Curriculum Vitae English

Marco Malvestuto
Date and Place of birth: 09/05/1977, Sulmona (AQ), Italy,

Contact Information

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PRESENT POSITION

- **Researcher and Beamline Scientist** at Elettra-Sincrotrone Trieste
    - **Coordinator** of the MagneDyn project at the FERMI Free Electron Laser http://www.elettra.trieste.it/lightsources/fermi/fermi-beamlines/magnedyn.html
- **"Docente a contratto"**, Department of Physics, University of Trieste.
    - Courses "Modern Optics Laboratory" FIS/03 (a.a. 2010/2011) and "Modern Physics" (174SM) FIS/01, CFU 6, Bachelor's degree (a.a. 2011/2012, 2012/2013, 2013/2014, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021).
- In 2017 I received the **Abilitazione Scientifica Nazionale** from the Italian Ministry for an associate professorship in Condensed Matter Physics (02/B1-FISICA SPERIMENTALE DELLA MATERIA).
- CNR Research associate

RESEARCH INTERESTS

I conduct experiments in solid-state physics.

My scientific interests are mainly the study of phases and phase transitions of complex materials such as low and nano dimensional magnetic and strongly interacting electron systems and phase change materials.

My scientific background is across the fields of condensed matter physics, ultrafast laser spectroscopy, radiation-matter interaction.

I am familiar with techniques across the different fields ranging from **conventional** and **time-resolved** soft x-ray absorption (XAS), Resonant X-ray inelastic spectroscopy (RIXS), X-ray photoemission. I have also a deep knowledge of XAS spectra modeling and analysis of a variety of solid-state systems by means of state-of-the-art *ab*-initio theories and calculation codes.

I am in charge of the FEL beamline for **magnetodynamical experiments** MagneDyn.

I am also an experienced heavy user of synchrotron radiation sources and proposer or co-proposer of numerous experiments at major synchrotron radiation facilities, in particular (Elettra (Italy), ESRF (France), Diamond (UK), Soleil (France), ALS (USA)).

EDUCATION

- **PhD degree in Physics, Department of Physics, University of Bologna**. Thesis title (12 June 2006) *"Atomic and electronic structure of rare-earth oxide thin films on silicon". Advisor:* Prof. Federico Boscherini
- **Degree in Physics**: **110/110 cum laude**, Dipartimento di Fisica**, Universita' dell'Aquila** (tutor Prof. Adriano Filipponi); (July 2002) Thesis title: *"Study of the phenomenon of recalescence in undercooled liquid germanium"*
- **High School Diploma** (Diploma Liceo Scientifico) "Enrico Fermi" di Sulmona (AQ), July 1996:

WORKING EXPERIENCE

- **Researcher at Elettra-Sincrotrone Trieste 2007-present** (permanent position)
- **Adjunct professor** (Docente a contratto) at the **Physics department of University of Trieste**
- **Visiting postdoc associate**, **Advanced Light Source (Lawrence Berkeley National Laboratory – USA)** (group of Prof. C.S. Fadley (University of California, Davis)) (2007-2008)
- **PhD student** at the Physics Department of University of Bologna, Italy (2003-2006)

TEACHING EXPERIENCE

- "Modern Optics Laboratory" (a.a. 2010/2011) and "Modern Physics" (a.a. 2011/12, 12/13, 15/16, 16/17, 17/18, 18/19).
- **2010-2011: tutor Master Thesis** of Lorenzo Galli "Toward a comprehensive picture of the orbital polarization and the magnetic properties of ruthenates" by Lorenzo Galli, Physics department, University of Trieste
- **2010-2011: tutor Master Thesis** of Giulio Vampa "Toward the observation of ultrafast demagnetization by high harmonic generated ultraviolet coherent pulses" Physics department, University of Trieste
- **2010-2013: tutor PhD** work of Valentina Capogrosso Physics department, University of Trieste
- **2015: tutor Bachelor Thesis Filippo Glerean,** Physics department, University of Trieste
- **2017: tutor Bachelor Thesis Simone Laterza,** Physics department, University of Trieste
- **2017: tutor Bachelor Thesis Federico Loi,** Physics department, University of Trieste
- **2015-2018**: **co-supervisor PhD** Barbara Casarin, Physics department, University of Trieste

INITIATIVES and FUNDED PROJECTS

- **MagneDyn Initiative (role: Head of the beamline)**: ultra-fast magnetization dynamics in the light of Free Electron Laser (Fermi@Elettra). "*Magneto dynamical studies at Fermi@Elettra. A White paper*." Editors : F. Parmigiani and **M. Malvestuto** (see bibliography)
- **Time resolved-XAS@synchrotrons (role: coordinator)**: a setup for time resolved soft x-ray absorption experiments in multi bunch mode (**ref. doi: 10.1063/1.3669787**). (using synchronous **femtosecond laser pulses** and synchrotron **x-ray pulses (~ 60 ps)** at the T-Rex laboratory and the BACH beamline at Elettra - Sincrotrone Trieste.)

- **PASTRY, call** FP7-ICT-2011-8 **(role: local coordinator):** The project aims at exploiting the potential of Chalcogenide SuperLattices (CSL)-Phase change memory (PCM) cells, starting from an atomistic understanding of switching in CSL materials through experiments and physical model development, leading to new insights for CSL engineering **(total budget: 3,067,901.00 euros)**
- **Ex-Pro-Rel**: Excitation PROcesses and RELaxation in condensed matter and nanostructures: methodological, instrumental and scientific challenges **(role: local coordinator)** (**total budget: 200 keuros**)

ACTIVE COLLABORATIONS

- Prof. J. Robertson, University of Cambridge, UK: Modeling of the switching mechanism in Chalcogenide super lattice
- Dr. E. Varesi, Micron Technology, Milano, Italy: nanostructured chalcogenide super lattice
- Prof. R. Calarco, Paul Drude Institute, Berlin, Germany: Phase change GST superlattice
- Prof. M. Wuttig, Institute of Physics of the RWTH Aachen University: : Phase change GST superlattice
- Prof. B. Kooi Zernike Institute for Advanced Materials University of Groningen
- Dr. A. Naldoni CNR – INSTM and ERIC Laboratory of "Catalytic materials for hydrogen production": plasmonic resonant energy transfer in nanostructured TiO2/Au systems
- Prof. F. Boscherini, Department of Physics, University of Bologna: light – induced energy transfer processes in Au/TiO2 nanocomposites
- Prof. Dr. Ir. P.H.M. van Loosdrecht, Zernike Institute for Advanced Materials, The Netherlands: orbital physics and phase transitions in layered manganites
- Dr. Mario Cuoco and Dr. A. Vecchione, University of Salerno, Italy: Orbital physics in layered ruthenates and superconducting/magnetic heterostructures
- **Collaborator**: laboratory for X-ray time resolved experiments (T-Rex), Elettra http://www.elettra.trieste.it/labs/t-rex.html
- **Collaborator**: BACH beamline at ELETTRA;

Conferences attended

- VII National School on Synchrotron Light-Santa Margherita di Pula (Cagliari) 15-26 September 2003
- *"INFMeeting-National Conference on Physics of Matter"*, Bari (Italy) 24-28 June 2002, (**poster**: '$Ag_{(1-q)}Ge_q$ terminal solid solution', 'undercooled liquids')
- *"INFMeeting-National Conference on Physics of Matter"*, Genova (Italy) 23-25 June 2003, (**oral presentation**: 'High dielectric costant materials: Y_2O_3 thin films deposited on silicon substrate: an EXAFS structural study').
- SRMS-4 Conference: Synchrotron radiation in material science (August 2004), Grenoble, France (**poster**: High dielectric constant Y_2O_3 ultra thin films on Si(001): a structural study)

- AIC2004: Associazione Nazionale Cristallografia, XXXIV congresso nazionale 26-29 settembre 2004, Department of Physics, University “La Sapienza”, Rome, Italy (**poster**: XAS structural study of High dielectric constants rare earth oxide ultra thin films on Si(001)).
- SCM: III Scuola Nazionale in Simulazioni Computazionali Multiscala 14-18 febbraio 2005, Department of Physics Chemistry, Modena, Italy
- XII convegno SILS (Società Italiana di Luce di Sincrotrone), Modena, Italy. (**Poster**: Local atomic and electronic structure of High Dielectric constant ultra thin film on Si(100)).
- E-MRS 2005 Spring Meeting 31 May - 3 June 2005, Strasbourg (France). (**Poster**: Local atomic and electronic structure of Yb_2O_3 and Lu_2O_3 High Dielectric constant ultra thin film on Si(100)).
- E-MRS 2006 Spring Meeting Nice, France, May 29 - June 2, 2006 (**Oral:** Study of the initial growth stages of Lu_2O_3 on Si(100)
- First International workshop on the physical properties of lamellar cobaltates , July 16th – July 20th 2006, Orsay, France. Laboratory of Solid State Physics of Université Paris Sud XI.
- 1st International Summer School of the Mainz-MATCOR Graduate School of Excellence, 25-30 September, 2006, University of Mainz, Mainz, Germany.
- 14th International Conference on X-ray Absorption Fine Structure (XAFS14), Camerino, Italy, July 26-3, 2009, **poster**
- Joint Conferences on Advanced Materials FNMA 09, September 27-20, 2009, Sulmona-L’Aquila Italy, **poster**
- Excitement in magnetism: Spin-dependent scattering and coupling of excitations in ferromagnets International Workshop at Ringberg Castle (Tegernsee, Germany) November 22-25, 2009, **oral presentation**
- 10th International Workshop on X-Ray Spectroscopy of Magnetic Solids (XRMS10) 10-11 June 2010, **poster.**
- 7th International Conference on Synchrotron Radiation in Materials Science-Oxford (SRMS-7)11-14 2010, **oral presentation, Invited**
- **Science at FELs 2012** 15-18 July, 2012 at DESY in Hamburg, Germany
- **UMC2012** Strasbourg, poster presentation
- **E\pcos 2013**, poster presentation
- **AIMAGN 2014,** Rome**, Invited talk**
- **E\pcos 2015**, Amsterdam, poster presentation
- **XAFS16, 2015**, Karlsruhe, oral presentation

Invited talk

- 7th International Conference on Synchrotron Radiation in Materials Science-Oxford (SRMS-7)11-14 2010, **oral presentation, Invited**
- **AIMAGN 2014,** Rome**, Invited talk**
- **E\pcos 2016, Cambridge, invited talk**
- 11th International Conference on Inelastic X-ray Scattering (IXS2019), **invited talk**
- Oxide Superspin 2019 **OSS 2019** Seoul National University, **invited talk**

PUBLICATIONS LIST

1. "*Lattice expansion and Ge solubility in the $Ag_{(1-q)}Ge_q$ terminal solid solution*" A Filipponi, V. M. Giordano, and M. Malvestuto, **Physica Status Solidi** (b) 234, No. 2, 496-505 (2002);
2. "*An experimental set-up for the nucleation rate determination in supported undercooled liquid metal droplets*" A Filipponi and M. Malvestuto, **Meas. Sci. Technol.** 14(2003) 875-882 (Thesis work)
3. "*Structural characterization of epitaxial Y_2O_3 on Si (001) and of the Y_2O_3/Si interface*" S. Spiga, C. Wiemer, G. Tallarida, M. Fanciulli, M. Malvestuto, F. Boscherini, F. D'Acapito, A. Dimoulas, G. Vellianitis, and G. Mavrou, **Materials Science and Engineering: B**, 109 (2004) pp. 47-51.
4. "*X-ray absorption study of the growth of Y_2O_3 on Si*" M. Malvestuto, F. Boscherini et al., **Phys. Rev. B 71**, 075318 (2005)
5. *"The atomic site of As implanted in Si at ultra-low energies"* F. D'Acapito, C. Maurizio, M. Malvestuto, **Materials Science and Engineering B** 114–115 (2004) 386–389
6. *"X-ray absorption spectroscopy study of Yb_2O_3 and Lu_2O_3 thin films deposited on Si(100) by Atomic Layer Deposition*." M. Malvestuto, G. Scarel, C. Wiemer, M. Fanciulli, F. D'Acapito and F. Boscherini, **Nuclear Instr. and Methods B**. 246 (1), pp. 90-95 **(2006).**
7. *"Local atomic environment of high-k oxides on silicon probed by x-ray absorption spectroscopy"* M. Malvestuto and F. Boscherini, ***Topics in Applied Physics*** 106, pp. 143-152, (Springer), Editors M. Fanciulli and G. Scarel.
8. *"In-situ photoemission study of Lu_2O_3 ultra thin films deposited on Si(100)"* M. Malvestuto and F. Boscherini, M. Pedio, S. Nannarone ***Journal of Applied Physics*** 101 (7), art. no. 074104 ***(2007)***
9. *"Temperature-independent ytterbium valence in YbGaGe"* B.P. Doyle, E. Carleschi, E. Magnano, M. Malvestuto, A. Dee, A.S. Wills, Y. Janssen and P.C. Canfield **Physical Review B** 75, 235109 **(2007)**
10. *"Anions relative location in the group-V sublattice of GaAsSbN/GaAs epilayers"* G. Ciatto, J. C. Harmand, F. Glas, L. Largeau,M. Le Du, F.Boscherini, M. Malvestuto, P. Glatzel, R. Alonso Mori, and L. Floreano ***Physical Review B - Condensed Matter and Materials Physics*** 75 (24) **2007**, art. no. 245212
11. *"X-ray absorption and diffraction study of II-VI dilute oxide semiconductor alloy epilayers"* F Boscherini, M Malvestuto, G Ciatto, F D'Acapito, G Bisognin, D. De Salvador, M Felici, A Polimeni, and Y Nabetani ***Journal of Physics Condensed Matter*** 19 (44) **2007**, art. no. 446201

12. "*Evidence for Strong Itinerant Spin Fluctuations in the Normal State of CeFeAsO(0.89)F(0.11) Iron-Oxypnictides*" F. Bondino, E. Magnano, M. Malvestuto, F. Parmigiani, M. A. McGuire, A. S. Sefat, B. C. Sales, R. Jin, D. Mandrus, E. W. Plummer, D. J. Singh, N. Mannella, **Physical Review Letters,** 101 (26) 267001 **(2008)**
13. *Overlap of Cu 3d and F 2p orbitals and low-energy excitations in KCuF3 studied by polarization-dependent x-ray absorption and emission spectroscopy,* Bondino, F., Malvestuto, M., Magnano, E., Zangrando, M., Zacchigna, M., Ghigna, P., Parmigiani, F. **Physical Review B - Condensed Matter and Materials Physics** 79 (11), art. no. 115120 **(2009)**
14. *Absolute spin calibration of an electron spin polarimeter by spin-resolved photoemission from the Au(111) surface states*, Céphise M. Cacho, Sergio Vlaic, Marco Malvestuto, Barbara Ressel, Elaine A. Seddon, and Fulvio Parmigiani, **Rev. Sci. Instrum.** 80, 043904 **(2009)**
15. *Electronic structure and charge transfer processesin Bi-Ca misfit cobaltate*, E Carleschi, M Malvestuto, V Brouet, M Zacchigna, S. H´ebert, W Kobayashi, H Muguerra, D Grebille, and F.Parmigiani**, Physical Review B** 80, 035114 (**2009**)
16. *Orbital symmetry of Ba(Fe1-xCox)2As 2 superconductors probed with x-ray absorption spectroscopy*. C Parks Cheney, F Bondino, T.A Callcott, P Vilmercati, D Ederer, E Magnano, M Malvestuto, F Parmigiani, A.S Sefat, M.A McGuire, R Jin, B.C Sales, D Mandrus, D.J Singh, J.W Freeland, N Mannella. **Physical Review B - Condensed Matter and Materials Physics** (2010) vol. 81 (10)
17. Electronic structure of $CeFeAsO_{1-x}F_x$ (x=0, 0.11, and 0.12) F. Bondino, E. Magnano, C. H. Booth, F. Offi, G. Panaccione, M. Malvestuto, G. Paolicelli, L. Simonelli, F. Parmigiani, M. A. McGuire, A. S. Sefat, B. C. Sales, R. Jin, P. Vilmercati, D. Mandrus, D. J. Singh, and N. Mannella **Phys. Rev. B 82, 014529 (2010) – Published July 23, 2010**
18. *Enhancement of room temperature ferromagnetism in N-doped TiO2x rutile: Correlation with the local electronic properties*. G. Drera1, M.C. Mozzati2, P. Galinetto 2, Y. Diaz-Fernandez3, L. Malavasi3, F. Bondino, M. Malvestuto 4, and L. Sangaletti1 **Appl. Phys. Lett. 97**, 012506 (2010)
19. *Dopamine Adsorption on Anatase TiO_2(101): A Photoemission and NEXAFS Spectroscopy Study* K. Syres†, A. Thomas*†, F. Bondino‡, M. Malvestuto§, and M. Gratzel, **Langmuir** 2010, 26(18), 14548–14555
20. *Indium growth on reconstructed Si(111)√3 × √3 and 4 × 1 in surfaces.* D Vlachos, M Kamaratos, S.D Foulias, F Bondino, E Magnano, M Malvestuto. **Journal of Physical Chemistry C** (2010) vol. 114 (41) pp. 17693-17702
21. *Electronic structure trends in the $Sr_{n+1}Ru_nO_{3n+1}$ family (n=1,2,3)* M. Malvestuto, E. Carleschi, R. Fittipaldi, E. Gorelov, E. Pavarini,6 M. Cuoco, Y. Maeno, F. Parmigiani and A. Vecchione **Phys. Rev. B 83**, 165121 (2011)
22. *Local order and non-linear optical properties in bulk nanostructured niobiosilicate glasses* P. Pernice et al. **Journal of Non-Crystalline Solids, 2011 vol. 357 (3) pp. 1218-1222**
23. *Orbital topology, interlayer spin coupling, and magnetic anisotropy of the $CuFeO_2$ compound.* M. Malvestuto, F. Bondino, E. Magnano, F. Parmigiani, T. Lummen, P. van Loosdrecht **Phys. Rev. B 83**, 134422 (2011)
24. *Electronic structure of $FeSe_{1-x}Te_x$ studied by Fe $L_{2,3}$-edge x-ray absorption spectroscopy* N. L. Saini, Y. Wakisaka, B. Joseph, A. Iadecola, S. Dalela, P. Srivastava, E. Magnano, M. Malvestuto, Y. Mizuguchi, Y. Takano, T. Mizokawa, and K. B. Garg **Phys. Rev. B 83**, 052502 (2011)
25. *"Magneto dynamical studies at Fermi@Elettra. A White paper."* **Editors : F. Parmigiani and M. Malvestuto**
(http://www.elettra.trieste.it/PEOPLE/index.php?n=MarcoMalvestuto.HomePage)

26. *"Gold Nanoparticles Dyads Stabilized with Binuclear Pt(Ii) Dithiol Bridges"* Fratoddi, Ilaria; Venditti, Iole; Battocchio, Chiara; Polzonetti, Giovanni; Bondino, Federica; **Malvestuto, Marco**; Piscopiello, Emanuela; Tapfer, Leander; Russo, Maria Vittoria, ***Journal of Physical Chemistry C*** **115**, 15198–15204 (2011).
27. **Time-resolved soft x-ray absorption setup using multi-bunch operation modes at synchrotrons**. L. Stebel, **M. Malvestuto**, V. Capogrosso, P. Sigalotti, B. Ressel, F. Bondino, E. Magnano, G. Cautero, and F. Parmigiani **Rev. Sci. Instrum. 82**, 123109 (2011); doi: 10.1063/1.3669787
28. *Resonant X-ray emission study of Sr_2RuO_4 , $Sr_3Ru_2O_7$ and $Sr_4Ru_3O_{10}$* M. Malvestuto, L. Galli, E. Carleschi, R. Fittipaldi, E. Gorelov, E.Pavarini, M. Cuoco, Y. Maeno, A. Vecchione, and F. Parmigiani in preparation (2010)
29. *Direct probe of the variability of Coulomb correlation in iron pnictide superconductors*. P Vilmercati, C P Cheney, F Bondino, E Magnano, **M Malvestuto,** M A McGuire, A S Sefat, B C Sales, D Mandrus, D J Singh, M D Johannes, and N Mannella. **Physical Review B - Condensed Matter and Materials Physics**, 2012 vol. 85 (23).
30. *Self assembling monolayers of dialkynyl bridged Pd(II) thiols obtained by thermally induced multilayer desorption: Thermal and chemical stability investigated by SR-XPS*. C. Battocchio, I. Fratoddi, F Bondino, **M Malvestuto**, M.V. Russo, and G. Polzonetti. **Chemical Physics Letters**, 2012 vol. 527 pp. 57-62.
31. Syres, K. L., Thomas, A. G., Flavell, W. R., Spencer, B. F., Bondino, F., **Malvestuto, M**., et al. (2012). Adsorbate-induced modification of surface electronic structure: Pyrocatechol adsorption on the anatase TiO 2 (101) and rutile TiO 2 (110) surfaces. *Journal of Physical Chemistry C*, *116*(44), 23515.
32. *Effects of charge-orbital order-disorder phenomena on the unoccupied electronic states in the single-layered half-doped Pr0.5Ca 1.5MnO4.* V. Capogrosso, **M Malvestuto**, I P Handayani, P.H.M. Van Loosdrecht, A A Nugroho, E Magnano, and F Parmigiani. Phys Rev B, 2013 vol. 87 (15).
33. *Labeling interacting configurations through an analysis of excitation dynamics in a resonant photoemission experiment: The case of rutile TiO 2.* G. Drera, L Sangaletti, F Bondino, **M Malvestuto**, L Malavasi, Y. Diaz-Fernandez, S Dash, M.C. Mozzati, and P. Galinetto. J Phys: Condens Matter, 2013 vol. 25 (7).
34. Dell'Angela, M., Parmigiani, F., **& Malvestuto, M**. (2015). Time resolved X-ray absorption spectroscopy in condensed matter: A road map to the future. *Journal of Electron ….* http://doi.org/10.1016/j.elspec.2015.06.014
35. Amidani, L., Naldoni, A., **Malvestuto, M**., Marelli, M., Glatzel, P., Dal Santo, V., & Boscherini, F. (2015). Probing Long-Lived Plasmonic-Generated Charges in TiO2/Au by High-Resolution X-ray Absorption Spectroscopy. *Angewandte Chemie*, *127*(18), 5503–5506. http://doi.org/10.1002/ange.201412030
36. Svetina, C., Dell'Angela, M., Mahne, N., **Malvestuto, M**., Parmigiani, F., Raimondi, L., & Zangrando, M. (2014). MagneDyn: the future beamline for ultrafast magnetodynamical studies at FERMI. In C. Morawe, A. M. Khounsary, & S. Goto (Eds.), (Vol. 9207, pp. 92070E–92070E–7). Presented at the SPIE Optical Engineering + Applications, SPIE. http://doi.org/10.1117/12.2062254
37. Capotondi, F., Dell'Angela, **M., Malvestuto**, M., & Parmigiani, F. (2015). Science Frontiers with X-Ray Free Electron Laser Sources. In S. Mobilio, F. Boscherini, & C. Meneghini (Eds.), *Synchrotron Radiation* (pp. 761–785). Springer Berlin Heidelberg. http://doi.org/10.1007/978-3-642-55315-8_30
38. Interband characterization and electronic transport control of nanoscaled GSTsuperlattices. Antonio Caretta, Barbara Casarin, Paola Di Pietro, Andrea Perucchi, Stefano Lupi, Valeria Bragaglia, Raffaella Calarco, Felix Rolf Lutz Lange, Matthias Wuttig, Fulvio Parmigiani, **and Marco Malvestuto**. Phys Rev B, 2016 vol. 94 (4) p. 045319.

http://link.aps.org/doi/10.1103/PhysRevB.94.045319
39. Casarin, Barbara and Caretta, Antonio and Momand, Jamo and Kooi, Bart J and Verheijen, Marcel A and Bragaglia, Valeria and Calarco, Raffaella and Chukalina, Marina and Yu, Xiaoming and Robertson, John and Lange, Felix R L and Wuttig, Matthias and Redaelli, Andrea and Varesi, Enrico and Parmigiani, Fulvio **and Malvestuto, Marco**. (2016). Revisiting the local structure in Ge-Sb-Te based chalcogenide superlattices. *Scientific Reports*, *6*.
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41. Dell'Angela, M., Hieke, F., **Malvestuto, M**., Sturari, L., Bajt, S., Kozhevnikov, I. V., et al. (2016). Extreme ultraviolet resonant inelastic X-ray scattering (RIXS) at a seeded free-electron laser. *Scientific Reports*, *6*.
42. Fabris, A., Allaria, E., Badano, L., & Bencivenga, F. (2016). Fermi Upgrade Plans. *… Conference (IPAC'16)*.
43. **Malvestuto, M**., Caretta, A., Casarin, B., Cilento, F., Dell'Angela, M., Fausti, D., et al. (2016). Ultrafast Ge-Te bond dynamics in a phase-change superlattice. *Physical Review B*, *94*(9), 094310. http://doi.org/10.1103/PhysRevB.94.094310
44. Naldoni, A., Riboni, F., Marelli, M., Bossola, F., Ulisse, G., Di Carlo, A., et al. (2016). Influence of TiO 2 electronic structure and strong metal–support interaction on plasmonic Au photocatalytic oxidations. *Catalysis Science & Technology*, *6*(9), 3220–3229.
45. Svetina, C., Mahne, N., Raimondi, L., Caretta, A., Casarin, B., Dell'Angela, M., et al. (2016). MagneDyn: the beamline for magneto dynamics studies at FERMI. *Journal of Synchrotron Radiation*, *23*(1), 98–105. http://doi.org/10.1107/S1600577515022080
46. Giant magneto-electric coupling in 100 nm thick Co capped by ZnO nanorods. G Vinai, B Ressel, P Torelli, F Loi, B Gobaut, R Ciancio, B Casarin, A Caretta, L Capasso, F Parmigiani, F Cugini, M Solzi, **M Malvestuto**, and R Ciprian. Nanoscale, 2018 vol. 10 (3) pp. 1326-1336.
47. Ultrafast magnetodynamics with free-electron lasers. **M Malvestuto**, R Ciprian, A Caretta, B Casarin, and F Parmigiani. J Phys: Condens Matter, 2018 vol. 30 (5).
48. High-resolution resonant inelastic extreme ultraviolet scattering from orbital and spin excitations in a Heisenberg antiferromagnet. A Caretta, M Dell'Angela, Y-D Chuang, A M Kalashnikova, R V Pisarev, D Bossini, F Hieke, W Wurth, B Casarin, R Ciprian, F Parmigiani, S Wexler, L A Wray, and M Malvestuto. Phys Rev B, 2017 vol. 96 (18).
49. Ultralow-fluence single-shot optical crystalline-to-amorphous phase transition in Ge–Sb–Te nanoparticles B Casarin, et al. Nanoscale 10 (35), 16574-16580 (2018)
50. MOKE setup exploiting a nematic liquid crystal modulator R Ciprian, et al. Review of Scientific Instruments 89 (10), 105107, 2018
51. Direct observation of spin-orbit-induced hybridization via resonant inelastic extreme ultraviolet scattering on an edge-sharing cuprate M Malvestuto, et al. Physical Review B 99 (11), 115120, 2019
52. Coherent soft X-ray pulses from an echo-enabled harmonic generation free-electron laser PR Ribič, et al. Nature Photonics, 2019

Autorizzo il **trattamento dei** miei **dati personali**, ai sensi del D.lgs. 196 del 30 giugno 2003

Trieste, 06/11/19

in fede
Marco Malvestuto