

Carmine Senatore

List of Publications by Year in descending order

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125
papers

4,335
citations

172386

29
h-index

118793

62
g-index

127
all docs

127
docs citations

127
times ranked

3075
citing authors

#	ARTICLE	IF	CITATIONS
1	FCC-ee: The Lepton Collider. European Physical Journal: Special Topics, 2019, 228, 261-623.	1.2	424
2	FCC-hh: The Hadron Collider. European Physical Journal: Special Topics, 2019, 228, 755-1107.	1.2	367
3	FCC Physics Opportunities. European Physical Journal C, 2019, 79, 1.	1.4	346
4	Mechanism of Enhancement in Electromagnetic Properties of MgB ₂ by Nano SiC Doping. Physical Review Letters, 2007, 98, 097002.	2.9	253
5	Progresses and challenges in the development of high-field solenoidal magnets based on RE123 coated conductors. Superconductor Science and Technology, 2014, 27, 103001.	1.8	229
6	Electro-mechanical properties of REBCO coated conductors from various industrial manufacturers at 77 K, self-field and 4.2 K, 19 T. Superconductor Science and Technology, 2015, 28, 045011.	1.8	150
7	Upper critical fields well above 100 T for the superconductor SmFeAsO . $\frac{\text{SmFeAsO}}{1.1} \times 120$	1.1	120
8	HE-LHC: The High-Energy Large Hadron Collider. European Physical Journal: Special Topics, 2019, 228, 1109-1382.	1.2	108
9	Field and temperature scaling of the critical current density in commercial REBCO coated conductors. Superconductor Science and Technology, 2016, 29, 014002.	1.8	106
10	Development and large volume production of extremely high current density YBa ₂ Cu ₃ O ₇ superconducting wires for fusion. Scientific Reports, 2021, 11, 2084.	1.6	106
11	The EuCARD-2 Future Magnets European Collaboration for Accelerator-Quality HTS Magnets. IEEE Transactions on Applied Superconductivity, 2015, 25, 1-7.	1.1	103
12	Microstructure, composition and critical current density of superconducting Nb ₃ Sn wires. Cryogenics, 2008, 48, 293-307.	0.9	101
13	Improved critical current densities in B ₄ C doped MgB ₂ based wires. Superconductor Science and Technology, 2006, 19, 1030-1033.	1.8	92
14	Strong enhancement of J_c and B_{irr} in binary MgB_2 wires after cold high pressure densification. Superconductor Science and Technology, 2009, 22, 085002.	1.8	81
15	The 16 T Dipole Development Program for FCC. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-5.	1.1	77
16	Temperature and time scaling of the peak-effect vortex configuration in FeTe _{0.7} Se _{0.3} . Physical Review B, 2012, 85.	1.1	70
17	The enhanced J_c and B_{irr} of MgB_2 wires and tapes alloyed with C ₄ H ₆ O ₅ (malic acid) after cold high pressure densification. Superconductor Science and Technology, 2009, 22, 095004.	1.8	61
18	Double disordered YBCO coated conductors of industrial scale: high currents in high magnetic field. Superconductor Science and Technology, 2015, 28, 114007.	1.8	42

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19	High-field thermal transport properties of REBCO coated conductors. Superconductor Science and Technology, 2015, 28, 025001.	1.8	42
20	AMS-100: The next generation magnetic spectrometer in space – An international science platform for physics and astrophysics at Lagrange point 2. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 944, 162561.	0.7	41
21	The EuCARD2 Future Magnets Program for Particle Accelerator High-Field Dipoles: Review of Results and Next Steps. IEEE Transactions on Applied Superconductivity, 2018, 28, 1-10.	1.1	40
22	Magnetic and in vitro heating properties of implants formed in situ from injectable formulations and containing superparamagnetic iron oxide nanoparticles (SPIONs) embedded in silica microparticles for magnetically induced local hyperthermia. Journal of Magnetism and Magnetic Materials, 2011, 323, 1054-1063.	1.0	38
23	Status of the 16 T Dipole Development Program for a Future Hadron Collider. IEEE Transactions on Applied Superconductivity, 2018, 28, 1-5.	1.1	36
24	Systematic Study of the Contact Resistance Between REBCO Tapes: Pressure Dependence in the Case of No-Insulation, Metal Co-Winding and Metal-Insulation. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.1	36
25	Distribution of T_c from calorimetry and the determination of Sn gradients in bronze route Nb ₃ Sn wires with an internal and external Ti source. Superconductor Science and Technology, 2007, 20, S217-S222.	1.8	35
26	The CERN FCC Conductor Development Program: A Worldwide Effort for the Future Generation of High-Field Magnets. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-9.	1.1	35
27	HTS Accelerator Magnet and Conductor Development in Europe. Instruments, 2021, 5, 8.	0.8	35
28	Optimization of Nb ₃ Sn and MgB ₂ wires. Superconductor Science and Technology, 2008, 21, 054015.	1.8	31
29	Magnetic relaxation of type-II superconductors in a mixed state of entrapped and shielded flux. Physical Review B, 2004, 70, .	1.1	29
30	Transport properties and exponential n-values of Fe/MgB ₂ tapes with various MgB ₂ particle sizes. Physica C: Superconductivity and Its Applications, 2004, 401, 305-309.	0.6	29
31	An equation for the quench propagation velocity valid for high field magnet use of REBCO coated conductors. Applied Physics Letters, 2016, 108, .	1.5	29
32	Vortex dynamics and pinning properties analysis of MgB ₂ bulk samples by ac susceptibility measurements. Superconductor Science and Technology, 2003, 16, 183-187.	1.8	28
33	Ionic liquid gating of ultra-thin YBa ₂ Cu ₃ O _{7-δ} films. Applied Physics Letters, 2016, 109, .	1.5	26
34	Measurement and Numerical Evaluation of AC Losses in a ReBCO Roebel Cable at 4.5 K. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-7.	1.1	26
35	Harmonics of the AC susceptibility as probes to differentiate the various creep models. Physica C: Superconductivity and Its Applications, 2004, 404, 289-292.	0.6	25
36	Direct observation of Nb ₃ Sn lattice deformation by high-energy x-ray diffraction in internal-tin wires subject to mechanical loads at 4.2 K. Superconductor Science and Technology, 2012, 25, 054006.	1.8	24

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37	Electro-mechanical properties of PIT Nb ₃ Sn wires under transverse stress: experimental results and FEM analysis. Superconductor Science and Technology, 2015, 28, 055014.	1.8	24
38	Status of the Demonstrator Magnets for the EuCARD-2 Future Magnets Project. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-7.	1.1	24
39	The 16 T Dipole Development Program for FCC and HE-LHC. IEEE Transactions on Applied Superconductivity, 2019, , 1-1.	1.1	24
40	Simultaneous Addition of B ₄ C+SiC to MgB ₂ Wires and Consequences for J_{c} and B_{irr} . IEEE Transactions on Applied Superconductivity, 2007, 17, 2846-2849.	1.1	23
41	BiOCuS: A new superconducting compound with oxypnictide-related structure. Physica C: Superconductivity and Its Applications, 2010, 470, S356-S357.	0.6	23
42	Stress distribution and lattice distortions in Nb ₃ Sn multifilament wires under uniaxial tensile loading at 4.2 K. Superconductor Science and Technology, 2014, 27, 044021.	1.8	23
43	Real-Space Vortex Glass imaging and the Vortex Phase Diagram of $SnMo_6$. Physical Review Letters, 2009, 103, 257001.	1.9	22
44	Improved film density for coatings at grazing angle of incidence in high power impulse magnetron sputtering with positive pulse. Thin Solid Films, 2020, 706, 138058.	0.8	22
45	Specific heat of Nb ₃ Sn wires. Superconductor Science and Technology, 2006, 19, 263-266.	1.8	21
46	A New Generation of In Situ MgB_2 Wires With Improved J_{c} and B_{irr} Values Obtained by Cold Densification (CHPD). IEEE Transactions on Applied Superconductivity, 2011, 21, 2649-2654.	1.1	20
47	Extensive Characterization of the 1 mm PIT Nb_3Sn Strand for the 13-T FRESCA2 Magnet. IEEE Transactions on Applied Superconductivity, 2012, 22, 6000304-6000304.	1.1	20
48	Transverse Thermal Conductivity of REBCO Coated Conductors. IEEE Transactions on Applied Superconductivity, 2015, 25, 1-4.	1.1	20
49	Advances in the Development of a 10-kA Class REBCO Cable for the EuCARD2 Demonstrator Magnet. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-8.	1.1	20
50	Double-Disordered HTS-Coated Conductors and Their Assemblies Aimed for Ultra-High Fields: Large Area Tapes. IEEE Transactions on Applied Superconductivity, 2018, 28, 1-6.	1.1	20
51	Generation of 25 T with an all-superconducting magnet system: field profile and field quality measurements of a layer-wound 4 T REBCO insert coil for a 21 T LTS magnet. Superconductor Science and Technology, 2019, 32, 075005.	1.8	20
52	Non-linear magnetic response of MgB ₂ bulk superconductors. Physica C: Superconductivity and Its Applications, 2004, 401, 182-186.	0.6	19
53	Anisotropy of J_{c} in Ex Situ MgB_2 Fe Monofilamentary Tapes. IEEE Transactions on Applied Superconductivity, 2005, 15, 3196-3199.	1.1	19
54	Specific Heat, A Method to Determine the T_{c} Distribution in Industrial Nb_3Sn Wires Prepared by Various Techniques. IEEE Transactions on Applied Superconductivity, 2007, 17, 2611-2614.	1.1	18

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55	Effect of quasi-hydrostatic radial pressure on I_c of Nb_3Sn wires. Superconductor Science and Technology, 2012, 25, 115002.	1.8	18
56	Effect of cold high pressure deformation on the properties of <i>ex situ</i> MgB_2 wires. Superconductor Science and Technology, 2013, 26, 105019.	1.8	17
57	Improvement of electromechanical properties of an ITER internal tin Nb_3Sn wire. Journal of Applied Physics, 2010, 108, .	1.1	16
58	Improved transport properties and connectivity of in situ MgB_2 wires obtained by Cold High Pressure Densification (CHPD). Physica C: Superconductivity and Its Applications, 2011, 471, 1119-1123.	0.6	16
59	A European Collaboration to Investigate Superconducting Magnets for Next Generation Heavy Ion Therapy. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-7.	1.1	15
60	Publisher's Note: Mechanism of Enhancement in Electromagnetic Properties of MgB_2 by Nano SiC Doping [Phys. Rev. Lett. 98, 097002 (2007)]. Physical Review Letters, 2007, 98, .	2.9	14
61	Improvement of J_c by cold high pressure densification of binary, 18-filament <i>in situ</i> MgB_2 wires. Superconductor Science and Technology, 2011, 24, 075013.	1.8	14
62	Quantitative correlation between the void morphology of niobium-tin wires and their irreversible critical current degradation upon mechanical loading. Scientific Reports, 2018, 8, 6589.	1.6	14
63	Current transport, magnetic and elemental properties of densified Ag-sheathed $Ba_{1-x}K_xFe_2As_2$ tapes. Superconductor Science and Technology, 2020, 33, 095008.	1.8	14
64	Reversible stress-induced anomalies in the strain function of Nb_3Sn wires. Superconductor Science and Technology, 2012, 25, 025015.	1.8	13
65	Variation of T_c , lattice parameter and atomic ordering in Nb_3Sn platelets irradiated with 12 MeV protons: correlation with the number of induced Frenkel defects. Superconductor Science and Technology, 2017, 30, 054003.	1.8	13
66	Evolution of T_c , resistivity and superconductivity in Nb_3Sn under pressure. Physical Review B, 2017, 95, .	1.1	13
67	Very-high thermal and electrical conductivity in overpressure-processed $Bi_2Sr_2CaCu_2O_{8+x}$ wires. Materials Research Express, 2018, 5, 056001.	0.8	13
68	Very high upper critical fields and enhanced critical current densities in Nb_3Sn superconductors based on $Nb-Ta-Zr$ alloys and internal oxidation. JPhys Materials, 2021, 4, 025003.	1.8	13
69	Enhanced Connectivity and Percolation in Binary and Doped In Situ MgB_2 Wires After Cold High Pressure Densification. IEEE Transactions on Applied Superconductivity, 2011, 21, 2680-2685.	1.1	12
70	Critical current of a rapid-quenched Nb_3Al conductor under transverse compressive and axial tensile stress. Superconductor Science and Technology, 2011, 24, 035011.	1.8	12
71	Formation and upper critical fields of the two distinct A15 phases in the subelements of powder-in-tube Nb_3Sn wires. Applied Physics Letters, 2013, 102, 012601.	1.5	12
72	Temperature and Field Dependence of the Quench Propagation Velocity in Industrial REBCO Coated Conductors. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-5.	1.1	12

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73	Determination of the electromechanical limits of high-performance Nb_3Sn Rutherford cables under transverse stress from a single-wire experiment. <i>Physical Review Research</i> , 2020, 2, .	1.3	12
74	Electrical and Thermo-Physical Properties of Ni-Alloy Reinforced Bi-2223 Conductors. <i>IEEE Transactions on Applied Superconductivity</i> , 2019, 29, 1-5.	1.1	11
75	Machine learning applied to X-ray tomography as a new tool to analyze the voids in RRP Nb_3Sn wires. <i>Scientific Reports</i> , 2021, 11, 7767.	1.6	11
76	Heating-Induced Performance Degradation of $\text{REBa}_2\text{Cu}_3\text{O}_{7-x}$ Coated Conductors: An Oxygen Out-Diffusion Scenario with Two Activation Energies. <i>ACS Applied Electronic Materials</i> , 2022, 4, 1318-1326.	2.0	11
77	Specific Heat and Magnetic Relaxation Analysis of MgB_2 Bulk Samples With and Without Additives. <i>IEEE Transactions on Applied Superconductivity</i> , 2007, 17, 2941-2944.	1.1	10
78	Toward a standard for critical current versus axial strain measurements of Nb_3Sn . <i>Superconductor Science and Technology</i> , 2012, 25, 054002.	1.8	10
79	A Size-Constrained 3-T REBCO Insert Coil for a 21-T LTS Magnet: Mechanical Investigations, Conductor Selection, Coil Design, and First Coil Tests. <i>IEEE Transactions on Applied Superconductivity</i> , 2016, 26, 1-9.	1.1	10
80	Effects of the initial axial strain state on the response to transverse stress of high-performance RRP Nb_3Sn wires. <i>Superconductor Science and Technology</i> , 2021, 34, 035008.	1.8	10
81	Thermal Conductivity of Industrial Nb_3Sn Wires Fabricated by Various Techniques. <i>IEEE Transactions on Applied Superconductivity</i> , 2013, 23, 6000404-6000404.	1.1	9
82	Intrawire resistance, AC loss and strain dependence of critical current in MgB_2 wires with and without cold high-pressure densification. <i>Superconductor Science and Technology</i> , 2014, 27, 075002.	1.8	9
83	Electrical Connectivity in MgB_2 : The Role of Precursors and Processing Routes in Controlling Voids and Detrimental Secondary Phases. <i>IEEE Transactions on Applied Superconductivity</i> , 2017, 27, 1-6.	1.1	9
84	High Current Probe for $I_c(B,T)$ Measurements With ± 0.01 K Precision: HTS Current Leads and Active Temperature Stabilization System. <i>IEEE Transactions on Applied Superconductivity</i> , 2018, 28, 1-6.	1.1	9
85	Investigation on the Effect of Ta Additions on J_c and n of $(\text{Nb}, \text{Ti})_3\text{Sn}$ Bronze Processed Multifilamentary Wires at High Magnetic Fields. <i>IEEE Transactions on Applied Superconductivity</i> , 2007, 17, 2564-2567.	1.1	8
86	Vortex phase diagram and temperature-dependent second-peak effect in overdoped $\text{Bi}_2\text{Sr}_2\text{CuO}_6+\text{I}$ crystals. <i>Physical Review B</i> , 2010, 81, .	1.1	8
87	Assessing composition gradients in multifilamentary superconductors by means of magnetometry methods. <i>Superconductor Science and Technology</i> , 2017, 30, 014011.	1.8	8
88	Transport Properties of a PIT- Nb_3Sn Strand Under Transverse Compressive and Axial Tensile Stress. <i>IEEE Transactions on Applied Superconductivity</i> , 2008, 18, 976-979.	1.1	7
89	Structure, stability and relaxivity of trinuclear triangular complexes. <i>Dalton Transactions</i> , 2011, 40, 4284.	1.6	7
90	Magnetization and Inter-Filament Contact in HEP and ITER Bronze-Route Nb_3Sn Wires. <i>IEEE Transactions on Applied Superconductivity</i> , 2011, 21, 3373-3376.	1.1	7

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91	3-D Thermal-Electric Finite Element Model of a Nb ₃ Sn Coil During a Quench. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-6.	1.1	7
92	High-field superconductivity in C-doped MgB ₂ bulk samples prepared by a rapid synthesis route. Scientific Reports, 2020, 10, 17656.	1.6	7
93	Interplay between cold densification and malic acid addition (C ₄ H ₆ O ₅) for the fabrication of near-isotropic MgB ₂ conductors for magnet application. Journal of Magnesium and Alloys, 2020, 8, 493-498.	5.5	7
94	Third Harmonic Susceptibility and Pinning Properties of Fe/MgB ₂ Tapes. IEEE Transactions on Applied Superconductivity, 2005, 15, 3329-3332.	1.1	6
95	Critical Current Anisotropy, Pinning Properties and Relaxation Rate of MgB ₂ /Fe Tapes. AIP Conference Proceedings, 2006, . .	0.3	6
96	Technical aspects of cold high pressure densification (CHPD) on long lengths of In Situ MgB ₂ wires with enhanced J _c values. , 2012, . .		6
97	Variation of $(J_{m c}/J_{m c0})_{max}$ of Binary and Ternary Alloyed RRP and PIT Nb ₃ Sn Wires Exposed to Fast Neutron Irradiation at Ambient Reactor Temperature. IEEE Transactions on Applied Superconductivity, 2013, 23, 8001404-8001404.	1.1	6
98	Thermal conductivity and stability of commercial MgB ₂ conductors. Superconductor Science and Technology, 2015, 28, 115014.	1.8	6
99	High-Performance Superconductors for Fusion Nuclear Science Facility. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-5.	1.1	6
100	Design, construction, and testing of no-insulation small subscale solenoids for compact tokamaks. Superconductor Science and Technology, 2021, 34, 105003.	1.8	6
101	Temperature induced degradation of Nb-Ti/Cu composite superconductors. Journal of Physics: Conference Series, 2010, 234, 022031.	0.3	5
102	Finite-Element Analysis of Transverse Compressive and Thermal Loads on Nb ₃ Sn Wires With Voids. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-5.	1.1	4
103	Strong improvement of the transport characteristics of YBa ₂ Cu ₃ O _{7-x} grain boundaries using ionic liquid gating. Scientific Reports, 2018, 8, 17703.	1.6	4
104	Reduced strain sensitivity of the critical current of Nb ₃ Sn multifilamentary wires. Journal of Applied Physics, 2019, 126, .	1.1	4
105	A methodology for the analysis of the three-dimensional mechanical behavior of a Nb ₃ Sn superconducting accelerator magnet during a quench. Superconductor Science and Technology, 2021, 34, 084003.	1.8	4
106	Tomography analysis tool: an application for image analysis based on unsupervised machine learning. IOP SciNotes, 2022, 3, 015201.	0.4	4
107	Harmonic susceptibilities and pinning properties of MgB ₂ bulk superconductors. Physica C: Superconductivity and Its Applications, 2003, 388-389, 161-162.	0.6	3
108	Correlation between superconducting transition width and relaxation rates in various industrial Y123-coated conductors. Superconductor Science and Technology, 2009, 22, 095016.	1.8	3

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109	First Experimental Results on Damage Limits of Superconducting Accelerator Magnet Components Due to Instantaneous Beam Impact. IEEE Transactions on Applied Superconductivity, 2018, 28, 1-10.	1.1	3
110	On the mechanical behavior of a Nb3Sn superconducting coil during a quench: Two-dimensional finite element analysis of a quench heater protected magnet. Cryogenics, 2020, 106, 103054.	0.9	3
111	STUDY OF THE VORTEX DYNAMIC IN MgB2 BY HARMONIC SUSCEPTIBILITY MEASUREMENTS. International Journal of Modern Physics B, 2003, 17, 655-660.	1.0	2
112	NUMERICAL CALCULATION OF THE CRITICAL STATE IN SUPERCONDUCTING TAPES ABOVE THE FULL PENETRATION FIELD. International Journal of Modern Physics B, 2003, 17, 916-921.	1.0	2
113	Critical Current Anisotropy and Texture Gradients in <i>ex situ</i> MgB_2/Fe Tapes. IEEE Transactions on Applied Superconductivity, 2007, 17, 2834-2837.	1.1	2
114	Rapid Synthesis of MgB_2 by Inductive Heating. IEEE Transactions on Applied Superconductivity, 2018, 28, 1-5.	1.1	2
115	Hysteresis losses in BSCCO(2223)/Ag multifilamentary tapes. Physica C: Superconductivity and Its Applications, 2002, 372-376, 1823-1826.	0.6	1
116	Low Critical Current Sensitivity of RHQT Nb_3Al Wires Under Transverse Compressive Stress Up to 300 MPa. IEEE Transactions on Applied Superconductivity, 2011, 21, 2593-2596.	1.1	1
117	Phase Formation, Composition and T_c Distribution of Binary and Ta-Alloyed Nb_3Sn Wires Produced by Various Techniques. IEEE Transactions on Applied Superconductivity, 2012, 22, 6001304-6001304.	1.1	1
118	Thermal conductivities and thermal runaways of superconducting MgB2 wires stabilized by an Al + Al2O3 sheath. Superconductor Science and Technology, 2019, 32, 115007.	1.8	1
119	Significant reduction of critical current anisotropy in malic acid treated MgB2 tapes. Journal of Magnetism and Magnetic Materials, 2020, 497, 166046.	1.0	1
120	In-Field Thermal Conductivity of Ag and Cu/Ag $\text{Ba}_{1-x}\text{K}_x\text{Fe}_2\text{As}_2$ Composite Conductors. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.1	1
121	Determination of the texturing gradient in <i>ex situ</i> MgB_2/Fe tapes examined by x-ray diffraction and its effects on the pinning force. Journal of Applied Physics, 2006, 100, 113913.	1.1	0
122	Correlation Between the Overall T_c Distribution in Bronze Route Nb_3Sn Wires and the Sn Gradient in the Filaments. IEEE Transactions on Applied Superconductivity, 2008, 18, 1010-1013.	1.1	0
123	Cu Ti Formation in Nb Ti/Cu Superconducting Strand Monitored by <i>In Situ</i> Techniques. Defect and Diffusion Forum, 2010, 297-301, 695-701.	0.4	0
124	Magnetic Relaxation in $\text{FeTe}_0.7\text{Se}_0.3$. Physics Procedia, 2012, 36, 710-715.	1.2	0
125	Material and Conductor Properties Relevant for Applications: A Fundamental Study. Asian Journal of Social Science Studies, 2016, , 389-418.	0.0	0