

PERSONAL INFORMATION

Name, surname: **Edoardo Albisetti**

Nationality: **Italian**

Date and place of birth: **February 13th 1987, Milan**

Current Position: **Associate Professor**

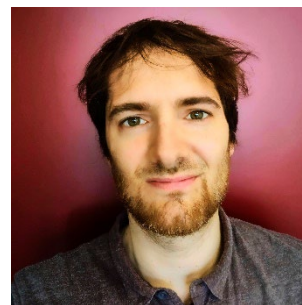
Department of Physics, Politecnico di Milano, Italy

E-mail: **edoardo.albisetti@polimi.it**

Web sites: **PhyND group website: <https://phynd.polimi.it/>**
H2020 Project B3YOND website: <https://cordis.europa.eu/project/id/948225>
H2020 Project SWING website: <https://edoalbi.wixsite.com/swing>
Personal Page: https://www.researchgate.net/profile/Edoardo_Albisetti

Twitter: **@EdoAlbis**

Researcher unique identifier(s): **Orcid: 0000-0002-8134-0482**
ResearcherID: F-5374-2016
Google Scholar: FE50IfAAAAJ



SHORT PROFILE

Edoardo obtained his M.S. *cum laude* at Politecnico di Milano, and his Ph.D. in Physics and “Nanotechnology and innovative nano-structured materials” from Politecnico di Milano, visiting Georgia Tech (USA) as a Ph.D. student. He did a post-doc at CUNY Advanced Science Research Center and New York University (USA).

He is currently Associate Professor and PI in the PhyND group at the Physics Department of Politecnico di Milano, Italy. He is author of > 40 publications in peer-reviewed journals among which, as main author, *Nature Nanotechnology* (cover page), *Nature Electronics*, *Nature Reviews*, *Advanced Materials* (cover page), *Applied Physics Letters* (cover page), 2 book chapters and 2 patents. He is reviewer for several journals including *Nature Nanotechnology*, *Nature Communications*, *Advanced Materials*. He gave > 50 conference contributions among which > 25 invited talks. He is lecturer in “Classical Mechanics and Thermodynamics”. He was awarded a Marie Skłodowska-Curie Global postdoctoral fellowship and an ERC Starting grant from the EU Commission.

His research interests are in experimental condensed matter physics, and in particular in nanomagnetism, magnonics and nanoelectronics, where he researches new advanced methodologies for manipulating the physical properties of matter, such as magnetic properties or electronic transport, and induce new functionalities in nanodevices.

EDUCATION AND TRAINING

- | | |
|-------------------|---|
| 01/2011 - 02/2014 | Ph.D. with merit in “Physics” and in “Nanotechnology and innovative nano-structured materials” from Politecnico di Milano and from “Scuola interpolitecnica di Dottorato” (Politecnico di Milano, Politecnico di Torino, Politecnico di Bari). Dissertation title: “Magnetic tunneling junctions for biosensing and antiferromagnet-based spintronic devices”. Supervisor: Prof. Riccardo Bertacco. |
| 09/2012 | Attendance to “School on Nanotechnologies”, Politecnico di Milano, Italy. |
| 02/2012 | Attendance to “Italian School on Magnetism”, Università di Pavia, Italy. |
| 09/2008 - 12/2010 | MS in Engineering Physics (110 <i>cum laude</i> /110) at Politecnico di Milano. |
| 03/2010 | Exchange student with Athens program at Telecom Paris Tech, France. |
| 09/2008 - 02/2009 | Exchange student with Erasmus program at Aalto University, Finland. |
| 09/2005 - 02/2008 | BS in Engineering Physics at Politecnico di Milano. |

PROFESSIONAL APPOINTMENTS

6/2023 – Currently	Associate Professor Department of Physics – Politecnico di Milano, Milan, Italy
10/2021 – 05/2023	Assistant Professor (Ricercatore a tempo determinato B) Department of Physics – Politecnico di Milano, Milan, Italy
12/2019 – 09/2021	Assistant Professor (Ricercatore a tempo determinato A) Department of Physics – Politecnico di Milano, Milan, Italy
11/2016 – 10/2019	Marie Skłodowska-Curie Post-doctoral Fellow – European Commission, Horizon 2020 Programme. CUNY Advanced Science Research Center, New York, USA & Department of Physics, Politecnico di Milano, Milano, Italy.
04/2019	Visiting Researcher. Tandon College of Engineering, NYU, New York, USA.
08/2014 – 10/2016	Post-doctoral Fellow. Polifab, Department of Physics, Politecnico di Milano, Milano, Italy.
02/2014	Visiting Researcher. Nanoscience Cooperative Research Center (CIC Nanogune), San Sebastian, Spain.
04/2013 - 12/2013	Visiting Researcher. Department of Physics, Georgia Institute of Technology, Atlanta, USA.
07/2013 - 07/2014	Research Fellow. L-NESS laboratory, Department of Physics, Politecnico di Milano, Como, Italy.
05/2011 - 06/2013	Research Fellow. Istituto di Chimica del Riconoscimento Molecolare (ICRM-CNR), Milano, Italy.

TRACK RECORD

Grants and fellowships

05/2023	Awarded with the PRIN grant from the Ministero Università e Ricerca Italiano (MUR). Project title: “Three-dimensional Processing technique of magnetic crystals for magnonics and nanomagnetism” (Grant #). Overall budget 241 k€. Role: Principal Investigator of PoliMi research unit.
07/2022	Awarded with the FARE Ricerca in Italia grant from the Ministero Università e Ricerca Italiano (MUR). Project title: “Nanostructuring Magnetism in crystalline materials – NAMASTE” (Grant #R20FC3PX8R). Overall budget 298 k€. Role: Principal Investigator.
11/2020	Granted with the “Abilitazione Scientifica Nazionale” per Professore di seconda fascia, settore concorsuale 02/B1, Fisica Sperimentale della Materia.
08/2020	Awarded with an ERC Starting Grant from the European Commission, Horizon 2020 programme. Project title: “Beyond nanofabrication via nanoscale phase engineering of matter – B3YOND”. (Grant #948225). Overall budget 1.5 M€. Role: Principal Investigator.
05/2020	Proposal entitled “Three-dimensional nanoscale imaging of propagating spin-wave modes” was granted beamtime at PolLux SLS Beamline, Switzerland. Role: Principal Investigator.
11/2017	Continuation Proposal entitled “Excitation and propagation of spin-waves within nanopatterned magnetic domain walls” was granted beamtime at PolLux SLS Beamline, Switzerland. Role: Principal Investigator.
06/2017	Proposal entitled “Excitation and propagation of spin-waves within nanopatterned magnetic domain walls” at PolLux SLS Beamline, Switzerland was selected for

- extra-funding from the European Commission Horizon 2020 research and innovation programme (Grant #730872), project CALIPSOplus. 1.4 k€ overall budget. Role: **Principal Investigator**.
- 05/2017 Proposal entitled “Excitation and propagation of spin-waves within nanopatterned magnetic domain walls” was granted beamtime at PolLux SLS Beamline, Switzerland. Role: **Principal Investigator**.
- 11/2016 - 10/2019 Awarded with the Marie Skłodowska-Curie Individual Fellowship from the European Commission, Horizon 2020 programme. Project title: “patterning Spin-Wave reconfigurable Nanodevices for loGics and computing – SWING” (Grant #705326). Overall budget 240 k€. Role: **Sole beneficiary**.
- 08/2014 - 08/2015 Granted with Post-doctoral Fellowship from Politecnico di Milano, Italy (public competition).
- 07/2013 - 07/2014 Granted with Ph.D. Research Fellowship from Politecnico di Milano, Italy (public competition).
- 01/2012 - 02/2014 Awarded with “Scuola interpolitecnica” scholarship (20 k€ overall budget), from “Scuola interpolitecnica di dottorato”, joint institution between Politecnico di Milano, Politecnico di Torino, Politecnico di Bari, Italy. Role: **Sole beneficiary**.
- 05/2011 - 06/2013 Granted with Ph.D. Research Fellowship from CNR, Italy (public competition).

Awards and honors

- 02/2021 **Best poster presentation award.** “Optically Inspired Nanomagnonics with Patterned Spin Textures in Synthetic Antiferromagnets” was selected as best presentation in the Magnet 2021 conference (online), Florence, Italy.
- 01/2021 **Selected by the European Commission as “Success Story from EU funded Research”.** Marie Skłodowska-Curie Project “SWING” was selected among the success stories of EU funded research. The related article is available at https://ec.europa.eu/research/infocentre/article_en.cfm?artid=53966
- 06/2019 **Selected for the 69th Lindau Nobel Laureate Meeting as masterclass speaker.**
Selected among 600 outstanding young scientists worldwide for participating to the 2019 Lindau Nobel Meetings with 39 Nobel Prize awardees. Selected by Nobel laureate Albert Fert as Masterclass speaker in the “Topology” symposium. Lindau meetings website: <https://www.lindau-nobel.org>
- 09/2018 **Winner of the Nanomaterials Young Investigator Award 2018.**
“For conceiving and demonstrating thermally assisted magnetic scanning probe lithography. This technique has applications in the design of novel nanomaterials and devices for nanomagnetism, spintronics, and magnonics.”
Nanomaterials (MDPI). Prize website: <https://goo.gl/MUnh2V>
- 01/2018 Nominated by CUNY for the 2018 Blavatnik Regional Awards, U.S.
- 05/2017 **Best poster award** “Doping 2D materials via Thermochemical Nanolithography” at the “MRSEC 2017 Annual Retreat”, May 3, 2017, New York.
- 02/2014 **Best paper award** “Towards the Impedimetric Tracking of Single Magnetically Trained Microparticles”, at “11th international multi-conference on systems, signals and devices”, February 11-14, 2014, Barcelona, Spain.

Publications

Total number of peer-reviewed publications: 44; 19 as main author (first, corresponding or last author), among which *Nature Nanotechnology* (cover article), *Nature Electronics*, *Nature Reviews*, *Advanced Materials* (cover article), *Applied Physics Letters* (cover article), *Communications Physics*, *Biosensors & Bioelectronics*, *Nanotechnology*.

* Corresponding author, ^ Shared authorship

1. V. Levati, D. Girardi, N. Pellizzi, M. Panzeri, M. Vitali, D. Petti*, **E. Albisetti***, “Phase Nanoengineering via Thermal Scanning Probe Lithography and Direct Laser Writing”, *Advanced Materials Technologies* (2023); <https://doi.org/10.1002/admt.202300166>
2. C. Groppi, F. Maspero, A. Rovelli, M. Asa, G. Malavena, C. Monzio Compagnoni, **E. Albisetti**, S. Vangelista, M.A. Badillo-Ávila and R. Bertacco, “Electrode-dependent asymmetric conduction mechanisms in $K_{0.5}Na_{0.5}NbO_3$ micro-capacitors”, *Materials Science in Semiconductor Processing* **160**, 107422 (2023); <https://doi.org/10.1016/j.mssp.2023.107422>
3. S. Cuccurullo, F. Maspero, O. Koplak, G. Pavese, **E. Albisetti**, M. Cantoni and R. Bertacco, “Impact of minor hysteresis loops in integrated inductors with ferromagnetic films”, *Applied Physics Letters* **122**, 113503 (2023); <https://doi.org/10.1063/5.0127390>
4. V. Unikandanunni, R. Medapalli, M. Asa, **E. Albisetti**, D. Petti, R. Bertacco, E. Fullerton, and S. Bonetti, “Inertial spin dynamics in epitaxial cobalt films”, *Physical Review Letters* **129**, 237201 (2022). <https://doi.org/10.1103/PhysRevLett.129.237201>
5. **E. Albisetti**, A. Calò, A. Zanut, X. Zheng, G.M. de Peppo, and E. Riedo*, “Thermal scanning probe lithography”, *Nature Reviews Methods Primers* **2**, 32 (2022). <https://doi.org/10.1038/s43586-022-00110-0>
6. D. Petti*, S. Tacchi*, and **E. Albisetti***, “Review on magnonics with engineered spin textures”, *Journal of Physics D: Applied Physics* **55**, 293003 (2022). <https://doi.org/10.1088/1361-6463/ac6465>
7. S. Varotto, L. Nessi, S. Cecchi, J. Sławińska, P. Noël, S. Petró, F. Fagiani, A. Novati, M. Cantoni, D. Petti, **E. Albisetti**, M. Costa, R. Calarco, M. Buongiorno Nardelli, M. Bibes, S. Picozzi, J.P. Attané, L. Vila, R. Bertacco, and C. Rinaldi*, “Room-temperature ferroelectric switching of spin-to-charge conversion in germanium telluride”, *Nature Electronics* **4**, 740 (2021). <https://doi.org/10.1038/s41928-021-00653-2>
8. M. Asa, C. Rinaldi, L. Nessi, D. Chrastina, D. Petti, **E. Albisetti**, R. Bertacco, M. Cantoni*, “Epitaxy and controlled oxidation of chromium ultrathin films on ferroelectric BaTiO₃ templates”, *Journal of Crystal Growth*, 558, 126012 (2021). <https://doi.org/10.1016/j.jcrysgro.2020.126012>
9. A. Barman, G. Gubbiotti, S. Ladak, A. O. Adeyeye, M. Krawczyk, J. Gräfe, C. Adelman, Sorin Cotofana, A. Naeemi, V. I Vasyuchka, B. Hillebrands, SA Nikitov, H. Yu, D. Grundler, A. Sadovnikov, A.A. Grachev, S.E. Sheshukova, J.-Y. Duquesne, M. Marangolo, G. Csaba, W. Porod, V.E. Demidov, S. Urazhdin, S. Demokritov, **E. Albisetti**, D. Petti, et al., “The 2021 Magnonics Roadmap”, *Journal of Physics: Condensed Matter* (2021). <https://doi.org/10.1088/1361-648X/abec1a>
10. M. Giacometti, F. Milesi, P. Coppadoro, A. Rizzo, F. Fagiani, C. Rinaldi, M. Cantoni, D. Petti, **E. Albisetti**, M. Sampietro, M. Ciardo, G. Siciliano, P. Alano, B. Lemen, J. Bombe, M. T. Nwaha Toukam, P. F. Tina, M. R. Gismondo, M. Corbellino, R. Grande, G. B. Fiore, G. Ferrari, S. Antinori, R. Bertacco*, “A Lab-On-chip Tool for Rapid, Quantitative, and Stage-selective Diagnosis of Malaria”, *Advanced Science* (2021). <https://doi.org/10.1002/advs.202004101>
11. M. Asa, C. Rinaldi, R. Pazzocco, D. Petti, **E. Albisetti**, R. Bertacco and M. Cantoni*, “Electrical readout of the antiferromagnetic state of IrMn through anomalous Hall effect”, *Journal of Applied Physics*, 128, 053904 (2020). <https://doi.org/10.1063/5.0009553>
12. X. Zheng, A. Calò, T. Cao, X. Liu, Z. Huang, P. M. Das, M. Drndic, **E. Albisetti**, F. Lavin, T. Li, V. Narang, W. P. King, J. W. Harrold, M. Vittadello, C. Aruta, D. Shahrjerdi* and E. Riedo*,

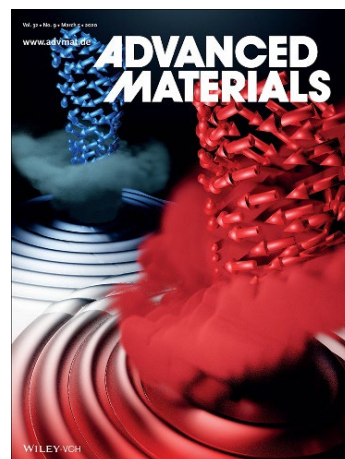
“Spatial defects nanoengineering for bipolar conductivity in MoS₂,” *Nature Communications*, 11, 1–12 (2020). <https://doi.org/10.1038/s41467-020-17241-1>

13. **E. Albisetti***, S. Tacchi, R. Silvani, G. Scaramuzzi, S. Finizio, S. Wintz, C. Rinaldi, M. Cantoni, J. Raabe, G. Carlotti, R. Bertacco, E. Riedo*, D. Petti*, “Optically Inspired Nanomagnonics with Nonreciprocal Spin Waves in Synthetic Antiferromagnets,” *Advanced Materials*, 32, 1906439 (2020). doi.org/10.1002/adma.201906439

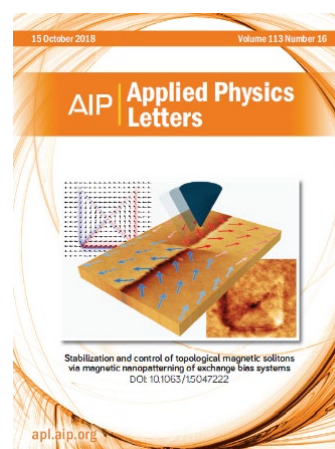
Front Cover page article.

Partial press release:

- “Magnonic nanoantennas: optically-inspired computing with spin waves one step closer”, article on [Eurekalert](#).
- “Magnonic nanoantennas” featured on [Phys.org](#).
- “Inventate le nanoantenne per onde di spin: più vicini i calcolatori analogici super efficienti” featured on [Le Scienze](#) (Italian).



14. **E. Albisetti***, G. Scaramuzzi, C. Rinaldi, M. Cantoni, R. Bertacco, D. Petti*, “Temperature Dependence of the Magnetic Properties of IrMn/CoFeB/Ru/CoFeB Exchange Biased Synthetic Antiferromagnets,” *Materials*, 13, 387 (2020). doi.org/10.3390/ma13020387
15. X. Liu, M. Kumar, A. Caló, **E. Albisetti**, X. Zheng, K. B. Manning, E. Elacqua, M. Weck, R. V. Ulijn, E. Riedo, “Sub-10 nm Resolution Patterning of Pockets for Enzyme Immobilization with Independent Density and Quasi-3D Topography Control,” *ACS Applied Materials & Interfaces*, 11, 41780 (2019). doi.org/10.1021/acsami.9b11844
16. X. Liu, M. Kumar, A. Caló, **E. Albisetti**, X. Zheng, K. B. Manning, E. Elacqua, M. Weck, R. Ulijn and E. Riedo, “High-throughput Protein Nanopatterning,” *Faraday Discussions*, 219, 33-43 (2019). doi.org/10.1039/C9FD00025A
17. X. Zheng, A. Caló, **E. Albisetti***, X. Liu, A. S. M. Alharbi, G. Arefe, X. Liu, M. Spieser, W. J. Yoo, T. Taniguchi, K. Watanabe, C. Aruta, A. Ciarrocchi, A. Kis, B.S. Lee, M. Lipson, J. Hone, D. Shahrjerdi, E. Riedo*, “Direct metal contacts on MoS₂ with vanishing Schottky barrier via thermal nanolithography,” *Nature Electronics*, 2, 17–25 (2019). doi.org/10.1038/s41928-018-0191-0
18. D. Moretti, M. Di Francesco, P. Sharma, S. Dante, **E. Albisetti**, M. Monticelli, R. Bertacco, D. Petti, P. Baldelli, F. Benfenati “Biocompatibility of a Magnetic Tunnel Junction Sensor Array for the Detection of Neuronal Signals in Culture,” *Frontiers in Neuroscience*, 12:909 (2018). doi.org/10.3389/fnins.2018.00909
19. **E. Albisetti***, A. Caló, M. Spieser, A. W. Knoll, E. Riedo, D. Petti “Stabilization and control of topological magnetic solitons via magnetic nanopatterning of exchange bias systems,” *Applied Physics Letters* 113, 162401 (2018). doi.org/10.1063/1.5047222
Cover Page article and **Featured article** in the October 15th issue of *Applied Physics Letters*.
20. **E. Albisetti***, D. Petti*, G. Sala, R. Silvani, S. Tacchi, S. Finizio, S. Wintz, A. Caló, X. Zheng, J. Raabe, E. Riedo, R. Bertacco “Nanoscale spin-wave circuits based on engineered reconfigurable spin-textures,” *Communications Physics (Nature Publishing Group)*, 1, 56 (2018). doi.org/10.1038/s42005-018-0056-x



Partial press release:

- “Nanoscale spin-wave circuits based on engineered reconfigurable spin-textures” **Feature article** on [Phys.org](#).
- “Con le onde di spin a un passo dai processori di domani” featured on [Galileonet](#) (Italian)
- “Politecnico di Milano: I processori del futuro sempre più vicini” featured on [Le Scienze](#) (Italian)

21. **E. Albisetti***, D. Petti, A. Calo, X. Zheng, R. Bertacco, E. Riedo* “Thermal scanning probe lithography: from spintronics to biomedical applications,” *SPIE Advanced Lithography*, 2018, San Jose, California, Novel Patterning Technologies 2018, 1058405 (2018).
doi.org/10.1117/12.2301253
22. D. Petti*, **E. Albisetti***, G. Sala, R. Silvani, M. Madami, S. Tacchi, S. Finizio, S. Wintz, A. Calò, X. Zheng, J. Raabe, E. Riedo, R. Bertacco “Spin textures patterned via thermally assisted magnetic scanning probe lithography for magnonics”, *Proceedings SPIE 10732, Spintronics XI*, 107321Q (2018). [doi:10.1117/12.2319866](https://doi.org/10.1117/12.2319866)
23. F. Lavini, A. Calò, Y. Gao, **E. Albisetti**, T.-D. Li, a T. Cao, G. Li, L. Cao, C. Aruta*, E. Riedo* “Friction and work function oscillatory behavior for an even and odd number of layers in polycrystalline MoS₂,” *Nanoscale*, 10, 8304 (2018). dx.doi.org/10.1039/C8NR00238J
24. P. P. Sharma, G. Gervasoni, **E. Albisetti**, F. D’Ercoli, M. Monticelli, D. Moretti, N. Forte, A. Rocchi, G. Ferrari, P. Baldelli, M. Sampietro, F. Benfenati, R. Bertacco, D. Petti, “Towards a magnetoresistive platform for neural signal recording,” *AIP Advances*, 7(5), 56706 (2017).
dx.doi.org/10.1063/1.4973947
Featured in the Highlights of Volume 7, Issue 5
25. **E. Albisetti***, D. Petti, M. Madami, S. Tacchi, P. Vavassori, E. Riedo, R. Bertacco, “Nanopatterning spin-textures: a route to reconfigurable magnonics,” *AIP Advances*, 7(5), 55601 (2017). dx.doi.org/10.1063/1.4973387
Invited paper, Featured in the Highlights of Volume 7, Issue 5
26. P. P. Sharma, **E. Albisetti**, M. Massetti, M. Scolari, C. La Torre, M. Monticelli, M. Leone, F. Damin, G. Gervasoni, G. Ferrari, F. Salice, E. Cerquaglia, G. Falduti, M. Cretich, E. Marchisio, M. Chiari, M. Sampietro, D. Petti*, and R. Bertacco, “Integrated platform for detecting pathogenic DNA via magnetic tunnelling junction-based biosensors,” *Sensors & Actuators: B. Chemical*, 242, 280–287 (2017). doi.org/10.1016/j.snb.2016.11.051
27. P. P. Sharma, **E. Albisetti***, M. Monticelli, R. Bertacco, and D. Petti*, “Exchange bias tuning by inclusion of non-magnetic impurities for magnetoresistive sensors,” *Sensors*, 16(7), 1030 (2016).
dx.doi.org/10.3390/s16071030
28. M. Monticelli*, D. V. Conca, **E. Albisetti**, A. Torti, P. P. Sharma, G. Kidiyoor, S. Barozzi, D. Parazzoli, P. Ciarletta, M. Lupi, D. Petti*, and R. Bertacco, “Magnetic domain wall tweezers: a new tool for mechanobiology studies on individual target cells,” *Lab Chip*, 16, 2882-2890 (2016). dx.doi.org/10.1039/C6LC00368K
29. **E. Albisetti***, K. Carroll, L. Xi, J. Curtis, D. Petti, R. Bertacco and E. Riedo*, “Thermochemical scanning probe lithography of protein gradients at the nanoscale,” *Nanotechnology*, 27, 315302 (2016). doi.org/10.1088/0957-4484/27/31/315302
30. **E. Albisetti***, D. Petti, M. Pancaldi, M. Madami, S. Tacchi, J. Curtis, W. P. King, A. Papp, G. Csaba, W. Porod, P. Vavassori, E. Riedo*, and R. Bertacco*, “Nanopatterning reconfigurable magnetic landscapes via thermally assisted scanning probe lithography,” *Nature Nanotechnology*, 11 (6), 545–551 (2016).
dx.doi.org/10.1038/nnano.2016.25



Cover Page article of the Vol. 11 No 6 issue of *Nature Nanotechnology*.

Partial press release:

- “Hot nano-pen writes reconfigurable magnetic nanopatterns” featured in [NanotechWeb](#),
 - “Reconfigurable magnetic nanopatterns” featured in [Science Daily](#)
 - “Nature Nanotechnology, in copertina i microchip magnetici Polimi” featured in [Sole 24 Ore](#) (Ita),
 - “Elettronica, nuova tecnica di fabbricazione ideata a Milano” featured in [Tom’s Hardware](#) (Ita).
31. M. Monticelli*, A. Torti, M. Cantoni, D. Petti*, **E. Albisetti**, A. Manzin, E. Guerriero, R. Sordan, G. Gervasoni, M. Carminati, G. Ferrari, M. Sampietro, and R. Bertacco, “On-Chip Magnetic Platform for

Single-Particle Manipulation with Integrated Electrical Feedback,” *Small*, 12 (7), 921–929 (2016).
[dx.doi.org/10.1002/sml.201500916](https://doi.org/10.1002/sml.201500916)

32. **E. Albisetti*** and D. Petti, “Domain wall engineering through exchange bias,” *Journal of Magnetism and Magnetic Materials*, 400, 230–235 (2016). [dx.doi.org/10.1016/j.jmmm.2015.07.009](https://doi.org/10.1016/j.jmmm.2015.07.009)
33. M. Monticelli, **E. Albisetti***, D. Petti, D. V. Conca, M. Falcone, P. P. Sharma, and R. Bertacco, “Towards an on-chip platform for the controlled application of forces via magnetic particles: A novel device for mechanobiology,” *Journal of Applied Physics*, 117 (17), 17B317 (2015).
[dx.doi.org/10.1063/1.4917191](https://doi.org/10.1063/1.4917191)
34. G. Gervasoni, M. Carminati, G. Ferrari, M. Sampietro, **E. Albisetti**, D. Petti, P. Sharma, and R. Bertacco, “A 12-channel dual-lock-in platform for magneto-resistive DNA detection with ppm resolution,” *2014 IEEE Biomedical Circuits and Systems Conference (BioCAS) Proceedings*, 316–319 (2014). [dx.doi.org/10.1109/BioCAS.2014.6981726](https://doi.org/10.1109/BioCAS.2014.6981726)
35. **E. Albisetti**, D. Petti*, F. Damin, M. Cretich, A. Torti, M. Chiari, and R. Bertacco, “Photolithographic bio-patterning of magnetic sensors for biomolecular recognition,” *Sensors Actuators B: Chemical*, 200, 39–46 (2014). [dx.doi.org/doi:10.1016/j.snb.2014.04.055](https://doi.org/10.1016/j.snb.2014.04.055)
36. M. Savoini*, C. Piovera, C. Rinaldi, **E. Albisetti**, D. Petti, A. R. Khorsand, L. Duò, C. Dallera, M. Cantoni, R. Bertacco, M. Finazzi, E. Carpena, A. V. Kimel, A. Kirilyuk, and T. Rasing, “Bias-controlled ultrafast demagnetization in magnetic tunnel junctions,” *Physical Review B*, 89 (14), 140402 (2014). [dx.doi.org/10.1103/PhysRevB.89.140402](https://doi.org/10.1103/PhysRevB.89.140402)
37. S. Dal Conte, M. Conforti, D. Petti, **E. Albisetti**, S. Longhi, R. Bertacco, C. De Angelis, G. Cerullo, and G. Della Valle*, “Disentangling electrons and lattice nonlinear optical response in metal-dielectric Bragg filters,” *Physical Review B*, 89 (12), 125122 (2014). [dx.doi.org/10.1103/PhysRevB.89.125122](https://doi.org/10.1103/PhysRevB.89.125122)
38. M. Carminati, G. Ferrari, S. U. Kwon, M. Sampietro, M. Monticelli, A. Torti, D. Petti, **E. Albisetti**, M. Cantoni, and R. Bertacco, “Towards the impedimetric tracking of single magnetically trailed microparticles,” *2014 IEEE 11th International Multi-Conference on Systems, Signals & Devices (SSD14)*, 1–5 (2014). [dx.doi.org/10.1109/SSD.2014.6808828](https://doi.org/10.1109/SSD.2014.6808828)
39. D. Petti*, A. Torti, F. Damin, L. Sola, M. Rusnati, **E. Albisetti**, A. Bugatti, R. Bertacco, and M. Chiari, “Functionalization of gold surfaces with copoly(DMA-NAS-MAPS) by dip coating: Surface characterization and hybridization tests,” *Sensors Actuators B: Chemical*, 190, 234–242 (2014).
[dx.doi.org/10.1016/j.snb.2013.08.077](https://doi.org/10.1016/j.snb.2013.08.077)
40. M. Monticelli, D. Petti, **E. Albisetti**, M. Cantoni, E. Guerriero, R. Sordan, M. Carminati, G. Ferrari, M. Sampietro, and R. Bertacco, “Closed loop microfluidic platform based on domain wall magnetic conduits: a novel tool for biology and medicine,” *MRS Proceedings*, 1686, mrss14–1686–v02–06 (2014). [dx.doi.org/10.1557/opl.2014.925](https://doi.org/10.1557/opl.2014.925)
41. **E. Albisetti***, D. Petti, M. Cantoni, F. Damin, A. Torti, M. Chiari, and R. Bertacco, “Conditions for efficient on-chip magnetic bead detection via magnetoresistive sensors,” *Biosensors and Bioelectronics*, 47, 213–217 (2013). [dx.doi.org/10.1016/j.bios.2013.03.016](https://doi.org/10.1016/j.bios.2013.03.016)
42. **E. Albisetti***, D. Petti, F. Damin, M. Cretich, M. Bagnati, L. Sola, M. Chiari, and R. Bertacco, “Optimization of the bio-functionalized area of magnetic biosensors,” *European Physical Journal B*, 86 (6), 261 (2013). [dx.doi.org/10.1140/epjb/e2013-30676-4](https://doi.org/10.1140/epjb/e2013-30676-4)
43. D. Petti, **E. Albisetti**, H. Reichlová, J. Gazquez, M. Varela, M. Molina-Ruiz, A. F. Lopeandía, K. Olejník, V. Novák, I. Fina, B. Dkhil, J. Hayakawa, X. Marti*, J. Wunderlich, T. Jungwirth, and R. Bertacco, “Storing magnetic information in IrMn/MgO/Ta tunnel junctions via field-cooling,” *Applied Physics Letters*, 102 (19), 192404 (2013). [dx.doi.org/10.1063/1.4804429](https://doi.org/10.1063/1.4804429)
44. A. Torti, V. Mondiali, A. Cattoni, M. Donolato, **E. Albisetti**, A. M. Haghiri-Gosnet, P. Vavassori, and R. Bertacco, “Single particle demultiplexer based on domain wall conduits,” *Applied Physics Letters*, 101 (14), 142405 (2012). [dx.doi.org/10.1063/1.4755785](https://doi.org/10.1063/1.4755785)

Books and book chapters

1. **E. Albisetti**, D. Petti, R. Bertacco, E. Riedo, “Magnetic nanopatterning via thermal scanning probe lithography”, Book chapter in “Nanofabrication”, Edited by José Maria De Teresa, IOP Publishing (2020). <https://iopscience.iop.org/book/978-0-7503-2608-7>
2. **E. Albisetti**, D. Petti, R. Bertacco, “Patterned spin-textures for magnonics”, Book chapter in “Three-Dimensional Magnonics”, Edited by Gianluca Gubbiotti, CRC Press (2019). <https://www.jennystanford.com/9789814800730/three-dimensional-magnonics/>

Patents

1. R. Bertacco, D. Petti, G. Ferrari, **E. Albisetti**, M. Giacometti, “Device and method for the quantification of cellular and non-cellular blood components”. Politecnico di Milano. US patent # US11534760B2 (2022).
2. R. Bertacco, D. Petti, **E. Albisetti**, E. Riedo, “Method and equipment for magnetic nanopatterning of substrates”. Politecnico di Milano, Georgia Tech Research Corporation. US patent Application # US20160172092A1 (2015).

Conferences and contributions

I gave 52 conference contributions, among which 26 invited talks. The following are my contributions.

Invited

1. **Invited Talk** “Phase nanoengineering in condensed matter via thermal nanolithography”, Quantum and nanoscience talk, Basel University, Basel, Switzerland (March 2023)
2. **Invited Talk** “Phase nanoengineering via thermal nanolithography”, TPW23, Thermal Probe Workshop, Heidelberg Instruments Nano, Zurich, Switzerland (March 2023)
3. **Selected Talk** “Phase nanoengineering via thermal nanolithography for nanomagnetism and magnonics”, NANO22, 16th International Conference on Nanostructured Materials, Seville, Spain (June 2022).
4. **Invited Talk** “Thermal scanning probe lithography: from fundamentals to applications”, IN2UB International Research Seminar, Institut de Nanociència i Nanotecnologia Universitat de Barcelona, Barcelona, Spain, Online (April 2022).
5. **Invited Talk** “Advances on Thermally-Assisted Magnetic Nanolithography and applications”, MNE 2021, the Workshop on Maskless Laser Lithography and Direct Writing for Nano- and Microfabrication, Turin, Italy, Online (September 2021).
6. **Invited Talk** “Designing with spins: magnonic metamaterials based on nanoengineered spin textures”, META 2021, the 11th International Conference on Metamaterials, Photonic Crystals and Plasmonics, University of Warsaw, Poland, Online (July 2021).
7. **Invited Talk** “Thermal Scanning Probe Lithography”, Nanolito 2021: Summer School in Basics and Applications of Nanolithography, University of Salamanca, Salamanca, Spain (June 2021).
8. **Invited Talk** “Designing with spins: nanopatterning multidimensional spin textures for magnonics”, International Collaborative Research Centre TRR 160 Seminar – TU Dortmund, Germany, Online (June 2021).
9. **Invited Talk** “Designing with Spins: Nanopatterned Spin Textures for Magnonics”, European Magnetism Association (EMA) Early Career Seminar, Online (April 2021).
10. **Invited Talk** “Beyond nanofabrication via nanoscale phase engineering of matter”, Dipartimento di Fisica, Politecnico di Milano, Online (February 2021).

11. **Invited Talk** “Designing with spins: thermal nanopatterning of spin textures for magnonics”, Heidelberg Instruments Webinar series: NanoFrazor Applications (Morning Series), Heidelberg (online at <https://tinyurl.com/y3dwn6nx>) (July 2020) (Invited by Dr. F. Holzner, Heidelberg Instruments).
12. **Invited Talk** “Designing with spins: thermal nanopatterning of spin textures for magnonics”, Heidelberg Instruments Webinar series: NanoFrazor Applications (Afternoon Series), Heidelberg (online at <https://tinyurl.com/y3dwn6nx>) (June 2020) (Invited by Dr. F. Holzner, Heidelberg Instruments).
13. **Invited Talk** “Writing magnetism with thermal probes: multidimensional spin-textures and magnonics”, CNR-IMM, Agrate Brianza, Italy (2019). (Invited by Dr. S. Brivio, CNR-IMM).
14. **Invited Talk** “Writing magnetism with thermal probes”, Advances in Direct Write Lithography Workshop, Grenoble, France (2019). (Invited by Dr. F. Holzner, SwissLitho)
15. **Invited Talk** “Nanomagnonics with engineered spin-textures”, Magnonics 2019, Carovigno, Italy (2019).
16. **Invited Masterclass Talk** “Nanopatterning multidimensional spin-textures for magnonics”, 69th Lindau Nobel Laureate Meeting, Lindau, Germany (2019). (Invited by Prof. Albert Fert, Nobel Prize in Physics).
17. **Invited Talk** “Designing with spins: nanomagnonics with engineered spin-textures”, Center for Quantum Phenomena, NYU, New York, USA (2019). (Invited by Prof. Andy Kent, NYU)
18. **Invited Talk** “Designing with spins: thermal nanolithography for spintronics and magnonics”, 6th Thermal Probe Workshop (TPW19), Zurich, Switzerland (2019). (Invited by Dr. F. Holzner, Swisslitho)
19. **Invited Talk** “Designing with spins: nanomagnonics with engineered spin-textures”, Institut de Physique et Chimie des Matériaux de Strasbourg - Université de Strasbourg, Strasbourg, France (2018). (Invited by Dr. M. Bailleul, IPCMS)
20. **Invited Talk** “Designing with spins: Reconfigurable nano-magnonics based on patterned spin-textures”, Dipartimento di Fisica, Politecnico di Milano, Italy (2018). (Invited by Prof. R. Bertacco, Polimi)
21. **Invited Talk** “Designing with spins: Reconfigurable nano-magnonics based on patterned spin-textures”, Invited Photon Science Seminar at Paul Scherrer Institute, Villigen, Switzerland (2018). (Invited by Dr. J. Raabe, PSI)
22. **Invited Keynote Talk** “Patterning Quantum Materials: Towards nanomagnonics based on patterned spin-textures”, The Future of Nanofabrication for 2D Materials workshop, New York, USA (2018). (Invited by Prof. E. Riedo, CUNY)
23. **Invited Talk** “Designing with Spins: Towards nanomagnonics based on patterned spin-textures”, Workshop on Innovative Nanoscale Devices and Systems, Na’pali Coast, USA (2017). (Invited by Prof. W. Porod, Notre Dame US)
24. **Invited Talk** “Thermally assisted magnetic nanopatterning of complex spin-textures: a route to reconfigurable magnonics”, IBM Research, Ruschlikon, Switzerland (2017). (Invited by Dr. A. Knoll, IBM Zurich)
25. **Invited Talk** “Crafting reconfigurable magnetic nanopatterns via thermally assisted scanning probe lithography”, Annual Conference on Magnetism and Magnetic Materials (MMM), New Orleans, USA (2016).
26. **Invited Talk** “Thermally assisted magnetic nanopatterning of complex spin-textures: a route to reconfigurable magnonics”, NanoTuesday Seminars, CUNY Advanced Science research center, New York, USA (2016). (Invited by Prof. E. Riedo, CUNY)

Contributed

1. **Talk** “Phase nanoengineering via thermal nanolithography”, AFM Workshop, PoliMi, Milano, Italy (November 2022).
2. **Talk** “Three-dimensional nanoscale imaging of propagating spin waves via time-resolved X-ray Laminography”, 108° Congresso Nazionale della Società Italiana di Fisica (SIF 2022), Milano, Italy (September 2022).
3. **Talk** “Phase nanoengineering via thermal nanolithography: nanopatterning magnetism and beyond”, Micro-Nano Engineering Conference 2021 (MNE2021), Torino, Italy (September 2021).
4. **Poster presentation** “Nanopatterning multidimensional spin-textures: from magnetic domains to topological solitons”, Advances in Magnetism 2020, Italy (June 2021).
5. **Talk** “NanoFrazor @ PoliFab, main features, processes and applications”, PoliFab user meeting, Politecnico di Milano, Online, Italy (April 2021).
6. **Poster presentation** “Optically Inspired Nanomagnonics with Patterned Spin Textures in Synthetic Antiferromagnets”, Magnet 2021, Florence, Italy (February 2021) (Winner of best poster award).
7. **Talk** “Optically Inspired Nanomagnonics with Patterned Spin Textures in Synthetic Antiferromagnets”, Joint European Magnetic Symposium (JEMS20), Online (December 2020).
8. **Talk** “Optically Inspired Nanomagnonics with Patterned Spin Textures in Synthetic Antiferromagnets”, Annual Conference on Magnetism and Magnetic Materials (MMM20), Online (November 2020).
9. **Talk** “Record breaking 2D material transistors”, 6th Thermal Probe Workshop (TPW19), Zurich, Switzerland (2019).
10. **Talk** “Nanoscale spin-wave circuits based on engineered reconfigurable spin-textures”, Joint European Magnetic Symposia (JEMS 2018), Mainz, Germany (2018).
11. **Talk** “Nanopatterning magnetic landscapes via thermally assisted scanning probe lithography”, 4TH Thermal Probe Workshop, Zurich (2017).
12. **Talk** “Nanopatterned reconfigurable spin-textures for magnonics”, APS March Meeting, New Orleans, USA (2017).
13. **Talk** “Nanopatterning reconfigurable magnetic landscapes via thermally assisted scanning probe lithography”, International Conference on Magnetism (ICM), Barcelona, Spain (2015).
14. **Talk** “On-chip manipulation of magnetic nanoparticles for cellular mechanobiology”, Annual Conference on Magnetism and Magnetic Materials (MMM), Honolulu, USA (2014).
15. **Talk** “Detection of Hepatitis E virus using a magnetic tunneling junction-based biosensing platform, IEEE International Magnetism Conference (Intermag), Dresden, Germany (2014).
16. **Poster presentation** “Ultrasensitive magnetic array for recording neural activity (UMANA)”, Dagli atomi al cervello, Politecnico di Milano, Milano, Italy (2014).
17. **Talk** “Nano-patterning of chemical gradients by thermochemical nano-lithography for neuronal guidance”, 7th Southeast Soft Material Workshop, Georgia Institute of Technology, Atlanta, USA (2013).
18. **Short Talk and Poster presentation** “Photolithographic bio-patterning of magnetic sensors for biomolecular recognition”, The 7th International Conference on Microtechnologies in Medicine and Biology (MMB), Marina del Rey, USA (2013).
19. **Talk** “Spintronic memory devices without ferromagnets: IrMn/MgO/Ta tunnel junctions exploiting field-cool anisotropic magnetoresistance”, Italian Conference on Magnetism (Magnet), Napoli, Italy (2013).
20. **Talk** “A tunable antiferromagnet-only-based magnetic tunnel junction”, International Colloquium on Magnetic Films and Surfaces (ICMFS), Shanghai, China (2012).
21. **Poster presentation** “Magnetoelectric coupling at Fe/BaTiO₃(001) interface”, International Colloquium on Magnetic Films and Surfaces (ICMFS), Shanghai, China (2012).

22. **Talk** “Selective bio-functionalization of magnetic biosensors”, Joint European Magnetic Symposia (JEMS), Parma, Italy (2012).
23. **Poster presentation** “Magnetic Tunneling Junctions for biomolecular detection”, Workshop on Superconductivity and Functional Oxides (SuperFOX), Como, Italy (2012).
24. **Talk** “Selective bio-functionalization of magnetic biosensors by optical lithography”, XCVII National Congress of Italian Physical Society, L'Aquila, Italy (2011).
25. **Talk** “Magnetic tunneling junctions for bead magnetorelaxometry”, X Convegno Nazionale Materiali Nanofasici, Bologna, Italy (2011).
26. **Poster presentation** “On-chip brownian magnetorelaxometry with magnetic tunnel junctions”, Italian Conference on Magnetism, Turin, Italy (2011).

Organization of scientific meetings

- | | |
|------|---|
| 2023 | Chair of the symposium “Novel magnetic techniques, instrumentation and metrology” at the Joint European Magnetic Symposium (JEMS23), Madrid, Spain |
| 2022 | Contributed to the organization of the “Italian Quantum Weeks” (April 2022) Politecnico di Milano, Milano, Italy |
| 2022 | Co-organizer of the “Advanced Micro and Nano Characterization of Hybrid Interfaces: a multidisciplinary approach” (7-8 November 2022) Politecnico di Milano, Milano, Italy. |
| 2022 | Session Chair for the “Frontiers in Nanostructured Magnetic Materials” symposium at the 16 th International Conference on Nanostructured Materials (NANO22), Seville, Spain. |
| 2019 | Contributed, via project H2020-SWING, to the organization of “Magnonics 2019” conference (http://magnonics2019.poliba.it/). |
| 2019 | Member of the scientific program committee of the 6 th Thermal Probe Workshop, Zurich, Switzerland, 13 th -14 th March 2019. |
| 2012 | Member of the local organization committee, Conference on Superconductivity and Functional Oxides (SuperFox2012, Como, Italy). |

Research Projects as PI

- “NA nanostructuring MAgnetism in crySTalline matERials – NAMASTE” (Grant #R20FC3PX8R). **Principal Investigator.**
- “Beyond nanofabrication via nanoscale phase engineering of matter – B3YOND”. ERC Starting Grant (Grant #948225) (2021-2026). **Principal Investigator.**
- “Three-dimensional nanoscale imaging of propagating spin-wave modes”. PolLux SLS Beamline Proposal (2020). **Principal Investigator.**
- “Excitation and propagation of spin-waves within nanopatterned magnetic domain walls”. PolLux SLS Beamline Continuation Proposal (2017). **Principal Investigator.**
- “Excitation and propagation of spin-waves within nanopatterned magnetic domain walls”. PolLux SLS Beamline Proposal (2017). The proposal won extra-funding from the EU H2020 programme (Grant #730872), project CALIPSOplus . **Principal Investigator.**
- “Patterning Spin-Wave reconfigurable Nanodevices for loGics and computing - SWING”. Marie Skłodowska-Curie Individual Global Fellowship, European Commission (Grant #705326) (2016-2019). **Principal Investigator.**

Research Projects as Participant

- “Sensor and method for characterizing the property of magnetic ink applied to security documents - MAGNISENSE”. Eurostars (2020-2022). **Co-participant.**
- “Ultrasensitive Magnetic Array for recording of Neuronal Activity - UMANA”. Cariplo Foundation (2014-2017). **Co-participant.**
- “Magnetic Information Storage in Antiferromagnet Spintronic Devices - MagISter”. Cariplo Foundation (2014-2017). **Co- Participant.**
- “Early-Stage Cancer diagnosis via Highly sensitive Lab-On-chip multitarget systems - ESCHILO”. Regione Lombardia – Cariplo Foundation (2014-2016). **Co-participant.**
- “Forces, mechanisms and pathways involved in the ATR-mediated control of nuclear plasticity in response to mechanical stress”. CEN Foundation (2013-2015). **Co- Participant.**
- “Ossidi Nanostrutturati: Multifunzionalità e Applicazioni”. FIRB (2012-2016). **Co-Participant.**
- “Innovative platform based on analytical systems for the rapid detection of bacterial and viral contamination in agrifood applications - LOCSSENS”. MIUR- Regione Lombardia (2012-2014). **Co- Participant.**
- “Spintronic Biosensors for Medicine - SpinBioMed”. Cariplo Foundation (2008-2012). **Co- Participant.**

Major Collaborations

- | | |
|----------------|--|
| 2021 – Present | Claire Donnelly, <i>Three-dimensional imaging of spin waves via Time-Resolved Laminography</i> , MPI, Germany |
| 2021 – Present | Olivier Boulle, <i>Stabilization and imaging of magnetic skyrmions in nanopatterned magnetic systems</i> , Spintec, France |
| 2021 – Present | Philipp Pirro, <i>Nanostructuring YIG thin films and measurements via BLS for magnonics</i> , TU Kaiserslautern, Germany |
| 2021 – Present | Anna Palau, <i>Nanopatterning and low-temperature measurements of complex oxides</i> , ICMAB, Spain |
| 2017 – 2020 | Lia Krusin, <i>Low-temperature measurements of electronic properties of topological insulators</i> , City University of New York, U.S. |
| 2017 – 2021 | Davood Shahrjerdi, <i>Measuring electronic transport in MoS₂ devices</i> , NYU, U.S. |
| 2016 – Present | Jörg Raabe, Simone Finizio, Sebastian Wintz, <i>Studying spin-waves via Scanning Transmission X-Ray Microscopy</i> , Paul Scherrer Institute, Switzerland. |
| 2016 – 2021 | A. Knoll, M. Spiezer, <i>Design and test of thermal cantilevers for thermal nanolithography</i> , SwissLitho AG and IBM Research Zurich, Switzerland. |
| 2015 – Present | Silvia Tacchi, Marco Madami, Giovanni Carlotti, <i>Imaging of spin-waves via Brillouin Light Scattering Microscopy</i> , Istituto Officina dei Materiali (CNR-IOM), Italy. |
| 2015 – 2017 | Paolo Vavassori, <i>Visualization of magnetic domain structures via Magneto-Optic Kerr Effect microscopy</i> , CIC Nanogune, Spain. |
| 2015 – 2016 | Wolfgang Porod, Gyorgy Csaba, Adam Papp, <i>Micromagnetic simulations of spin-waves in magnetic multilayers</i> , University of Notre Dame, U.S. |
| 2012 – 2015 | Xavi Marti, Tomas Jungwirth, <i>Design and fabrication of antiferromagnetic spintronic devices</i> , IGSresearch Ltd., Spain and Academy of Sciences of Czech Republic. |

Experiments at large facilities

- **Swiss Light Source at PSI, PolLux Beamline.** The experiment aimed at studying the three-dimensional localization of propagating spin-wave modes in synthetic antiferromagnets samples patterned with tam-

SPL. The Soft-X-Ray Laminography (SoXL) technique based on the X-Ray Magnetic Circular Dichroism was used. Villigen, Switzerland (2020).

- **Swiss Light Source at PSI, PolLux Beamline.** The experiment aimed at detecting the spin waves emitted by exchange bias synthetic antiferromagnetic (SAF) samples patterned with tam-SPL. Scanning Transmission X-Ray Microscopy was used for performing X-Ray Magnetic Circular Dichroism (STXM-XMCD). Villigen, Switzerland (2018).
- **Swiss Light Source at PSI, PolLux Beamline.** The experiment aimed at detecting the static and dynamics of the magnetization in IrMn/CoFeB samples patterned with tam-SPL. Scanning Transmission X-Ray Microscopy was used for performing X-Ray Magnetic Circular Dichroism (STXM-XMCD). Villigen, Switzerland (2017).

Commission of trust

Peer Review of journal articles

2023	ACS Applied Electronic Materials (1)
2022	Advanced Functional Materials (1), Small (1).
2021	Nano Letters (1). Advanced Electronic Materials (1).
2020	Journal of Magnetism and Magnetic Materials (1). ACS Applied Bio Materials (1). Journal of Applied Physics (1). Advanced Materials (1). ACS Nano (1). Applied Physics Letters (1).
2019	Nature Nanotechnology (1). Journal of Applied Physics (1). Nature Communications (1).
2018	ACS Applied Materials and Interfaces (1).
2017	Nature Nanotechnology (1). Lab on a chip, RSC (3).
2016	Sensors, MDPI (2).
2015	Analytical Methods, RSC (1). Journal of Applied Physics, AIP (1).

Peer Review of funding proposals

2021	External Reviewer for the German Research Foundation (DFG)
2020	Evaluator for the European Commission Marie Skłodowska-Curie Actions. Call H2020-MSCA-IF-2020.
2020	External Reviewer for the French National Research Agency (ANR).
2019	External Reviewer for the Icelandic Research Fund (IRF).

Member of Commissions

09/2022	Member of the Commission of the Bachelor Degree in Engineering Physics, Polimi.
2021	Member of the Commission for public selection of the Ph.D. admissions in Physics, Polimi.
04/2021	Member of the Commission of the Master Degree in Engineering Physics, Polimi.

Teaching activity

2021 - Currently	Lecturer of “General Physics – Classical Mechanics and Thermodynamics” course for BS Engineering Students, Politecnico di Milano, Italy.
2020	Lecturer of “Advanced Micro and Nanofabrication Technologies” course for MS Engineering students, Politecnico di Milano, Italy.
2020 - 2021	Laboratory Teacher of “Nanomagnetism and Spintronics” course for MS Engineering students, Politecnico di Milano, Italy.
2020 - 2021	Lecturer of “General Physics – Electromagnetism” course for BS Engineering Students, Politecnico di Milano, Italy.
2018	Teaching Assistant for the course, Physics 55600, Current Topics in Physics. Undergraduate Students, City University of New York, US.
2016	Laboratory Teacher for “Microelectronic Technologies” course for MS Engineering students, Politecnico di Milano.

2012 - 2016	Teaching Assistant in “Fundamentals of Physics” for Engineering students, Politecnico di Milano.
2011 - 2013	Teaching Assistant in “Magnetic Nanostructures” for MS Engineering Students, Politecnico di Milano.
2011 - 2012	Laboratory Teaching Assistant in “Fundamentals of Physics” course for Engineering students, Politecnico di Milano.

Tutoring activities

I have supervised or co-supervised 6 Ph.D. students, 8 Master Thesis students, 2 interns and several Bachelor Thesis students.

PhD. Students

2022 – Currently	Valerio Levati, Supervisor, Politecnico di Milano Matteo Panzeri, Supervisor, Politecnico di Milano
2021 – Currently	Davide Girardi, Supervisor, Politecnico di Milano
2017 – 2018	Xiangyu Liu, Co-supervisor, graduated 2019 from CUNY
2014 – 2016	Marco Monticelli, Co-supervisor, graduated 2017 from Politecnico di Milano Parikshit Sharma, Co-supervisor, graduated 2017 from Politecnico di Milano

Master thesis Students

Matteo Vitali (2023), Guglielmo Rubini (2022), Davide Girardi (2021), Fabrizio Pirola (2020), Filippo D’Ercoli (2017), Martina Scolari (2016), Matteo Massetti (2015), Dario Conca (2014)

Bachelor thesis Students

Giorgio Trespidi (2022), Emanuele Albertini (2022), Lorenzo Boccaccia (2021), Tommaso Rizzi (2021), Francesco Gucci (2020), Giorgio Fabris (2020)

Interns

2023	Jordi Alcalà, Supervisor Erasmus Ph.D. Student from ICMAB, Barcelona
2022	Alessandro Buzzi, Supervisor Internship, Master degree at Politecnico di Torino

Membership of scientific societies

2022	Member, ERC in Italy
2019 – Present	Member, Lindau Alumni Network
2018 – Present	Member, Marie Curie Alumni Association
2018 – Present	Member, European Physical Society (EPS)
2018 – Present	Member, IEEE Magnetism Society
2018 – Present	Member, IEEE Nanotechnology Council
2017 – Present	Member, American Physical Society (APS)

Outreach, communications activities and press

2022	Interviewed for the European Physical Society Condensed Matter Division monthly newsletter. (https://bit.ly/3zxKmUK)
2021	Invited to give a talk entitled “Nanotecnologie: cosa sono e dove trovarle?” at the Rotary Club Milano Sud-Ovest Conviviale on April 19 th 2021 (Online Seminar)
2020	Interview for the Academic Career Development e Academic CV building Workshop for Ph.D. students and postdocs (Politecnico di Milano)
2020	Interview and Application Note article “NanoFrazor for patterning of nanoscale spin textures” on “The Lithographer” journal by Heidelberg Instruments.

- 2019 Interview for La Repubblica (daily newspaper). “Creo materiali con proprietà fisiche nuove che non ci sono in natura” (in Italian). La Repubblica (<https://tinyurl.com/wr9auaw>).
- 2020 I participated in the framework of the “EU Corner” to the European Researchers’ Night with an oral presentation of the SWING H2020 project.
- 2018 I participated to the European Researchers’ Night with a poster presentation of the SWING H2020 project.
- 2016 I participated to the European Researchers’ Night with “The Cell Race” stand. The aim was to involve primary and secondary school students in a “fun simulation” of the research activity.

Other

I like photography, graphic design, playing music and traveling. I have the European (EU) car and motorbike driver’s license.