INFORMAZIONI PERSONALI

Nome	**DE GIOVANNINI UMBERTO**

ABILITAZIONE

• Date (da 2021 – 2032)	Professore di prima fascia settore 02/B2
• Date (da 2021 – 2032)	Professore di seconda fascia settore 02/A2

POSIZIONI ATTUALI

• Date (da 2025 – a oggi)	Professore Associato
• Nome e indirizzo del datore di lavoro	Università degli Studi di Palermo, Italia
• Date (da 2017 – a oggi)	Group Leader
• Nome e indirizzo del datore di lavoro	Max Planck Institute for the Structure and Dynamics of Matter, Amburgo, Germania.

ESPERIENZA LAVORATIVA

• Date (da 2022 – 2025)	Ricercatore (RTDB)
• Nome e indirizzo del datore di lavoro	Università degli Studi di Palermo, Italia.
• Date (da 2010 – 2017)	Ricercatore
• Nome e indirizzo del datore di lavoro	Dipartimento di Scienza dei Materiali, Facoltà di Chimica, Università dei Paesi Baschi UPV/EHU, San Sebastián, Spagna.
• Date (da 2009 – 2010)	Postdoc
• Nome e indirizzo del datore di lavoro	School of Engineering & Science, Jacobs University, Brema, Germania
• Date (da 2008 – 2009)	Postdoc
• Nome e indirizzo del datore di lavoro	Dipartimento di Fisica, Università di Genova, Italia

ISTRUZIONE E FORMAZIONE

• Date (2004 – 2008)	Dottorato in Fisica
• Nome e tipo di istituto di istruzione o formazione	Università di Genova, Italia
• Date (1998 – 2004)	Laurea in Fisica
• Nome e tipo di istituto di istruzione o formazione	Università di Genova, Italia
• Qualifica conseguita	110/110 e lode

PRIMA LINGUA	**[Italiano]**
ALTRE LINGUE	
	[Inglese]
• Capacità di lettura	[eccellente]
• Capacità di scrittura	[eccellente]
• Capacità di espressione orale	[eccellente]
	[Spagnolo]
• Capacità di lettura	[eccellente]
• Capacità di scrittura	[buono]
• Capacità di espressione orale	[eccellente]

ATTIVITÀ DIDATTICA

• Date (2022 – oggi)	Fisica I (9 CFU)
• Nome e tipo di istituto di istruzione o formazione	Ingegneria dell'Innovazione per le Imprese Digitali, Università di Palermo, Italia.
• Date (2025 – oggi)	Fisica I (9 CFU)
• Nome e tipo di istituto di istruzione o formazione	Corso di Laurea in Chimica, Università di Palermo, Italia.
• Date (2023 – oggi)	"Introduzione a DFT e TDDFT" (20 ore)
• Nome e tipo di istituto di istruzione o formazione	Dottorato in Fisica, Dipartimento di Fisica e Chimica, Univesità di Palermo, Italia.
• Date (2024 – 2024)	Fisica II (7 CFU)
Nome e tipo di istituto di istruzione o formazione	Ingegneria Chimica e Biochimica, Università di Palermo, Italia.

SUPERVISIONE DI STUDENTI E POSTDOC

• Date (2022 – oggi)	1 Postdoc, 1 Dottorando
• Nome e tipo di istituto di istruzione o formazione	Università di Palermo, Italia.
• Date (2017 – oggi)	4 Postdoc, 3 Dottorandi
• Nome e tipo di istituto di istruzione o formazione	Max Planck Institute for the Structure and Dynamics of Matter, Amburgo, Germania.
• Date (2023 – oggi)	2 Postdoc, 4 Dottorandi

• Nome e tipo di istituto di istruzione o formazione	Università dei Paesi Baschi UPV/EHU, San Sebastián, Spagna

ALLEGATI [CV in lingua inglese]

Data 8/3/2025 f.to ……

Dichiara che quanto scritto nel curriculum corrisponde a verità, consapevole che chiunque rilascia dichiarazioni mendaci, forma atti falsi o ne fa uso nei casi previsti dal presente testo unico è punito ai sensi del codice penale e dalle leggi speciali in materia (art. 76 D.P.R. 445/2000).

PERSONAL INFORMATION

Family name, First name: De Giovannini, Umberto
Nationality: Italian **Website:** udglab.org
Researcher unique identifier: 0000-0002-4899-1304 (ORCID)
Abilitazione a Professore di prima fascia settore 02/B2 (11/05/2021 – 11/05/2030)
Abilitazione a Professore di seconda fascia settore 02/A2 (14/04/2021 – 14/04/2030)

CURRENT POSITIONS

2025 – present Associate Professor, Università degli studi di Palermo, Italy.
2017 – present Group leader, Max Plank Institute for the Structure and Dynamics of Matter, Hamburg, Germany.

PREVIOUS POSITIONS

2022 – 2025 Assistant Professor (RTDB), Università degli studi di Palermo, Italy.
2010 – 2017 Research scientist, Department of Materials Science, Faculty of Chemistry, University of the Basque Country UPV/EHU, San Sebastian, Spain
2009 – 2010 Postdoc, School of Engineering & Science, Jacobs University, Bremen, Germany.
2008 – 2009 Postdoc, Department of Physics, University of Genoa, Italy.

EDUCATION

2008 Ph.D in Physics, University of Genoa, Italy.
2004 Master in Physics, University of Genoa, Italy, 110/110 *e lode* ("Summa Cum Laude").

SUPERVISION OF GRAD STUDENTS AND POSTDOCTORAL FELLOWS

2022 – present 1 Postdocs, 1 PhD Students.
Università degli studi di Palermo, Italy.
2017 – present 4 Postdocs, 3 PhD Students.
Max Plank Institute for the Structure and Dynamics of Matter, Hamburg, Germany.
2012 – 2017 2 Postdocs, 4 PhD Students.
University of the Basque Country, San Sebastian, Spain.

TEACHING ACTIVITIES

2022 – present Newtonian Mechanics and Thermodynamics (84 hours), Ingenieria dell'innovazione per le imprese digitali, Università di Palermo, Italy.
2023 – present Introductory course for PhD students on DFT and TDDFT (20 hours),Università di Palermo, Italy.
2022 – 2024 Electronmagnetism (54 hours), Ingegnieria Chimica e Biochimica, Università di Palermo, Italy.
2018 Introductory course on DFT and TDDFT (6 hours), *Curso de verao Nanociencias e nanomateriais*, Campinas, Brazil.
2015 Tutorial on photoemission with TDDFT (4 hours), *School on New Computational Methods for Attosecond Molecular Processes*, Zaragoza, Spain.

FUNDING AND GRANTS

2025 - 2027 PRIN 2022 ExAtto (grant 022PX279E), PI share €56K (total awarded €202.490).
2025 - 2029 EU MSCA-DN action SPARKLE (grant 101169225), PI share €519K (total awarded €3,233,937.6).
2024 - 2026 THENCE (Partenariato Esteso NQSTI – PE00000023), PI share €123K (total awarded €368,529.20).
2023 - 2027 EU MSCA-DN action TIMES (grant 101118915), PI share €259K (total awarded €2,730,851.99).
2022 - 2023 UniPa Eurostart (PRJ-0988), €11.6K.
2020 - 2024 EU MSCA-ITN-ETN action SMART-X (grant 860553), PI share €252K (total awarded €3,930,264.72).

Total: €1.220M (PI share)

EDITORIAL ACTIVITY

2020 - 2021 Guest associate Editor for the special issue on "Electronic Properties, Vibrational Properties and Optical Properties of Van der Waals 2D Crystals" of Frontiers in materials, ISSN 2296-8016, IF 2.705.

INVITED TALKS AND SEMINARS

Invited (22)

2025 **Shaping Quantum Materials with Light: From Intense Laser Fields to Cavity Photons**, *Program: Quantum Optics of Correlated Electron Systems*, KITP, Santa Barbara, USA;

2024 **Nonlinear Photoelectron Spectroscopy with TDDFT: From Atomic Systems to Solid-State**, *Theory days: Dynamics of irradiation*, Toulouse, France;

2023 (2) **Simulating photoemission with TDDFT**, *Orbital CINEMA cickoff workshop*, Rolduc Netherlands; **Excitons strongly coupled to light: from exciton-polaritons to core-exciton ultrafast dynamics**, *FisMat 2023*, Milano Italy.

2021 (2)**ARPES with TDDFT: Floquet topology in 2D materials**, *Photoemission Tomography: Applications and Future Developments*, Badhonef Germany;**Manipulating quantum materials with light: from strong fields to single photons in a cavity**, seminar, University of Genova.

2019 **Ultrafast photoelectron spectroscopy with TDDFT: state of the art and perspectives**, *CFEL MUSS Department seminar*, host Prof. Jochen Küpper, Hamburg, Germany.

2018 (2) **Non-equilibrium dynamics of matter with TDDFT: dynamical control of material properties**, *Workshop Nanociencias e nanomateriais*, Campinas, Brazil; **Ab-inition photoelectrons spectroscopy with TDDFT: from finite to infinite systems**, seminar, ETH Zurich, host Prof. Ursula Keller, Zurich, Switzerland.

2017 **Ab-initio time and spin resolved ARPES in real materials with TDDFT**, *X-UV Time Resolved Advanced Methods (XTRAM)*, Erice, Italy.

2016 (2) **Ab-inition spin and time-resolved APRES in real materials with TDDFT: driving TMDs out of equilibrium**, *7th Workshop Time-Dependent Density-Functional Theory: Prospects and Applications*, Benasque, Spain; **Ab-initio photoelectron spectroscopy with TDDFT: from finite to extended systems**, seminar, CNR S3, host Prof. Stefano Corni, Modena, Italy.

2015 (3) **Simulating photoelectron spectroscopy from finite to extended systems with TDDFT: challenges and perspectives**, *Theory days: Dynamics of irradiation*, Toulouse, France; **Ab-initio photoelectron spectroscopy with TDDFT: finite systems and beyond**, *Excited States: Electronic Structure and Dynamics*, Telluride, CO, USA; Tutorial on **Photoemission with TDDFT**, *School on New Computational Methods for Attosecond Molecular Processes*, Zaragoza, Spain.

2014 (5) **Changing the color of atoms and molecules with light**, *8th RES User's Conference*, Santander, Spain; **Modeling photoelectron spectroscopy with TDDFT**, *11th World Congress on Computational Mechanics*, Barcelona, Spain; **Time resolved spectroscopies with time dependent density functional theory**, *1st Xlic COST meeting*, London, United Kingdom (2014); **Time resolved spectroscopies with TDDFT**, seminar, Université Paul Sabatier, host Prof. Eric Suraud, Toulouse, France; **Time-resolved photoelectron spectroscopy with TDDFT**, *6th Workshop Time-Dependent Density-Functional Theory: Prospects and Applications*, Benasque, Spain (2014).

Before 2014 (4) seminars: Università di Palermo, Italy (2013); Institut Lumière Matière, Lyon, France (2012); University of the Basque Country San Sebastian, Spain (2009); Jacobs University Bremen, Germany (2007).

Contributed (12)

FisMat2015, Palermo, Italy (2015); *PSI-K 2015 conference*, San Sebastian, Spain (2015); *Octopus developer meeting*, Jena, Germany, (2015); *Octopus developer meeting*, Lyon, France, (2012); *17th ETSF Workshop on Electronic Excitations Advanced Green function methods*, Coimbra, Portugal, (2012); *ETSF Young researcher's meeting 2011*, Naples, Italy, (2011); *ETSF Young researcher's meeting 2010*, Jyvaskyla, Finland, (2010); *Nanoscale Devices for Environmental and Energy Applications*, San Sebastian, Spain, (2010); *Frontiers of Quantum and Mesoscopic Thermodynamics*, Prague, Czech Republic, (2008); *Sestri Levante 2008 Convegno Informale di Fisica Teorica*, Sestri Levante, Italy, (2008); *Electronic Properties of Two-dimensional Systems and Modulated Semiconductor Structures*, Genova, Italy, (2007); *Quantum Optics and Computation*, MCRTN, Riomaggiore, Italy (2006); *Quantum electromechanical systems*, Jyvaskyla, Finland, (2006).

ORGANIZATION OF SCIENTIFIC EVENTS

2025 June 10-13, *school*, **TIMES School on Ultrafast spectroscopies**, Hamburg Germany.

2023 December 4-6, *workshop*, **SMART-X workshop on X-RAY SPECTROSCOPY and related phenomena**, Palermo Italy.

2023 September 4-8, *colloquim*, **Coherent Dynamics in Quantum Materials**, Milano Italy.

2023 September 26-29, *workshop*, **Atto2Nano: modeling Ultrafast Dynamics across time scales in Condensed Matter**, CECAM HQ, Lausanne Switzerland.

COMPLETE LIST OF PUBLICATIONS

83 publications: 75 papers published in leading journals, including (impact factor in brackets) 6 Nature Communications [17.69], 6 Phys. Rev. Lett. [9.185], 5 Nano letters [12.26], 3 Science Advances [14.14], 3 PNAS [12.779], 2 Nature Materials [47.66], 2 Phys. Rev. X [14.42] and 2 review articles; 3 book chapters.

H-index: 36
Total citations: 5034
(source: Google Scholar)

Articles

[1] S. Biswas, A. Trabattoni, P. Rupp, M. Magrakvelidze, M. E.-A. Madjet, U. De Giovannini, M. C. Castrovilli, M. Galli, Q. Liu, E. P. Månsson, J. Schötz, V. Wanie, P. Wnuk, L. Colaizzi, D. Mocci, M. Reduzzi, M. Lucchini, M. Nisoli, A. Rubio, H. S. Chakraborty, M. F. Kling, and F. Calegari. "Correlation-driven attosecond photoemission delay in the plasmonic excitation of C60 fullerene". In: **Science Advances** 11.7 (2025), eads0494. DOI: 10.1126/sciadv.ads0494.

[2] G. Gatti, N. Tancogne-Dejean, H. Hübener, U. De Giovannini, J. Dai, S. Polishchuk, P. Bugnon, F. Frassetto, L. Poletto, M. Chergui, M. Grioni, A. Rubio, M. Puppin, and A. Crepaldi. "Light-induced renormalization of the band structure of chiral tellurium". In: **Physical Review Materials** 8.12 (2024), p. 125001. DOI: 10.1103/physrevmaterials.8.125001. eprint: 2411.13954.

[3] I.-T. Lu, D. Shin, M. K. Svendsen, H. Hübener, U. De Giovannini, S. Latini, M. Ruggenthaler, and A. Rubio. "Cavity-enhanced superconductivity in MgB 2 from first-principles quantum electrodynamics (QEDFT)". In: **Proceedings of the National Academy of Sciences** 121.50 (2024), e2415061121. ISSN: 0027-8424. DOI: 10.1073/pnas.2415061121.

[4] O. Neufeld, H. Huebener, U. De Giovannini, and A. Rubio. "Tracking electron motion within and outside of Floquet bands from attosecond pulse trains in time-resolved ARPES." In: **Journal of physics. Condensed matter : an Institute of Physics journal** (2024). DOI: 10.1088/1361-648x/ad2a0e.

[5] J. Zhang, O. Neufeld, N. Tancogne-Dejean, I.-T. Lu, H. Hübener, U. De Giovannini, and A. Rubio. "Enhanced high harmonic efficiency through phonon-assisted photodoping effect". In: **npj Computational Materials** 10.1 (2024), p. 202. DOI: 10.1038/s41524-024-01399-z.

[6] A. Castro, U. De Giovannini, S. A. Sato, H. Huebener, and A. Rubio. "Floquet engineering with quantum optimal control theory". In: **New Journal of Physics** (2023). DOI: 10.1088/1367-2630/accb05.

[7] U. De Giovannini, J. Küpper, and A. Trabattoni. "New perspectives in time-resolved laser-induced electron diffraction". In: **Journal of Physics B: Atomic, Molecular and Optical Physics** 56.5 (2023), p. 054002. ISSN: 0953-4075. DOI: 10.1088/1361-6455/acb872.

[8] A. Geyer, O. Neufeld, D. Trabert, U. De Giovannini, M. Hofmann, N. Anders, L. Sarkadi, M. S. Schöffler, L. P. H. Schmidt, A. Rubio, T. Jahnke, M. Kunitski, and S. Eckart. "Quantum correlation of electron and ion energy in the dissociative strong-field ionization of H2". In: **Physical Review Research** 5.1 (2023), p. 013123. DOI: 10.1103/physrevresearch.5.013123.

[9] H. Hübener, U. De Giovannini, S. A. Sato, and A. Rubio. "Floquet band engineering in action". In: **Science Bulletin** (2023). ISSN: 2095-9273. DOI: 10.1016/j.scib.2023.03.046.

[10] G. Inzani, S. A. Sato, G. D. Lucarelli, B. Moio, R. Borrego-Varillas, F. Frassetto, L. Poletto, H. Hübener, U. De Giovannini, A. Rubio, M. Nisoli, and M. Lucchini. "Proceedings of the 8th International Conference on Attosecond Science and Technology". In: **Springer Proceedings in Physics** (2023), pp. 187–194. ISSN: 0930-8989. DOI: 10.1007/978-3-031-47938-0_18.

[11] J. Kaye, A. Barnett, L. Greengard, U. De Giovannini, and A. Rubio. "Eliminating Artificial Boundary Conditions in Time-Dependent Density Functional Theory Using Fourier Contour Deformation". In: **Journal of Chemical Theory and Computation** (2023). ISSN: 1549-9618. DOI: 10.1021/acs.jctc.2c01013.

[12] C. S. Kern, A. Haags, L. Egger, X. Yang, H. Kirschner, S. Wolff, T. Seyller, A. Gottwald, M. Richter, U. De Giovannini, A. Rubio, M. G. Ramsey, F. C. Bocquet, S. Soubatch, F. S. Tautz, P. Puschnig, and S. Moser. "Simple extension of the plane-wave final state in photoemission: Bringing understanding to the photon-energy dependence of two-dimensional materials". In: **Physical Review Research** 5.3 (2023), p. 033075. DOI: 10.1103/physrevresearch.5.033075.

[13] X. Liu, B. Fan, H. Hübener, U. De Giovannini, W. Duan, A. Rubio, and P. Tang. "Floquet engineering of magnetism in topological insulator thin films". In: **Electronic Structure** 5.2 (2023), p. 024002. DOI: 10.1088/2516-1075/acca58.

[14] I.-T. Lu, D. Shin, U. De Giovannini, H. Hübener, J. Zhang, S. Latini, and A. Rubio. "Time-based Chern number in periodically driven systems in the adiabatic limit". In: **Physical Review Research** 5.1 (2023), p. 013081. DOI: 10.1103/physrevresearch.5.013081.

[15] O. Neufeld, H. Hübener, G. Jotzu, U. De Giovannini, and A. Rubio. "Band Nonlinearity-Enabled Manipulation of Dirac Nodes, Weyl Cones, and Valleytronics with Intense Linearly Polarized Light". In: **Nano Letters** 23.16 (2023), pp. 7568–7575. ISSN: 1530-6984. DOI: 10.1021/acs.nanolett.3c02139.

[16] O. Neufeld, N. Tancogne-Dejean, U. De Giovannini, H. Hübener, and A. Rubio. "Attosecond magnetization dynamics in non-magnetic materials driven by intense femtosecond lasers". In: **npj Computational Materials** 9.1 (2023), p. 39. DOI: 10.1038/s41524-023-00997-7.

[17] O. Neufeld, N. Tancogne-Dejean, H. Hübener, U. De Giovannini, and A. Rubio. "Are There Universal Signatures of Topological Phases in High-Harmonic Generation? Probably Not." In: **Physical Review X** 13.3 (2023), p. 031011. DOI: 10.1103/physrevx.13.031011.

[18] A. Castro, U. De Giovannini, S. A. Sato, H. Hübener, and A. Rubio. "Floquet engineering the band structure of materials with optimal control theory". In: **Physical Review Research** 4.3 (2022), p. 033213. DOI: 10.1103/physrevresearch.4.033213.

[19] U. De Giovannini, S. A. Sato, H. Hübener, and A. Rubio. "First-principles modelling for time-resolved ARPES under different pump-probe conditions". In: **Journal of Electron Spectroscopy and Related Phenomena** 254 (2022), p. 147152. ISSN: 0368-2048. DOI: 10.1016/j.elspec.2021.147152.

[20] G. Inzani, S. A. Sato, G. D. Lucarelli, B. Moio, R. Borrego-Varillas, F. Frassetto, L. Poletto, H. Hübener, U. De Giovannini, A. Rubio, M. Nisoli, and M. Lucchini. "Attosecond dynamics of core excitons". In: **Advances in Ultrafast Condensed Phase Physics III** 12132 (2022), pp. 1213202–1213202-6. ISSN: 0277-786X. DOI: 10.1117/12.2631081.

[21] M. Lucchini, F. Medeghini, Y. Wu, F. Vismarra, R. Borrego-Varillas, A. Crego, F. Frassetto, L. Poletto, S. A. Sato, H. Hübener, U. De Giovannini, Á. Rubio, and M. Nisoli. "Controlling Floquet states on ultrashort time scales". In: **Nature Communications** 13.1 (Nov. 2022), p. 7103. DOI: 10.1038/s41467-022-34973-4.

[22] J. Ma, S. Nie, X. Gui, M. Naamneh, J. Jandke, C. Xi, J. Zhang, T. Shang, Y. Xiong, I. Kapon, N. Kumar, Y. Soh, D. Gosálbez-Martínez, O. V. Yazyev, W. Fan, H. Hübener, U. De Giovannini, N. C. Plumb, M. Radovic, M. A. Sentef, W. Xie, Z. Wang, C. Mudry, M. Müller, and M. Shi. "Multiple mobile excitons manifested as sidebands in quasi-one-dimensional metallic TaSe3". In: **Nature Materials** 21 (2022), pp. 423–429. ISSN: 1476-1122. DOI: 10.1038/s41563-022-01201-9.

[23] E. P. Månsson, S. Latini, F. Covito, V. Wanie, M. Galli, E. Perfetto, G. Stefanucci, U. De Giovannini, M. C. Castrovilli, A. Trabattoni, F. Frassetto, L. Poletto, J. B. Greenwood, F. Legare, M. Nisoli, A. Rubio, and F. Calegari. "Ultrafast dynamics of adenine following XUV ionization". In: **Journal of Physics: Photonics** (2022). DOI: 10.1088/2515-7647/ac6ea5.

[24] O. Neufeld, W. Mao, H. Hübener, N. Tancogne-Dejean, S. A. Sato, U. De Giovannini, and A. Rubio. "Time- and angle-resolved photoelectron spectroscopy of strong-field light-dressed solids: Prevalence of the adiabatic band picture". In: **Physical Review Research** 4.3 (2022), p. 033101. DOI: 10.1103/physrevresearch.4.033101.

[25] O. Neufeld, J. Zhang, U. De Giovannini, H. Hübener, and A. Rubio. "Probing phonon dynamics with multidimensional high harmonic carrier-envelope-phase spectroscopy". In: **Proceedings of the National Academy of Sciences** 119.25 (2022), e2204219119. ISSN: 0027-8424. DOI: 10.1073/pnas.2204219119.

[26] Y. Shao, A. J. Sternbach, B. S. Y. Kim, A. A. Rikhter, X. Xu, U. De Giovannini, R. Jing, S. H. Chae, Z. Sun, S. H. Lee, Y. Zhu, Z. Mao, J. C. Hone, R. Queiroz, A. J. Millis, P. J. Schuck, A. Rubio, M. M. Fogler, and D. N. Basov. "Infrared plasmons propagate through a hyperbolic nodal metal". In: **Science Advances** 8.43 (2022). DOI: 10.1126/sciadv.add6169.

[27] D. Shin, S. Latini, C. Schäfer, S. A. Sato, E. Baldini, U. De Giovannini, H. Hübener, and A. Rubio. "Simulating Terahertz Field-Induced Ferroelectricity in Quantum Paraelectric SrTiO3". In: **Physical Review Letters** 129.16 (2022), p. 167401. ISSN: 0031-9007. DOI: 10.1103/physrevlett.129.167401.

[28] S. Aeschlimann, S. A. Sato, R. Krause, M. Chávez-Cervantes, U. De Giovannini, H. Hübener, S. Forti, C. Coletti, K. Hanff, K. Rossnagel, A. Rubio, and I. Gierz. "Survival of Floquet–Bloch States in the Presence of Scattering". In: **Nano Letters** 21 (2021), p. 5028. ISSN: 1530-6984. DOI: 10.1021/acs.nanolett.1c00801.

[29] H. Hübener, U. De Giovannini, C. Schäfer, J. Andberger, M. Ruggenthaler, J. Faist, and A. Rubio. "Engineering quantum materials with chiral optical cavities". In: **Nature Materials** 20 (2021), 438–442(. ISSN: 1476-1122. DOI: 10.1038/s41563-020-00801-7.

[30] S. Latini, U. De Giovannini, E. J. Sie, N. Gedik, H. Hübener, and A. Rubio. "Phonoritons as Hybridized Exciton-Photon-Phonon Excitations in a Monolayer h-BN Optical Cavity". In: **Physical Review Letters** 126.22 (2021), p. 227401. ISSN: 0031-9007. DOI: 10.1103/physrevlett.126.227401.

[31] S. Latini, D. Shin, S. A. Sato, C. Schäfer, U. De Giovannini, H. Hübener, and A. Rubio. "The ferroelectric photo ground state of SrTiO3: Cavity materials engineering". In: **Proceedings of the National Academy of Sciences** 118.31 (2021), e2105618118. ISSN: 0027-8424. DOI: 10.1073/pnas.2105618118.

[32] M. Lucchini, S. A. Sato, G. D. Lucarelli, B. Moio, G. Inzani, R. Borrego-Varillas, F. Frassetto, L. Poletto, H. Hübener, U. De Giovannini, A. Rubio, and M. Nisoli. "Unravelling the intertwined atomic and bulk nature of localised excitons by attosecond spectroscopy". In: **Nature Communications** 12.1 (2021), p. 1021. DOI: 10.1038/s41467-021-21345-7.

[33] E. P. Månsson, S. Latini, F. Covito, V. Wanie, M. Galli, E. Perfetto, G. Stefanucci, H. Hübener, U. De Giovannini, M. C. Castrovilli, A. Trabattoni, F. Frassetto, L. Poletto, J. B. Greenwood, F. Légaré, M. Nisoli, A. Rubio, and F. Calegari. "Real-time observation of a correlation-driven sub 3 fs charge migration in ionised adenine". In: **Communications Chemistry** 4.1 (2021), p. 73. DOI: 10.1038/s42004-021-00510-5.

[34] O. Neufeld, H. Hübener, A. Rubio, and U. De Giovannini. "Strong chiral dichroism and enantiopurification in above-threshold ionization with locally chiral light". In: **Physical Review Research** 3.3 (2021), p. L032006. DOI: 10.1103/physrevresearch.3.l032006.

[35] O. Neufeld, N. Tancogne-Dejean, U. De Giovannini, H. Hübener, and A. Rubio. "Light-Driven Extremely Nonlinear Bulk Photogalvanic Currents". In: **Physical Review Letters** 127.12 (2021), p. 126601. ISSN: 0031-9007. DOI: 10.1103/physrevlett.127.126601.

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