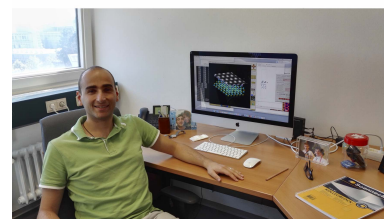


Europass Curriculum Vitae



Personal information

| | |
|----------------|--|
| Name / Surname | Prof. Di Sante Domenico |
| Address | Department of Physics and Astronomy, Alma Mater Studiorum – University of Bologna, Viale C. Berti Pichat 6/2, 40127 Bologna, Italy |
| Personal Email | domenico.disante@unibo.it |
| Home page | www.domenicodisante.com |
| Nationality | Italian |
| Date of birth | 08 April 1987 |
| Gender | Male |

Employment

| | |
|----------|--|
| Dates | 1 February 2021 - present |
| Position | Assistant Professor (tenure track) |
| Institut | Department of Physics and Astronomy, University of Bologna |
| Dates | 1 February 2021 - present |
| Position | Visiting Scholar |
| Institut | Center for Computational Quantum Physics, Flatiron Institute, New York |
| Dates | 1 December 2016 - 6 December 2020 |
| Position | Akademischer Rat (Academic Scientist) |
| Institut | Institut für Theoretische Physik und Astrophysik, University of Würzburg |
| Dates | 17 February 2016 - 30 November 2016 |
| Position | PostDOC Fellowship |
| Institut | Institut für Theoretische Physik und Astrophysik, University of Würzburg |
| Dates | 17 November 2014 - 16 February 2016 |
| Position | PostDOC Fellowship |
| Institut | CNR-SPIN |

Education

| | |
|----------|---|
| Date | May 2021 |
| Degree | Habilitation as Italian Professor |
| Category | Full Professor in Theoretical Condensed Matter Physics (02/B2 FIS/03) |

| | |
|-------------|---|
| Date | April 2017 |
| Degree | Habilitation as Italian Professor |
| Category | Associate Professor in Theoretical Condensed Matter Physics (02/B2 FIS/03) |
| Date | 02 November 2011 - 31 October 2014 |
| Degree | PhD degree in Physics (15 April 2015) |
| Thesis | Modeling Cross Coupling Interactions in Advanced Materials. Spin-Orbit, Multiferroicity, Disorder and Electron-Phonon Interaction. |
| Supervisors | Dr. Silvia Picozzi and Prof. Sergio Ciuchi |
| University | Department of Physical and Chemical Sciences, University of L'Aquila |
| Date | 02 November 2011 |
| Degree | Admission to the PhD course in Physics |
| University | Physics Department, University of L'Aquila |
| Date | 10 October - 09 November 2011 |
| | Fellowship with research project: "Studio teorico-computazionale dell'accoppiamento magnetoelettrico all'interfaccia Fe/BaTiO₃ con funzionali avanzati di scambio e correlazione" |
| | CNR-SPIN (Dr. S. Picozzi) |
| Date | 01 November 2009 - 21 July 2011 |
| Degree | Master Degree in Physics |
| University | University of L'Aquila |
| Final Mark | 110/110 cum laude |
| Date | October 2006 - October 2009 |
| Degree | Bachelor Degree in Physics |
| University | University of L'Aquila |
| Final Mark | 110/110 |
| Date | September 2001 - July 2006 |
| Degree | High-School |
| School | Liceo Scientifico A. Einstein (Teramo) |
| Final Mark | 100/100 |

Third-party funding

| | |
|--------------------------|--|
| EU project 897276 (2020) | Marie Curie Global Fellowship Horizon 2020-MSCA-IF-2019, project BITMAP "ab-Initio calculations and Machine learning for superconducting collective phenomena in novel materials". Budget: ~ 270 k€ . |
| DFG-SFB1170 (2019-2023) | Principal Investigator (PI) of the project "Topological Fermi surface instabilities from a combined ab initio and functional renormalization group workflow". Budget: ~ 398 k€ . |
| DFG-SFB1170 (2019-2023) | Co-organizer of the project "i-RTG: Integrated Research Training Group", representative of young scientists. Budget: ~ 119 k€ . |

Prizes and Awards

| | |
|-----------|--|
| 2019 | Nomination in the Emerging Leaders 2020 by the JPhys Materials (IOP Publishing). |
| 2006-2009 | Student Scholarship of 12 k€ from the Italian Physics Society (SIF). |

2005 Prize of the National Laboratories of GranSasso for a summer school at the Princeton University.

Research interests

Machine Learning for correlated electrons systems
Hydrodynamics of Dirac electron fluids
Topological states in 3 and 2 dimensional systems
Topological superconductivity and unconventional Fermi surface instabilities
Correlated higher-order Dirac semimetals
Ab initio calculations of Ferroelectrics and Multiferroics
Ferroelectric Rashba Semiconductors
Electron-phonon coupling in disordered systems

Teaching

Date Academic Year 2019/2020, Summer semester
Course **Theory of Superconductivity**
Where Wuerzburg University

Date Academic Year 2019/2020, Winter semester
Course **Computational Material Science**
Where Wuerzburg University

Date Academic Year 2018/2019, Summer semester
Course **Classical Electrodynamics, Exercises**
Where Wuerzburg University

Date Academic Year 2018/2019, Winter semester
Course **Computational Material Science**
Where Wuerzburg University

Date Academic Year 2017/2018, Summer semester
Course **Classical Electrodynamics, Exercises**
Where Wuerzburg University

Date Academic Year 2017/2018, Winter semester
Course **Computational Material Science**
Where Wuerzburg University

Date Academic Year 2016/2017, Summer semester
Course **Quantum Mechanics II, Exercises**
Where Wuerzburg University

Date Academic Year 2016/2017, Winter semester
Course **Computational Material Science**
Where Wuerzburg University

Date Academic Year 2013/2014, First semester
Course **Teaching (Exercises): "Quantum Mechanics" and "Mathematical Methods in Physics" Courses**
Where Department of Physical and Chemical Sciences, University of L'Aquila

Thesis Supervision

| | |
|-------|--|
| Name | Pasquale Santodirocco, University of Bologna (Bachelor thesis), 2022 |
| Topic | Calcoli analitici ed a principi primi di tipiche strutture elettroniche per reticolo triangolare, esagonale e kagome |
| Name | Alessandro Ciavatta, University of Bologna (Bachelor thesis), 2021 |
| Topic | Teoria della superconduttività e soluzione numerica dell'equazione della gap BCS |
| Name | Marius Fuchs, University of Wuerzburg (Master thesis), 2020 |
| Topic | First-principles investigation of transition metal oxides thin films |
| Name | Schwemmer Tilman, University of Wuerzburg (Master thesis), 2019 |
| Topic | Unconventional superconductivity in three-dimensional systems via a weak coupling renormalization group analysis |
| Name | Eck Philipp, University of Wuerzburg (Master thesis), 2018 |
| Topic | Realization of a Kane-Mele-Type Quantum-Spin-Hall Insulator stabilized by Substrate Engineering |
| Name | Bakic Alper, University of Wuerzburg (Bachelor thesis), 2018 |
| Topic | Realistic study of midgap states at step edges of topological crystalline insulators |

Bibliometric Indicators

| | |
|-----------------|-----------------------|
| h-index | 32 (Google Scholar) |
| Total Citations | 3456 (Google Scholar) |

Invited Talks

| | |
|-----------|--|
| Date | 13 April 2022 |
| Conferene | Lectiones Amalfitanae, Amalfi Italy |
| Date | 23 January 2020 |
| Conferene | ECOS, Milan Italy |
| Date | 6 September 2018 |
| Conferene | NGSCES 2018, San Sebastian, Spain |
| Date | 31 August 2018 |
| Conferene | Lectiones Clitumnaliae, Campello, Italy |
| Date | 17 March 2018 |
| Conferene | IWEPNM 2018, Kirchberg, Austria |
| Date | 3 March 2017 |
| Conferene | Physics at the borderline between 1D and 2D, Bad Honnef, Germany |
| Date | 23 and 25 June 2016 |
| Where | CNNEM-2016, Shanghai, China |
| | More than 30 contributing talks and posters |

Organization of Conferences

2022 Flatiron Machine Learning
X Science Summer School
NGSCES 2019

June 6th- August 5th 2022, New York, USA

September 2nd-6th 2019, Pescara, Italy (<https://sites.google.com/view/ngscs2019>)

Refereeing

Referee for **Nature**, **Nature Communications**, **Physical Review Letters**, **Physical Review B**, **Physical Review X**, **Journal of American Chemical Society** and **New Journal of Physics**

Languages

| | |
|---------|-----------------------------------|
| Italian | Mother tongue |
| English | Good level, both written and oral |
| German | Basic knowledge |

Full Publications List

Articles

- 65 P. Eck, C. Ortix, A. Consiglio, J. Erhardt, M. Bauernfeind, S. Moser, R. Claessen, D. Di Sante and G. Sangiovanni, *Real-space obstruction in quantum spin Hall insulators*, Phys. Rev. B **106**, 195143 (2022)
- 64 M. Syperek, R. Stuehler, A. Consiglio, P. Holewa, P. Wyborski, L. Dusanowski, F. Reis, S. Hoefling, R. Thomale, W. Hanke, R. Claessen, D. Di Sante and C. Schneider, *Observation of room temperature excitons in an atomically thin topological insulator*, Nat. Commun. **13**, 6313 (2022)
- 63 D. Di Sante, M. Medvidović, A. Toschi, G. Sangiovanni, C. Franchini, A. M. Sengupta and A. J. Millis, *Deep Learning the Functional Renormalization Group*, Phys. Rev. Lett. **129**, 136402 (2022)
- 62 A. Troglia, C. Bigi, I. Vobornik, J. Fujii, D. Knez, R. Ciancio, G. Dražić, M. Fuchs, D. Di Sante, G. Sangiovanni, G. Rossi, P. Orgiani and G. Panaccione, *Evidence of a 2D Electron Gas in a Single-Unit-Cell of Anatase TiO₂ (001)*, Advanced Science **9**, 2105114 (2022)
- 61 A. Consiglio, T. Schwemmer, X. Wu, W. Hanke, T. Neupert, R. Thomale, G. Sangiovanni and D. Di Sante, *Van Hove tuning of AV₃Sb₅ kagome metals under pressure and strain*, Phys. Rev. B **105**, 165146 (2022)
- 60 S. Wolf, D. Di Sante, T. Schwemmer, R. Thomale and S. Rachel, *Triplet Superconductivity from Nonlocal Coulomb Repulsion in an Atomic Sn Layer Deposited onto a Si (111) Substrate*, Phys. Rev. Lett. **128**, 167002 (2022)
- 59 M. Kang, S. Fang, J.-K. Kim, B. R. Ortiz, S. H. Ryu, J. Kim, J. Yoo, G. Sangiovanni, D. Di Sante, B.-G. Park, C. Jozwiak, A. Bostwick, E. Rotenberg, E. Kaxiras, S. D. Wilson, J.-H. Park and R. Comin, *Twofold van Hove singularity and origin of charge order in topological kagome superconductor CsV₃Sb₅*, Nature Physics **18**, 301 (2022)

- 58 X. Wu, T. Schwemmer, T. Müller, A. Consiglio, G. Sangiovanni, D. Di Sante, Y. Iqbal, W. Hanke, A. P. Schnyder, M. M. Denner, M. H. Fischer, T. Neupert and R. Thomale, *Nature of Unconventional Pairing in the Kagome Superconductors AV_3Sb_5 ($A = K, Rb, Cs$)*, Phys. Rev. Lett. **127**, 177001 (2021)
- 57 M. Klett, T. Schwemmer, S. Wolf, X. Wu, D. Riegler, A. Dittmaier, D. Di Sante, G. Li, W. Hanke, S. Rachel and R. Thomale, *From high T_c to low T_c : Multiorbital effects in transition metal oxides*, Phys. Rev. B **104**, L100502 (2021)
- 56 M. Bauernfeind, J. Erhardt, P. Eck, P. K. Thakur, J. Gabel, T.-L. Lee, J. Schäfer, S. Moser, D. Di Sante, R. Claessen and G. Sangiovanni, *Design and realization of topological Dirac fermions on a triangular lattice*, Nat. Commun. **12**, 5396 (2021)
- 55 M. Ünzelmann, H. Bentmann, T. Figgemeier, P. Eck, J. N. Neu, F. Diekmann, S. Rohlf, J. Buck, M. Hoesch, M. Kalläne, K. Rossnagel, R. Thomale, T. Siegrist, G. Sangiovanni, D. Di Sante and F. Reinert, *Momentum-space signatures of Berry flux monopoles in a Weyl semimetal*, Nat. Commun. **12**, 3650 (2021)
- 55 X. Wu, K. Jiang, D. Di Sante, W. Hanke, A. P. Schnyder, J. Hu and R. Thomale, *Surface s -wave superconductivity for oxide-terminated infinite-layer nickelates*, arXiv:2008.06009
- 54 V. Jovic, A. Consiglio, K. E. Smith, C. Jozwiak, A. Bostwick, E. Rotenberg, D. Di Sante and S. Moser, *Momentum for Catalysis: How Surface Reactions Shape the RuO_2 Flat Surface State*, ACS Catalysis **11**, 1749 (2021)
- 54 D. V. Averyanov, P. Liu, I. S Sokolov, O. E. Parfenov, I. A. Karateev, D. Di Sante, C. Franchini, A. M. Tokmachev and V. G. Storchak, *Nanoscale synthesis of ionic analogues of bilayer silicene with high carrier mobility*, Journal of Materials Chemistry C **9**, 8545 (2021)
- 53 A. B. Odobesko, D. Di Sante, A. Kowalski, S. Wilfert, F. Friedrich, R. Thomale, G. Sangiovanni and M. Bode, *Observation of tunable single-atom Yu-Shiba-Rusinov states*, Physical Review B **102**, 1745049 (2020)
- 52 D. Di Sante, J. Erdmenger, M. Greiter, I. Matthaiakakis, R. Meyer, D. R. Fernandez, R. Thomale, E. van Loon, T. Wehling, *Turbulent hydrodynamics in strongly correlated Kagome metals*, Nat. Commun. **11**, 3997 (2020)
- 51 P. Schütz, M. Kamp, D. Di Sante, A. Lubk, B. Büchner, G. Sangiovanni, M. Sing, R. Claessen, *Electronic structure of epitaxial perovskite films in the two-dimensional limit: Role of the surface termination*, Applied Physics Letters **116**, 201601 (2020)
- 50 M. Ünzelmann, H. Bentmann, P. Eck, T. Kisslinger, B. Geldiyev, J. Rieger, S. Moser, R. C. Vidal, K. Kissner, L. Hammer, M. A. Schneider, T. Fauster, G. Sangiovanni, D. Di Sante and F. Reinert, *Orbital-driven Rashba effect in a binary honeycomb monolayer $AgTe$* , Phys. Rev. Lett. **124**, 176401 (2020)
- 49 X. Wu, D. Di Sante, T. Schwemmer, W. Hanke, H. Y. Hwang, S. Raghu and R. Thomale, *Robust $d_{x^2-y^2}$ -wave superconductivity of infinite-layer nickelates*, Phys. Rev. B **101**, 060504(R) (2020)
- 48 M. Fuchs, P. Liu, T. Schwemmer, G. Sangiovanni, R. Thomale, C. Franchini and D. Di Sante and S. Moser, *Kagome metal-organic frameworks as a platform for strongly correlated electrons*, Journal of Physics: Materials **3**, 025001 (2020)

- 47 D. M. Mahler, J.-B. Mayer, P. Leubner, L. Lunczer, D. Di Sante, G. Sangiovanni, R. Thomale, E. M. Hankiewicz, H. Buhmann, C. Gould and L. W. Molenkamp, *Interplay of Dirac nodes and Volkov-Pankratov surface states in compressively strained HgTe*, Phys. Rev. X **9**, 031034 (2019)
- 46 X. Wu, M. Fink, W. Hanke, R. Thomale and D. Di Sante, *Unconventional superconductivity in a doped quantum spin Hall insulator*, Phys. Rev. B **100**, 041117(R) (2019)
- 45 D. Di Sante, X. Wu, M. Fink, W. Hanke and R. Thomale, *Triplet superconductivity in the Dirac semimetal Germanene on a substrate*, Phys. Rev. B **99**, 201106(R) (2019)
- 44 C.-H. Min, H. Bentmann, J. N. Neu, P. Eck, S. K. Moser, T. Figgemeier, M. Ünzelmann, K. Treiber, P. Lutz, R. Koch, C. Jozwiak, A. Bostwick, E. Rotenberg, R. Thomale, G. Sangiovanni, T. Siegrist, D. Di Sante and F. Reinert, *Orbital Fingerprint of Topological Fermi Arcs in a Weyl Semimetal*, Phys. Rev. Lett. **122**, 116402 (2019)
- 43 S. Ok, L. Muechler, D. Di Sante, G. Sangiovanni, R. Thomale and T. Neupert, *Custodial glide symmetry of quantum spin Hall edge modes in WTe₂ monolayer*, Phys. Rev. B **99**, 121105(R) (2019)
- 42 P. K. Das, D. Di Sante, F. Cilento, C. Bigi, D. Kopic, D. Soranzio, A. Sterzi, J. A. Krieger, I. Vobornik, J. Fujii, T. Okuda, V. N. Strocov, M. B. H. Breese, F. Parmigiani, G. Rossi, S. Picozzi, R. Thomale, G. Sangiovanni, R. J. Cava and G. Panaccione, *Electronic properties of candidate type-II Weyl semimetal WTe₂. A review perspective*, Electron. Struct. **1**, 014003 (2019)
- 41 J. Slawinska, D. Di Sante, S. Varotto, C. Rinaldi, R. Bertacco and S. Picozzi, *Fe/GeTe(111) heterostructures as an avenue towards "ferroelectric Rashba semiconductors"-based spintronics*, Phys. Rev. B **99**, 075306 (2019)
- 40 D. Di Sante, P. Eck, M. Bauernfeind, M. Will, R. Thomale, J. Schäfer, R. Claessen and G. Sangiovanni, *Towards Topological Quasi-Freestanding Stanene via Substrate Engineering*, Phys. Rev. B **99**, 035145 (2019)
- 39 S. Ciuchi, D. Di Sante, V. Dobrosavljević and S. Fratini, *The origin of Mooij correlations in disordered metals*, npj Quantum Materials **3**, 44 (2018)
- 38 P. K. Das, J. Slawinska, I. Vobornik, J. Fujii, A. Regoutz, J. M. Kahk, D. O. Scanlon, B. J. Morgan, C. McGuinness, E. Plekhanov, D. Di Sante, Y.-S. Huang, R.-S. Chen, G. Rossi, S. Picozzi, W. R. Branford, G. Panaccione and D. J. Payne, *Role of spin-orbit coupling in the electronic structure of IrO₂*, Phys. Rev. Materials **2**, 065001 (2018)
- 37 C. Rinaldi, S. Varotto, M. Asa, J. Slawinska, J. Fujii, G. Vinai, S. Cecchi, D. Di Sante, R. Calarco, I. Vobornik, G. Panaccione, S. Picozzi and Riccardo Bertacco, *Ferroelectric Control of the Spin Texture in GeTe*, Nano Lett. **18**, 2751 (2018)
- 36 X. Wu, H. O. Jeschke, D. Di Sante, F. O. von Rohr, R. J. Cava and R. Thomale, *Origin of the pressure-dependent T_c valley in superconducting simple cubic phosphorus*, Phys. Rev. Materials **2**, 034802 (2018)
- 35 J. He, D. Di Sante, R. Li, X.-Q. Chen, J. M. Rondinelli and C. Franchini, *Tunable metal-insulator transition, Rashba effect and Weyl Fermions in a relativistic charge-ordered ferroelectric oxide*, Nat. Commun. **9**, 492 (2018)
- 34 P. Schütz, D. Di Sante, L. Dudy, J. Gabel, M. Stübinger, M. Kamp, Y. Huang, M. Capone, M.-A. Husanu, V.N. Strocov, G. Sangiovanni, M. Sing and R. Claessen, *Dimensionality-Driven Metal-Insulator Transition in Spin-Orbit-Coupled SrIrO₃*, Phys. Rev. Lett. **119**, 256404 (2017)

- 33 S. Hu, H. Gao, Y. Qi, Y. Tao, Y. Li, J. R. Reimers, M. Bokdam, C. Franchini, D. Di Sante, A. Stroppa and W. Rei, *Dipole Order in Halide Perovskites: Polarization and Rashba Band Splittings*, J. Phys. Chem. C **121**, 23045 (2017)
- 32 D. Di Sante, A. Hausoel, P. Barone, J. M. Tomczak, G. Sangiovanni and R. Thomale, *Realizing double Dirac particles in the presence of electronic interactions*, Phys. Rev. B **96**, 121106(R) (2017)
- 31 D. Di Sante, P. K. Das, C. Bigi, Z. Ergönenc, N. Gürtler, J. A. Krieger, T. Schmitt, M. N. Ali, G. Rossi, R. Thomale, C. Franchini, S. Picozzi, J. Fujii, V. N. Strocov, G. Sangiovanni, I. Vobornik, R. J. Cava and G. Panaccione, *Three-Dimensional Electronic Structure of the Type-II Weyl Semimetal WTe_2* , Phys. Rev. Lett. **119**, 026403 (2017)
- 30 D. Di Sante, S. Fratini, V. Dobrosavljević and S. Ciuchi, *Disorder-driven metal-insulator transitions in deformable lattices*, Phys. Rev. Lett. **118**, 036602 (2017)
- 29 V.V. Volobuev, P.S. Mandal, M. Galicka, O. Caha, J. Sánchez-Barriga, D. Di Sante, A. Varykhalov, A. Khier, S. Picozzi, G. Bauer, P. Kacman, R. Buczko, O. Rader and G. Springholz, *Giant Rashba Splitting in $Pb_{1-x}Sn_xTe$ (111) Topological Crystalline Insulator Films Controlled by Bi Doping in the Bulk*, Adv. Mater. **29**, 1604185 (2017)
- 28 P. Sessi, D. Di Sante, A. Szczerbakow, F. Glott, S. Wilfert, H. Schmidt, T. Bathon, P. Dziawa, M. Greiter, T. Neupert, G. Sangiovanni, T. Story, R. Thomale, M. Bode, *Robust spin-polarized midgap states at step edges of topological crystalline insulators*, Science **354**, 1269 (2016)
- 27 E. Bruyer, D. Di Sante, P. Barone, A. Stroppa, M.-H. Whangbo and S. Picozzi, *Possibility of combining ferroelectricity and Rashba-like spin splitting in monolayers of the 1T-type transition-metal dichalcogenides MX_2 ($M = Mo, W$; $X = S, Se, Te$)*, Phys. Rev. B **94**, 195402 (2016)
- 26 W.-P. Zhao, C. Shi, A. Stroppa, D. Di Sante, F. Cimpoesu and W. Zhang, *Lone-Pair-Electron-Driven Ionic Displacements in a Ferroelectric Metal–Organic Hybrid*, Inorg. Chem. **55**, 10337 (2016)
- 25 D. Di Sante, P. Barone, A. Stroppa, K. F. Garrity, D. Vanderbilt and S. Picozzi, *Intertwined Rashba, Dirac and Weyl Fermions in Hexagonal Hyperferroelectrics*, Phys. Rev. Lett. **117**, 076401 (2016)
- 24 A. Stroppa, P. Barone, D. Di Sante, M. Cuoco, S. Picozzi and M.-H. Whangbo, *Analogy between Jahn-Teller distortion and Rashba spin splitting, and Jahn-Teller counterpart of spin texture*, Int. J. Quantum Chem. **116**, 1442 (2016)
- 23 P.K. Das, D. Di Sante, I. Vobornik, J. Fujii, T. Okuda, E. Bruyer, A. Gyenis, B.E. Feldman, J. Tao, R. Ciancio, G. Rossi, M.N. Ali, S. Picozzi, A. Yadzani, G. Panaccione and R.J. Cava, *Layer-dependent quantum cooperation of electron and hole states in the anomalous semimetal WTe_2* , Nat. Commun. **7**, 11355 (2016) (Correction)
- 22 P.K. Das, D. Di Sante, I. Vobornik, J. Fujii, T. Okuda, E. Bruyer, A. Gyenis, B.E. Feldman, J. Tao, R. Ciancio, G. Rossi, M.N. Ali, S. Picozzi, A. Yadzani, G. Panaccione and R.J. Cava, *Layer-dependent quantum cooperation of electron and hole states in the anomalous semimetal WTe_2* , Nat. Commun. **7**, 10847 (2016)
- 21 M. Ptak, M. Maczka, A. Gagor, A. Sieradzki, A. Stroppa, D. Di Sante, J.M. Perez-Mato and L. Macalik, *Experimental and theoretical studies of structural phase transition in a novel polar perovskite-like $[C_2H_5NH_3][Na_{0.5}Fe_{0.5}(HCOO)_3]$ formate*, Dalton Transactions **45**, 2574 (2016)

- 20 M. Liebmann, C. Rinaldi, D. Di Sante, J. Kellner, C. Pauly, R.N. Wang, J.E. Boschker, A. Giussani, S. Bertoli, M. Cantoni, L. Baldrati, M. Asa, I. Vobornik, G. Panaccione, D. Marchenko, J. Sánchez-Barriga, O. Rader, R. Calarco, S. Picozzi, R. Bertacco, M. Morgenstern, *Giant Rashba-Type Spin Splitting in Ferroelectric GeTe(111)*, *Adv. Mater.* **28**, 560 (2016)
- 19 S. Ghosh, D. Di Sante and A. Stroppa, *Strain Tuning of Ferroelectric Polarization in Hybrid Organic Inorganic Perovskite Compounds*, *J. Phys. Chem. Lett.* **6**, 4553 (2015)
- 18 Y.F. Nie, D. Di Sante, S. Chatterjee, P.D.C. King, M. Uchida, S. Ciuchi, D.G. Schlom, and K.M. Shen, *Formation and Observation of a Quasi-Two-Dimensional $d(xy)$ Electron Liquid in Epitaxially Stabilized $Sr_{2-x}La_xTiO_4$ Thin Films*, *Phys. Rev. Lett.* **115**, 096405 (2015)
- 17 Y.Liu, C.Zhang, X. Yuan, T. Lei, C. Wang, D. Di Sante, A. Narayan, L. He, S. Picozzi, S. Sanvito, R. Che and F. Xiu, *Gate-tunable quantum oscillations in ambipolar Cd_3As_2 thin films*, *NPG Asia Materials* **7**, e221 (2015)
- 16 D. Di Sante, P. Barone, E. Plekhanov, S. Ciuchi and S. Picozzi, *Robustness against Disorder of Relativistic Spectral Properties in Chalcogenide Alloys*, *Sci. Rep.* **5**, 11285 (2015)
- 15 D. Di Sante, A. Stroppa, P. Barone, M.-H. Whangbo, S., *Emergence of ferroelectricity and spin-valley properties in two-dimensional honeycomb binary compounds*, *Phys. Rev. B* **91**, 161401(R) (2015) (Editors' Suggestion)
- 14 A. Stroppa, D. Di Sante, P. Barone, M. Bokdam, G. Kresse, C. Franchini, M.-H. Whangbo and S. Picozzi, *Tunable ferroelectric polarization and its interplay with spin-orbit coupling in tin iodide perovskites*, *Nat. Commun.* **5**, 5900 (2014)
- 13 R. Wang, J. Boschker, E. Bruyer, D. Di Sante, S. Picozzi, K. Perumal, A. Giussani, H. Riechert and R. Calarco, *Towards Truly Single Crystalline GeTe Films: The Relevance of the Substrate Surface*, *J. Phys. Chem. C* **118**, 29724 (2014)
- 12 A. Narayan, D. Di Sante, S. Picozzi and S. Sanvito, *Topological tuning in three-dimensional Dirac semimetals*, *Phys. Rev. Lett.* **113**, 256403 (2014)
- 11 E. Plekhanov, P. Barone, D. Di Sante and S. Picozzi, *Engineering relativistic effects in ferroelectric SnTe*, *Phys. Rev. B* **90**, 161108(R) (2014)
- 10 D. Di Sante and S. Ciuchi, *Strong interplay between electron-phonon interaction and disorder in low doped systems*, *Phys. Rev. B* **90**, 075111 (2014)
- 9 P. Barone, D. Di Sante and S. Picozzi, *Improper ferroelectricity at CaTiO₃ and CaMnO₃ Twin Walls*, *Phys. Rev. B*, **89**, 144104 (2014)
- 8 D. Di Sante, A. Stroppa, P. Jain and S. Picozzi, *Tuning the ferroelectric polarization in a multiferroic Metal-Organic Framework*, *J. Am. Chem. Soc.*, **135**, 18126 (2013)
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