

# Matthieu Le Tacon

## List of Publications by Year in descending order

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102  
papers

6,973  
citations

87888

38  
h-index

56724

83  
g-index

103  
all docs

103  
docs citations

103  
times ranked

4928  
citing authors

#	ARTICLE	IF	CITATIONS
1	Long-Range Incommensurate Charge Fluctuations in $(Y,Nd)Ba_2Cu_3O_{6+x}$ . Science, 2012, 337, 821-825.	12.6	938
2	Charge Order Driven by Fermi-Arc Instability in $Bi_2Sr_2\tilde{C}LaCuO_6$ . Science, 2014, 343, 390-392.	12.6	512
3	Ubiquitous Interplay Between Charge Ordering and High-Temperature Superconductivity in Cuprates. Science, 2014, 343, 393-396.	12.6	506
4	Intense paramagnon excitations in a large family of high-temperature superconductors. Nature Physics, 2011, 7, 725-730.	16.7	349
5	Optically enhanced coherent transport in $YBa_2Cu_3O_{6.5}$ by ultrafast redistribution of interlayer coupling. Nature Materials, 2014, 13, 705-711.	27.5	333
6	Two energy scales and two distinct quasiparticle dynamics in the superconducting state of underdoped cuprates. Nature Physics, 2006, 2, 537-543.	16.7	301
7	Resonant x-ray scattering study of charge density wave correlations in $YBa_2Cu_3O_{6+x}$ . Physical Review B, 2014, 90, .	3.2	262
8	Charge order and its connection with Fermi-liquid charge transport in a pristine high- $T_c$ cuprate. Nature Communications, 2014, 5, 5875.	12.8	259
9	Distinct Charge Orders in the Planes and Chains of Ortho-II Ordered $YBa_2Cu_3O_{6+x}$ Superconductors Identified by Resonant Elastic X-ray Scattering. Physical Review Letters, 2012, 109, 167001.	7.8	254
10	Inelastic X-ray scattering in $YBa_2Cu_3O_{6.6}$ reveals giant phonon anomalies and elastic central peak due to charge-density-wave formation. Nature Physics, 2014, 10, 52-58.	16.7	237
11	Optically induced coherent transport far above $T_c$ in underdoped $YBa_2Cu_3O_{6+x}$ . Momentum-Dependent Charge Correlations in $YBa_2Cu_3O_{6+x}$ . Physical Review Letters, 2013, 110, 187001.	3.2	230
12	Momentum-Dependent Charge Correlations in $YBa_2Cu_3O_{6+x}$ . Probed by Resonant X-Ray Scattering: Evidence for Three Competing Phases. Physical Review Letters, 2013, 110, 187001.	7.8	168
13	Uniaxial pressure control of competing orders in a high-temperature superconductor. Science, 2018, 362, 1040-1044.	12.6	122
14	Capture of heavy hydrogen isotopes in a metal-organic framework with active Cu(I) sites. Nature Communications, 2017, 8, 14496.	12.8	98
15	Strong anharmonicity induces quantum melting of charge density wave in $HxSr_{1-x}CuO_2$ under pressure. Physical Review B, 2015, 92, .		
16	Re-entrant charge order in overdoped $(Bi,Pb)_{2.12}Sr_{1.88}CuO_6$ outside the pseudogap regime. Nature Materials, 2018, 17, 697-702.	27.5	93
17	Tunable Charge and Spin Order in $PrNiO_3$ Thin Films and Superlattices. Physical Review Letters, 2014, 113, 227206.	7.8	91
18	Influence of apical oxygen on the extent of in-plane exchange interaction in cuprate superconductors. Nature Physics, 2017, 13, 1201-1206.	16.7	90

#	ARTICLE	IF	CITATIONS
19	Dispersive spin excitations in highly overdoped cuprates revealed by resonant inelastic x-ray scattering. <i>Physical Review B</i> , 2013, 88, .	3.2	83
20	Long-range transfer of electron-phonon coupling in oxide superlattices. <i>Nature Materials</i> , 2012, 11, 675-681.	27.5	82
21	Collective Nature of Spin Excitations in Superconducting Cuprates Probed by Resonant Inelastic X-Ray Scattering. <i>Physical Review Letters</i> , 2015, 114, 217003.	7.8	81
22	Persistent Paramagnons Deep in the Metallic Phase of $\text{Sr}_2\text{CuO}_2$ . <i>Physical Review Letters</i> , 2016, 117, 107001.	7.8	68
23	Anharmonic suppression of charge density waves in $\text{ZrNb}_2\text{O}_8$ . <i>Physical Review B</i> , 2012, 86, .	3.2	66
24	Doping-dependent charge order correlations in electron-doped cuprates. <i>Science Advances</i> , 2016, 2, e1600782.	10.3	65
25	Raman Scattering from Higgs Mode Oscillations in the Two-Dimensional Antiferromagnet $\text{Ca}_2\text{CuO}_2\text{F}_2$ . <i>Physical Review Letters</i> , 2016, 116, 136401.	7.8	65
26	Two-Magnon Raman Scattering and Pseudospin-Lattice Interactions in $\text{Sr}_3\text{Ir}_2\text{O}_{10}$ . <i>Physical Review Letters</i> , 2016, 116, 136401.	7.8	63
27	Synchrotron x-ray scattering study of charge-density-wave order in $\text{HgBa}_2\text{CuO}_4$ . <i>Physical Review B</i> , 2017, 96, .	3.2	62
28	Direct observation of charge order in underdoped and optimally doped $\text{Bi}_2\text{CuO}_2$ . <i>Physical Review B</i> , 2016, 94, .	3.2	51
29	Understanding the Complex Phase Diagram of Uranium: The Role of Electron-Phonon Coupling. <i>Physical Review Letters</i> , 2011, 107, 136401.	7.8	47
30	Femtosecond x rays link melting of charge-density wave correlations and light-enhanced coherent transport in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ . <i>Physical Review Letters</i> , 2016, 116, 136401.	3.2	46
31	Long-range charge-density-wave proximity effect at cuprate/manganate interfaces. <i>Nature Materials</i> , 2016, 15, 831-834.	27.5	46
32	Breakpoint in the evolution of the gap through the cuprate phase diagram. <i>Physical Review B</i> , 2008, 77, .	3.2	43
33	The simultaneous measurement of energy and linear polarization of the scattered radiation in resonant inelastic soft x-ray scattering. <i>Review of Scientific Instruments</i> , 2014, 85, 115104.	1.3	43
34	Anharmonicity due to Electron-Phonon Coupling in Magnetite. <i>Physical Review Letters</i> , 2013, 110, 207204.	7.8	42
35	Phonon density of states in $\text{NdFeAsO}_{1-x}\text{Fx}$ . <i>Physical Review B</i> , 2008, 78, .	3.2	41
36	Incommensurate Phonon Anomaly and the Nature of Charge Density Waves in Cuprates. <i>Physical Review X</i> , 2018, 8, .	8.9	41

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37	Temperature Dependence of the Gap Size near the Brillouin-Zone Nodes of $\text{HgBa}_2\text{CuO}$ . Physical Review Letters, 2008, 101, 097003.	7.8	40
38	Crystal growth and intrinsic magnetic behaviour of $\text{Sr}_2\text{IrO}_4$ . Philosophical Magazine, 2016, 96, 413-426.	1.6	39
39	Complex magnetic order in nickelate slabs. Nature Physics, 2018, 14, 1097-1102. Comparison of charge modulations in $\text{La}_{1.875}\text{Ba}_{0.125}\text{CuO}_4$	16.7	37
40	Short-Range Correlations in Magnetite above the Verwey Temperature. Physical Review X, 2014, 4, .	3.2	36
41	Raman scattering study of vibrational and magnetic excitations in $\text{Sr}_2\text{LaO}_4$	8.9	36
42	-edge resonant inelastic x-ray scattering of orbital and spin excitations in $\text{NdBa}_2\text{CuO}_7$	3.2	36
43	Coupling between dynamic magnetic and charge-order correlations in the cuprate superconductor $\text{NdBa}_2\text{CuO}_7$	3.2	35
44	Magnetic excitations in stripe-ordered $\text{La}_{1.875}\text{Ba}_{0.125}\text{CuO}_4$ studied using resonant inelastic x-ray scattering. Physical Review B, 2013, 88, .	3.2	32
45	High field charge order across the phase diagram of $\text{YBa}_2\text{Cu}_3\text{O}_y$ . Npj Quantum Materials, 2018, 3, .	5.2	32
46	Impurity-Induced Local Magnetism and Density of States in the Superconducting State of $\text{YBa}_2\text{Cu}_3\text{O}_7$ . Physical Review Letters, 2006, 96, 127005.	7.8	31
47	Inelastic x-ray scattering study of superconducting $\text{SmFeAsO}$ crystals: Evidence for strong momentum-dependent doping-induced renormalizations of optical axis polarized Fe mode with Fe and Se concentrations in $\text{Fe}_{1-x}\text{Se}_x\text{As}_{1-x}\text{O}$	3.2	30
48	Feedback Effect on High-Energy Magnetic Fluctuations in the Model High-Temperature Superconductor $\text{HgBa}_2\text{CuO}_4$ Observed by Electronic Raman Scattering. Physical Review Letters, 2012, 108, 227003.	7.8	26
49	Crossover from Collective to Incoherent Spin Excitations in Superconducting Cuprates Probed by Detuned Resonant Inelastic X-Ray Scattering. Physical Review Letters, 2017, 119, 097001.	7.8	26
50	Rapid suppression of the charge density wave in $\text{YBa}_2\text{CuO}_7$ under hydrostatic pressure. Physical Review B, 2018, 97, .	7.8	26
51	Site-Selective Probe of Magnetic Excitations in Rare-Earth Nickelates Using Resonant Inelastic X-ray Scattering. Physical Review X, 2018, 8, .	8.9	26
52	Charge Density Waves in $\text{YBa}_2\text{CuO}_7$ Probed by Resonant X-Ray Scattering under Uniaxial Comp. Physical Review Letters, 2021, 126, 037002.	7.8	26

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55	Lattice dynamical signature of charge density wave formation in underdoped $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ . Physical Review B, 2013, 88, .	3.2	25
56	Doping-Dependent Photon Scattering Resonance in the Model High-Temperature Superconductor $\text{HgBa}_2\text{CuO}_8$ by Raman Scattering and Optical Ellipsometry. Physical Review Letters, 2013, 111, 187001.	7.8	25
57	Raman light scattering on ultra-thin films of $\text{LaNiO}_3$ under compressive strain. Physica B: Condensed Matter, 2015, 460, 196-198.	2.7	25
58	Investigations of the relationship between $T_c$ and the superconducting gap under magnetic and nonmagnetic impurity substitutions in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ . Physical Review B, 2015, 91, 020501.	3.2	21
59	Heat capacity on data of DSC calorimetry and thermodynamic functions of barium cerate doped by holmium and indium oxides in the temperature range of 200–700 K. Journal of Thermal Analysis and Calorimetry, 2017, 130, 1125-1131.	3.6	19
60	Two distinct electronic contributions in the fully symmetric Raman response of high- $T_c$ cuprates. Physical Review B, 2005, 71, .	3.2	17
61	Paramagnons and high-temperature superconductivity in a model family of cuprates. Nature Communications, 2022, 13, .	12.8	17
62	Raman scattering study of the lattice dynamics of superconducting $\text{LiFeAs}$ . Physical Review B, 2012, 85, .	3.2	16
63	In-between Bragg reflections: thermal diffuse scattering and vibrational spectroscopy with x-rays. Journal Physics D: Applied Physics, 2015, 48, 504003.	2.8	16
64	Strange semimetal dynamics in $\text{SrIrO}_3$ . Nature Communications, 2020, 11, 4270.	12.8	15
65	Pressure-induced phase transition and superconductivity in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ . Physical Review B, 2015, 91, 020501.	3.2	13
66	Soft-phonon-driven orbital order in $\text{CaMnO}_7$ . Physical Review B, 2016, 94, .	3.2	13
67	Probing the energy gap of high-temperature cuprate superconductors by resonant inelastic x-ray scattering. Npj Quantum Materials, 2018, 3, .	5.2	13
68	Thermoelectric properties of $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ $\text{La}_2/3\text{Ca}_1/3\text{MnO}_3$ superlattices. Applied Physics Letters, 2012, 101, 131603.	3.3	12
69	Polarization effects on spectra of spherical core/shell nanostructures: Perturbation theory against finite difference approach. Physica B: Condensed Matter, 2015, 458, 73-84.	2.7	11
70	Spectral Evidence for Emergent Order in $\text{BaBiO}_3$ . Physical Review Letters, 2018, 121, 127001.	7.8	11
71	Resonant inelastic x-ray scattering study of bond order and spin excitations in nickelate thin-film structures. Physical Review B, 2019, 99, .	3.2	11
72	Evidence for nesting-driven charge density wave instabilities in the quasi-two-dimensional material $\text{LaAgSb}_2$ . Physical Review Research, 2021, 3, .	3.6	11

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73	Dynamics of collective modes in an unconventional charge density wave system BaNi <sub>2</sub> As <sub>2</sub> . Communications Physics, 2022, 5, .	5.3	11
74	Accessing the entire overdoped regime in pristine YBa <sub>2</sub> Cu <sub>3</sub> O <sub>6+x</sub> by application of pressure. Physical Review B, 2017, 95, .	3.2	10
75	Phonon dispersion relation of single-crystalline $\hat{I}^2$ -FeSe. Physical Review B, 2017, 96, .	3.2	10
76	Electronic correlations in the van der Waals ferromagnet $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mrow} \langle \text{mml:msub} \langle \text{mml:mi} \text{Fe} \langle \text{mml:mi} \langle \text{mml:m} \text{3} \langle \text{mml:m} \text{0} \langle \text{mml:} \text{2} \langle \text{mml:} \text{0} \rangle \rangle \rangle \rangle \rangle \langle \text{mml:mtext} \text{ revealed by its charge dynamics. Physical Review B, 2020, 102, .$	3.2	10
77	Unconventional quantum vortex matter state hosts quantum oscillations in the underdoped high-temperature cuprate superconductors. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	10
78	Magnetic domain walls of the van der Waals material Fe <sub>3</sub> GeTe <sub>2</sub> . 2D Materials, 2022, 9, 025022.	4.4	9
79	Superconductivity-induced phonon renormalization on $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:msub} \langle \text{mml:mtext} \text{NaFe} \langle \text{mml:mtext} \langle \text{mml:mrow} \langle \text{mml:m} \text{1} \langle \text{mml:} \text{0} \langle \text{mml:} \text{0} \langle \text{mml:} \text{0} \rangle \rangle \rangle \rangle \langle \text{mml:mtext} \text{Co} \langle \text{mml:mi} \text{x} \langle \text{mml:mi} \langle \text{mml:msub} \langle \text{mml:m} \text{2} \langle \text{mml:m} \text{0} \langle \text{mml:} \text{0} \rangle \rangle \rangle \rangle \rangle \rangle \langle \text{mml:mtext} \text{Physical Review B, 2014, 89, .$	8.2	10
80	Patterning of two-dimensional electron systems in SrTiO <sub>3</sub> based heterostructures using a CeO <sub>2</sub> template. AIP Advances, 2017, 7, .	1.3	7
81	Raman scattering study of lattice and magnetic excitations in CrAs. Physical Review B, 2019, 100, .	3.2	7
82	Hard antinodal gap revealed by quantum oscillations in the pseudogap regime of underdoped high-T <sub>c</sub> superconductors. Nature Physics, 2020, 16, 841-847.	16.7	7
83	Interplay between the A <sub>1g</sub> electronic Raman scattering peak and the neutron magnetic resonance. Journal of Physics and Chemistry of Solids, 2006, 67, 503-508.	4.0	6
84	Coupling between quasiparticles and a bosonic mode in the normal state of HgBa <sub>2</sub> CuO <sub>4</sub> + $\hat{I}$ . Europhysics Letters, 2006, 73, 594-600.	2.0	6
85	Anomalous In-Plane Electronic Scattering in Charge Ordered Na <sub>0.41</sub> CoO <sub>2</sub> · 0.6H <sub>2</sub> O. Physical Review Letters, 2012, 108, 236401.	7.8	5
86	High frequency dynamics of BMG determined by synchrotron radiation: A microscopic picture. Journal of Alloys and Compounds, 2010, 495, 319-322.	5.5	4
87	Structural and electronic properties of epitaxial YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7-<math>\hat{a}</math></sub> · $\hat{a}$ · La <sub>0.67</sub> Ca <sub>0.33</sub> MnO <sub>3</sub> bilayers grown on SrTiO <sub>3</sub> (1 1 0) substrates. Physica C: Superconductivity and Its Applications, 2014, 505, 70-73.	1.2	4
88	Anomalous pressure dependence of the electronic transport and anisotropy in SrIrO <sub>3</sub> films. Journal of Physics Condensed Matter, 2020, 32, 345601.	1.8	4
89	Inelastic X-ray scattering investigations of lattice dynamics in SmFeAsO <sub>1-<math>\hat{a}</math></sub> · F superconductors. Journal of Physics and Chemistry of Solids, 2011, 72, 523-526.	4.0	3
90	Phonon spectrum of single-crystalline FeSe probed by high-resolution electron energy-loss spectroscopy. Physica C: Superconductivity and Its Applications, 2018, 549, 18-21.	1.2	3

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91	Inelastic x-ray scattering studies of phonon dispersions in superconductors at high pressures. Superconductor Science and Technology, 2020, 33, 124004.	3.5	3
92	Dichotomy in quasiparticles dynamics of underdoped cuprates in the superconducting state. Physica C: Superconductivity and Its Applications, 2007, 460-462, 358-361.	1.2	2
93	Influence of the vicinal substrate miscut on the anisotropic two-dimensional electronic transport in Al <sub>2</sub> O <sub>3</sub> /SrTiO <sub>3</sub> heterostructures. Journal of Applied Physics, 2020, 128, 085302.	2.5	2
94	Strange bedfellows inside a superconductor. Science, 2021, 373, 1438-1439.	12.6	2
95	In-plane Isotropy of the Low Energy Phonon Anomalies in YBa <sub>2</sub> Cu <sub>3</sub> O <sub>6+x</sub> . Journal of the Physical Society of Japan, 2021, 90, 111006.	1.6	2
96	Nodal and antinodal gaps in the superconducting state of cuprates. Journal of Physics and Chemistry of Solids, 2008, 69, 3049-3051.	4.0	1
97	Light-induced metastable state in charge-ordered YBa <sub>2</sub> Cu <sub>3</sub> O <sub>6+x</sub> . Physical Review B, 2018, 98, .	3.2	1
98	Effect of pseudogap on electronic anisotropy in the strain dependence of the superconducting of underdoped YBa <sub>2</sub> Cu <sub>3</sub> O <sub>6+x</sub> . Physical Review B, 2022, 105, .	3.2	1
99	Inelastic X ray scattering under pressure to probe the quantum phase transition in the transition metal dichalcogenides. Journal of Physics: Conference Series, 2017, 950, 032017.	0.4	0
100	Structural, Electronic and Magnetic Properties of a Few Nanometer-Thick Superconducting NdBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> Films. Nanomaterials, 2020, 10, 817.	4.1	0
101	Enhancement of Superconducting Coherence in YBa <sub>2</sub> Cu <sub>3</sub> O <sub>x</sub> by Resonant Lattice Excitation. Springer Proceedings in Physics, 2015, , 214-217.	0.2	0
102	Absence of temperature-dependent phonon anomalies in SrBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> and SrYBa <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> . Physical Review B, 2022, 105, .	3.2	0