.9	19
58	Resonant Raman spectroscopy of graphene grown on copper substrates. Solid State Communications, 2012, 152, 1317-1320.	0.9	86
59	Production and processing of graphene and 2d crystals. Materials Today, 2012, 15, 564-589.	8.3	866
60	Toward the Controlled Synthesis of Hexagonal Boron Nitride Films. ACS Nano, 2012, 6, 6378-6385.	7.3	295
61	Scanning tunnelling microscopy of suspended graphene. Nanoscale, 2012, 4, 3065.	2.8	74
62	Atomic Layer Deposition of Dielectrics on Graphene Using Reversibly Physisorbed Ozone. ACS Nano, 2012, 6, 2722-2730.	7.3	115
63	Fullerene-Based Hybrid Devices for High-Density Nonvolatile Memory. IEEE Nanotechnology Magazine, 2011, 10, 572-575.	1.1	3
64	Effective mobility of single-layer graphene transistors as a function of channel dimensions. Journal of Applied Physics, 2011, 109, .	1.1	114
65	Large-Area Graphene Single Crystals Grown by Low-Pressure Chemical Vapor Deposition of Methane on Copper. Journal of the American Chemical Society, 2011, 133, 2816-2819.	6.6	1,161
66	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.	7.3	109
67	Transport Properties of Graphene Transistors. ECS Transactions, 2011, 35, 229-237.	0.3	1
68	Dielectric thickness dependence of carrier mobility in graphene with HfO <sub>2</sub> top dielectric. Applied Physics Letters, 2010, 97, .	1.5	97
69	Graphene Films with Large Domain Size by a Two-Step Chemical Vapor Deposition Process. Nano Letters, 2010, 10, 4328-4334.	4.5	896
70	Growth Kinetics and Defects of CVD Graphene on Cu. ECS Transactions, 2010, 28, 109-114.	0.3	27
71	<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, .	1.5	59
72	Materials Science of Graphene for Novel Device Applications. ECS Transactions, 2009, 19, 185-199.	0.3	2

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73	<i>Ab initio</i> study of Al–Ni bilayers on SiO <sub>2</sub> : Implications to effective work function modulation in gate stacks. <i>Journal of Applied Physics</i> , 2009, 105, .	1.1	16
74	Contact Resistance Studies of Metal on HOPG and Graphene Stacks. , 2009, , .		6
75	Low Frequency Noise Degradation in 45 nm High-k nMOSFETs due to Hot Carrier and Constant Voltage Stress. , 2009, , .		0
76	High-k Dielectrics for Ge, III-V and Graphene MOSFETs. <i>ECS Transactions</i> , 2009, 25, 285-299.	0.3	0
77	Atomic-Layer-Deposited Al <sub>2</sub> O <sub>3</sub> as Gate Dielectrics for Graphene-Based Devices. <i>ECS Transactions</i> , 2009, 19, 225-230.	0.3	14
78	Evolution of Graphene Growth on Ni and Cu by Carbon Isotope Labeling. <i>Nano Letters</i> , 2009, 9, 4268-4272.	4.5	1,397
79	Large-Area Synthesis of High-Quality and Uniform Graphene Films on Copper Foils. <i>Science</i> , 2009, 324, 1312-1314.	6.0	10,000
80	Transfer of Large-Area Graphene Films for High-Performance Transparent Conductive Electrodes. <i>Nano Letters</i> , 2009, 9, 4359-4363.	4.5	2,812
81	Hot-Carrier- and Constant-Voltage-Stress-Induced Low-Frequency Noise in Nitrided High- $k$ Dielectric MOSFETs. <i>IEEE Transactions on Device and Materials Reliability</i> , 2009, 9, 203-208.	1.5	3
82	In-situ Studies of High- $\epsilon$ Dielectrics for Graphene-Based Device. <i>ECS Transactions</i> , 2009, 19, 215-224.	0.3	9
83	Synthesis, Characterization, and Properties of Large-Area Graphene Films. <i>ECS Transactions</i> , 2009, 19, 41-52.	0.3	43
84	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, .	1.5	827
85	Physics-based 1/f noise model for MOSFETs with nitrided high- $\epsilon$ gate dielectrics. <i>Solid-State Electronics</i> , 2008, 52, 711-724.	0.8	30
86	Effect of Nitrogen Incorporation Methods on 1/f Noise and Mobility Characteristics in HfSiON NMOSFETs. <i>AIP Conference Proceedings</i> , 2007, , .	0.3	1
87	A new model for 1/f noise in high- $k$ MOSFETs. , 2007, , .		11
88	Flicker noise in nitrided high-k dielectric NMOS transistors. , 2005, , .		5
89	Low-frequency noise characteristics of HfSiON gate-dielectric metal-oxide-semiconductor-field-effect transistors. <i>Applied Physics Letters</i> , 2005, 86, 082102.	1.5	26
90	<i>Ab initio</i> study of metal gate electrode work function. <i>Applied Physics Letters</i> , 2005, 86, 073118.	1.5	64

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91	Cross-Contamination during Ferroelectric Nonvolatile Memory Fabrication. Journal of the Electrochemical Society, 2001, 148, G195.	1.3	2
92	Hydrogen-Robust Submicron IrOx/Pb(Zr, Ti)O3/Ir Capacitors for Embedded Ferroelectric Memory. Japanese Journal of Applied Physics, 2001, 40, 2911-2916.	0.8	25
93	<title>Magneto-optical characterization of HgCdTe thin films</title>. , 1994, , .		0
94	<title>Application of advanced sensors to the liquid phase epitaxy (LPE) growth of MCT</title>. , 1994, 2228, 342.		5
95	<title>Large-volume production of HgCdTe by dipping liquid phase epitaxy</title>. , 1994, , .		6
96	<title>Producibility of Vertically Integrated Photodiode (VIP)<sup><roman>tm</roman></sup> scanning focal plane arrays</title>. , 1994, 2228, 237.		5
97	<title>Intelligent processing of focal plane arrays: sensors and controls for (Hg,Cd)Te LPE</title>. , 1992, 1683, 58.		0
98	Growth of (Hg,Cd)Te from Te-rich solutions. , 1990, , .		3
99	Finite element thermal analysis on the crystal growth of HgCdTe by the travelling heater method. Journal of Crystal Growth, 1989, 98, 595-609.	0.7	33
100	Index of refraction, dispersion, bandgap and light scattering in GeSe and GeSbSe glasses. Journal of Non-Crystalline Solids, 1987, 93, 1-16.	1.5	44
101	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.	0.9	12
102	Dislocation charges in Ca <sup>2+</sup> -doped KCl effects of impurity concentration and temperature. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1984, 49, 409-423.	0.8	11
103	Direct measurements of dislocation charges in Ca <sup>2+</sup> -doped KCl by using large electric fields. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1984, 49, 395-407.	0.8	18
104	Dislocation charges in pure and Ca <sup>++</sup> -doped kcl in the temperature range from 82 to 294 k. Radiation Effects, 1983, 75, 227-234.	0.4	3
105	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.	0.8	24