

Erika Giangrisostomi | Curriculum Vitae

Work Experience

POSTDOCTORAL FELLOW

Feb 2015 - present

Helmholtz Zentrum Berlin

Berlin, DE

Institute Methods and Instrumentation for Synchrotron Radiation Research & Uppsala-Berlin joint Laboratory for Next-generation Photoelectron Spectroscopy

- Scientist in charge at the LowDosePES end-station of the PM4 beamline @ BESSY II synchrotron (user support & in-house research)
- Scientist at the SurfaceDynamics end-station of the UE56-1_PGM branch of the FemtoSpeX slicing facility @ BESSY II synchrotron (in-house research)
- *Main experimental tools:* VUV and X-ray photoelectron spectroscopy (including angular-resolved photoelectron spectroscopy, time-resolved photoelectron spectroscopy, X-ray photoelectron diffraction), synchrotrons, ultrafast optical lasers
- *Main topics:* electronic structure and dynamics at functional interfaces

SCIENTIFIC COLLABORATOR

Jan 2014 - Dec 2014

Elettra Sincrotrone Trieste

Trieste, IT

Group Elastic and Inelastic Scattering

- Realization, analysis and interpretation of experiments performed at the EIS-TIMEX beamline of the FERMI free electron laser

Education

PH.D. IN PHYSICS

Jan 2011 - Mar 2015

University of Trieste

Trieste, IT

- Thesis title: "Matter under extreme conditions investigated with free electron laser radiation from FERMI"
- Supervisor: Dr. Claudio Masciovecchio
- *Main experimental tools:* time-resolved pump-probe vis/EUV absorption/reflectivity spectroscopies, free electron lasers, ultrafast optical lasers
- *Main topics:* FEL- and laser-driven metastable phase transitions in condensed matter

MASTER DEGREE IN PHYSICS

Oct 2008 - Oct 2010

University of Camerino

Camerino, IT

- Thesis title: "X-ray absorption spectroscopy and Raman scattering study of GeO₂-SiO₂ glasses under high pressure"
- Supervisor: Prof. Andrea Di Cicco
- Final mark: 110/110 *com laude*
- *Main experimental tools:* X-ray absorption spectroscopy, Raman scattering, X-ray diffraction, scanning electron microscopy, diamond anvil cells, glass synthesization methods
- *Main topics:* polyamorphic transitions under high pressure, modeling of extended X-ray absorption fine structure spectra by multiple-scattering calculations

BACHELOR DEGREE IN PHYSICS*University of Camerino***Oct 2005 - Sep 2008**

Camerino, IT

- Thesis title: "Phase transitions in dense disordered systems"
- Supervisor: Prof. Andrea Di Cicco
- Final mark: 110/110 *com laude*

SCIENTIFIC HIGH SCHOOL DEGREE*High Scientific School of Fermo***Sep 2000 - Jul 2005**

Fermo, IT

- Final mark: 100/100

Additional Training

- *Master in Science Communication* - International School of Advanced Studies, SISSA — Nov 2010 - Apr 2011, Trieste (IT)
- *XFEL 2012* - X-Ray Free Electron Laser school — 04/08.06.2012, Annecy (FR)
- *HERCULES 2012* - Higher European Research Course for Users of Large Experimental Systems — 04.03/04.04.2012, Grenoble (FR)
- *pre-EHPRG 2009* - European High Pressure Group conference school — 02/04.09.2009, Paris (FR)
- *GNXAS 2009* - EXAFS data analysis school — 04/08.08.2009, Camerino (IT)

Additional Activities

Academic years 2007 - 2010: Elected students' representative for the Class of Physics and for the Faculty of Sciences and Technologies at the University of Camerino

Scholarship Awards

Jan 2011 - Dec 2013: Doctoral scholarship from the University of Trieste

Sep 2009 - Feb 2010: Erasmus scholarship for a period of study at the University Pierre et Marie Curie of Paris

Sep 2005 - Ott 2010: "Excellence" scholarship from the University of Camerino

Languages

Italian: mother tongue

English: proficient

French: conversant

German: basic

Attended Conferences & Workshops

- 40th International Conference on Vacuum Ultraviolet and X-ray Physics — 01/05.07.2019, San Francisco (US) [talk]
- Young and Experienced Investigators Exchange Workshop - Beating the Complexity of Matter through the Selectivity of X-rays — 05/08.05.2019, Meissen (DE) [talk]
- 13th International Conference on Synchrotron Radiation Instrumentation — 10/05.06.2018, Taipei (TW) [invited talk]

- Scientific Opportunities with Electron Spectroscopy and RIXS — 16/18.10.2017, Berlin (DE) [invited talk]
- VI Conference on Dynamic Pathways in Multidimensional Landscapes — 12/16.09.2016, Berlin (DE)
- Future of X-ray and Electron Spectroscopies — 15/17.06.2016, Uppsala (SE) [poster]
- XUV spectroscopies and time-resolved dynamics — 14/15.04.2016, Trieste (IT) [talk]
- Dynamic Pathways in Multidimensional Landscapes — 11/16.01.2015, Winklmoosalm (DE) [talk]
- European XFEL Users' Meeting — 29/30.01.2014, Hamburg (DE) [poster]
- COX - coherent X-ray spectroscopy: the dream — 02/03.12.2013, Trieste (IT)
- TRANSIENT 2012: transient and ultrafast processes in X-ray excited matter — 26/27.09.2012, Hamburg (DE)
- SESTRE: Seeded FEL sources and Time-resolved experiments — 14/15.12.2010, Trieste (IT)
- 11th International Conference on the Structure of Non-Crystalline Materials — 27.06/03.07.2010, Paris (FR) [poster]
- Simulation of Synchrotron Radiation Spectroscopies interpreted in the Framework of Multiple Scattering Approach: Theory and Applications — 28.03/02.04.2010, Frascati (IT)
- 47th European High Pressure Group International Conference — 04/11.09.2009, Paris (FR)
- 14th International Conference on X-ray Absorption Fine Structure — 26.07/03.08.2009, Camerino (IT)

Publications

- D. Kühn, E. Giangrisostomi, F. Sorgenfrei, R. M. Jay, A. Föhlisch, "The influence of X-ray pulse length on space-charge effects in optical pump/ X-ray probe photoemission", *New Journal of Physics* **2019**, *21*, 073042
- K. Marks, M. G. Yazdi, W. Piskorz, K. Simonov, R. Stefanuik, D. Sostina, A. Guarnaccio, R. Ovsyannikov, E. Giangrisostomi, Y. Sassa, N. Bachellier, M. Muntwiler, F. O. L. Johansson, A. Lindblad, T. Hansson, A. Kotarba, K. Engvall, M. Göthelid, D. J. Harding, H. Öström, "Investigation of the surface species during temperature dependent dehydrogenation of naphthalene on Ni(111)", *The Journal of Chemical Physics* **2019**, *150*, 244704
- X. Zhang, U. B. Cappel, D. Jia, Q. Zhou, J. Du, T. Sloboda, S. Svanström, F. O. L. Johansson, A. Lindblad, E. Giangrisostomi, R. Ovsyannikov, J. Liu, H. Rensmo, J. M. Gardner, E. M. J. Johansson, "Improved Performance Characteristics of PbS Quantum Dot Solid via Effective Surface Passivation for Highly Efficient Infrared Absorbing Solar Cells", *Chemistry of Materials* **2019**, *31*, 4081–4091
- N. Gallagher, H. Zhang, T. Junghoefer, E. Giangrisostomi, R. Ovsyannikov, M. Pink, S. Rajca, M. B. Casu, A. Rajca, "Thermally and Magnetically Robust Triplet Ground State Diradical", *Journal of the American Chemical Society* **2019**, *141*, 4764–4774
- D. Kühn, M. Müller, F. Sorgenfrei, E. Giangrisostomi, R. M. Jay, R. Ovsyannikov, N. Mårtensson, D. Sánchez Portal, A. Föhlisch, "Directional sub-femtosecond charge transfer dynamics and the dimensionality of 1T-TaS₂", *Scientific Reports* **2019**, *9*, 488
- S. Svanström, T. J. Jacobsson, T. Sloboda, E. Giangrisostomi, R. Ovsyannikov, H. Rensmo, U. B. Cappel, "Effect of halide ratio and Cs⁺ addition on the photochemical stability of lead halide perovskites", *J. Mater. Chem. A* **2018**, *6*, 22134–22144
- V. Lanzilotto, J. L. Silva, T. Zhang, C. Grazioli, M. Stredansky, K. Simonov, E. Giangrisostomi, R. Ovsyannikov, M. De Simone, M. Coreno, C. M. Araujo, B. Brena, C. Puglia, "Spectroscopic

- fingerprints of carbon nitride functional groups locked-up in hydrogen bonding interactions”, *Chemistry: A European Journal* **2018**, *24*, 14198–14206
- S. J. Pookpanratana, K. P. Goetz, E. G. Bittle, H. H., L. You, C. A. Hacker, S. W. Robey, O. D. Jurchescu, R. Ovsyannikov, E. Giangrisostomi, “Electronic Properties and Structure of Single Crystal Perylene”, *Organic Electronics* **2018**, *61*, 157–163
 - E. Principi, E. Giangrisostomi, R. Mincigrucci, M. Beye, G. Kurdi, R. Cucini, A. Gessini, F. Bencivenga, C. Masciovecchio, “Extreme ultraviolet probing of non-equilibrium dynamics in high-energy density germanium”, *Phys. Rev. B* **2018**, *97*, 174107
 - U. B. Cappel, P. Liu, F. O. L. Johansson, B. Philippe, E. Giangrisostomi, R. Ovsyannikov, A. Lindblad, L. Kloo, J. M. Gardner, H. Rensmo, “Electronic Structure Characterization of Cross-Linked Sulfur Polymers”, *ChemPhysChem* **2018**, *19*, 1041–1047
 - M. Glaser, F. Ciccullo, E. Giangrisostomi, R. Ovsyannikov, A. Calzolari, M. B. Casu, “Doping and oxidation effects under ambient conditions in copper surfaces: a “real-life” CuBe surface”, *J. Mater. Chem. C* **2018**, *6*, 2769–2777
 - D. Kühn, F. Sorgenfrei, E. Giangrisostomi, R. Jay, A. Musazay, R. Ovsyannikov, C. Stråhlman, S. Svensson, S. Mårtensson, A. Föhlisch, “Capabilities of Angle Resolved Time of Flight electron spectroscopy with the 60 degrees wide angle acceptance lens”, *Journal of Electron Spectroscopy and Related Phenomena* **2018**, *224*, 45–50
 - E. Giangrisostomi, R. Ovsyannikov, F. Sorgenfrei, T. Zhang, A. Lindblad, Y. Sassa, U. B. Cappel, T. Leitner, R. Mitzner, S. Svensson, N. Mårtensson, A. Föhlisch, “Low Dose Photoelectron Spectroscopy at BESSY II: Electronic structure of matter in its native state”, *Journal of Electron Spectroscopy and Related Phenomena* **2018**, *224*, 68–78
 - T. Zhang, I. E. Brumboiu, V. Lanzilotto, J. Lüder, C. Grazioli, E. Giangrisostomi, R. Ovsyannikov, Y. Sassa, I. Bidermane, M. Stupar, M. De Simone, M. Coreno, B. Ressel, M. Pedio, P. Rudolf, B. Brena, C. Puglia, “Conclusively Addressing the CoPc Electronic Structure: A Joint Gas-Phase and Solid-State Photoemission and Absorption Spectroscopy Study”, *The Journal of Physical Chemistry C* **2017**, *121*, 26372–26378
 - U. B. Cappel, S. Svanstrom, V. Lanzilotto, F. Johansson, K. Aitola, B. Philippe, E. Giangrisostomi, R. Ovsyannikov, T. Leitner, A. Föhlisch, S. Svensson, N. Mårtensson, G. Boschloo, A. Lindblad, H. Rensmo, “Partially reversible photo-induced chemical changes in a mixed-ion perovskite material for solar cells”, *ACS Applied Materials & Interfaces* **2017**, *9*, 34970
 - D. Balle, H. Adler, P. Grüniger, R. Karstens, R. Ovsyannikov, E. Giangrisostomi, T. Chassé, H. Peisert, “Influence of the Fluorination of CoPc on the Interfacial Electronic Structure of the Coordinated Metal Ion”, *Journal of Physical Chemistry C* **2017**, *121*, 18564
 - M. Fondell, S. Eckert, R. M. Jay, C. Weniger, W. Quevedo, J. Niskanen, B. Kennedy, F. Sorgenfrei, D. Schick, E. Giangrisostomi, R. Ovsyannikov, K. Adamczyk, N. Huse, P. Wernet, R. Mitzner, A. Föhlisch, “Time-resolved soft X-ray absorption spectroscopy in transmission mode on liquids at MHz repetition rates”, *Structural Dynamics* **2017**, *4*, 054902
 - F. Bisio, E. Principi, M. Magnozzi, A. Simoncig, E. Giangrisostomi, R. Mincigrucci, L. Pasquali, C. Masciovecchio, F. Boscherini, M. Canepa, “Long-lived non-thermal electron distribution in aluminum excited by femtosecond extreme ultraviolet radiation”, *Phys. Rev. B* **2017**, *96*, 081119(R)
 - E. Principi, E. Giangrisostomi, R. Cucini, F. Bencivenga, A. Battistoni, A. Gessini, R. Mincigrucci, M. Saito, S. Di Fonzo, F. D’Amico, A. Di Cicco, R. Gunnella, A. Filipponi, A. Giglia, S. Nannarone, C. Masciovecchio, “Free electron laser -driven ultrafast rearrangement of the electronic structure in Ti”, *Structural Dynamics* **2016**, *3*, 023604
 - R. Gunnella, G. Zgrablic, E. Giangrisostomi, F. D’Amico, E. Principi, C. Masciovecchio, A. Di

Cicco, F. Parmigiani, "Ultrafast reflectivity dynamics of highly excited Si surfaces below the melting transition", *Phys. Rev. B* **2016**, 94, 155427

- C. Masciovecchio, A. Battistoni, E. Giangrisostomi, F. Bencivenga, E. Principi, R. Mincigrucchi, R. Cucini, A. Gessini, F. D'Amico, R. Borghes, M. Prica, V. Chenda, M. Scarcia, G. Gaio, G. Kurdi, A. Demidovich, M. Danailov, A. Di Cicco, A. Filipponi, R. Gunnella, K. Hatada, N. Mahne, L. Raimondi, C. Svetina, R. Godnig, A. Abrami, M. Zangrando, "EIS: The scattering beamline at FERMI", *Journal of Synchrotron Radiation* **2015**, 22, 553
- F. Bencivenga, E. Principi, E. Giangrisostomi, A. Battistoni, R. Cucini, M. B. Danailov, A. Demidovich, A. Di Cicco, F. D'Amico, S. Di Fonzo, A. Filipponi, A. Gessini, R. Gunnella, K. Hatada, N. Kurdi, N. Mahne, R. Mincigrucchi, L. Raimondi, C. Svetina, M. Zangrando, C. Masciovecchio, "Matter under extreme conditions probed by a seeded free-electron-laser", *AIP Conference Proceedings* **2015**, 1673
- F. Bencivenga, R. Cucini, F. Capotondi, A. Battistoni, R. Mincigrucchi, E. Giangrisostomi, A. Gessini, M. Manfredda, I. P. Nikolov, E. Pedersoli, E. Principi, C. Svetina, P. Parisse, F. Casolari, M. B. Danailov, M. Kiskinova, C. Masciovecchio, "Four-wave mixing experiments with extreme ultra-violet transient gratings", *Nature* **2015**, 520, 205
- F. Bencivenga, R. Cucini, F. Capotondi, A. Battistoni, R. Mincigrucchi, E. Giangrisostomi, A. Gessini, M. Manfredda, I. P. Nikolov, E. Pedersoli, E. Principi, C. Svetina, P. Parisse, F. Casolari, M. B. Danailov, M. Kiskinova, C. Masciovecchio, "FEL-based transient grating spectroscopy", *Proceedings of SPIE - The International Society for Optical Engineering* **2015**, 9512
- R. Cucini, A. Battistoni, F. Bencivenga, A. Gessini, R. Mincigrucchi, E. Giangrisostomi, E. Principi, F. Capotondi, E. Pedersoli, M. Manfredda, M. Kiskinova, C. Masciovecchio, "Toward the extreme ultra violet four-wave mixing experiments: From table top lasers to fourth generation light sources", *Photonics* **2015**, 2, 57
- A. J. Corso, P. Zuppella, D. Bacco, E. Tessarolo, M. Nardello, F. Gerlin, E. Principi, E. Giangrisostomi, F. Bencivenga, A. Gessini, C. Masciovecchio, A. Giglia, S. Nannarone, M. G. Pelizzo, "Multilayer coatings for free electron laser sources", *Proceedings of SPIE - The International Society for Optical Engineering* **2015**, 9588
- A. J. Corso, P. Zuppella, E. Principi, E. Giangrisostomi, F. Bencivenga, A. Gessini, S. Zuccon, C. Masciovecchio, A. Giglia, S. Nannarone, M. G. Pelizzo, "Broadband multilayer optics for ultrafast EUV absorption spectroscopy with free electron laser radiation", *Journal of Optics* **2015**, 17, 025505
- R. Mincigrucchi, E. Giangrisostomi, E. Principi, A. Battistoni, F. Bencivenga, R. Cucini, A. Gessini, M. G. Izzo, C. Masciovecchio, "Liquid carbon reflectivity at 19 nm", *Photonics* **2015**, 2, 50
- R. Mincigrucchi, F. Bencivenga, F. Capotondi, E. Principi, E. Giangrisostomi, A. Battistoni, M. Caputo, F. Casolari, A. Gessini, M. Manfredda, E. Pedersoli, C. Masciovecchio, "Role of the ionization potential in non-equilibrium metals driven to absorption saturation", *Phys. Rev. E* **2015**, 92, 011101(R)
- M. B. Danailov, F. Bencivenga, F. Capotondi, F. Casolari, P. Cinquegrana, A. Demidovich, E. Giangrisostomi, M. P. Kiskinova, G. Kurdi, M. Manfredda, C. Masciovecchio, R. Mincigrucchi, I. P. Nikolov, E. Pedersoli, E. Principi, P. Sigalotti, "Towards jitter-free pump-probe measurements at seeded free electron laser facilities", *Optics Express* **2014**, 22, 12869
- L. Poletto, F. Frassetto, P. Miotti, P. Finetti, E. Giangrisostomi, R. Mincigrucchi, E. Principi, C. Grazioli, A. Kivimäki, A. Di Cicco, F. Iesari, S. Stagira, M. Coreno, "Compact spectrometer for single shot X-ray emission and photon diagnostics", *Proceedings of the 36th International Free Electron Laser Conference FEL 2014* **2014**

- F. Frassetto, P. Miotti, C. Callegari, M. de Simone, P. Finetti, E. Giangrisostomi, C. Grazioli, F. Iesari, A. Kivimäki, R. Mincigrucci, E. Principi, S. Stagira, A. Di Cicco, M. Coreno, L. Poletto, "Spectrometer for single-shot x-ray emission and photon diagnostics", *Proceedings of SPIE - The International Society for Optical Engineering* **2014**, 9210
- F. Casolari, F. Bencivenga, F. Capotondi, E. Giangrisostomi, M. Manfredda, R. Mincigrucci, E. Pedersoli, E. Principi, C. Masciovecchio, M. Kiskinova, "Role of multilayer-like interference effects on the transient optical response of Si₃N₄ films pumped with free-electron laser pulses", *Applied Physics Letters* **2014**, 104, 191104
- A. Di Cicco, K. Hatada, E. Giangrisostomi, R. Gunnella, F. Bencivenga, E. Principi, C. Masciovecchio, A. Filipponi, "Interplay of electron heating and saturable absorption in ultrafast extreme ultraviolet transmission of condensed matter", *Phys. Rev. B* **2014**, 90, 220303(R)
- F. Bencivenga, E. Principi, E. Giangrisostomi, R. Cucini, A. Battistoni, F. D'Amico, A. Di Cicco, S. Di Fonzo, A. Filipponi, A. Gessini, R. Gunnella, M. Marsi, L. Properzi, M. Saito, C. Masciovecchio, "Reflectivity enhancement in titanium by ultrafast XUV irradiation", *Scientific Reports* **2014**, 4, 4952
- F. D'Amico, M. Saito, F. Bencivenga, M. Marsi, A. Gessini, G. Camisasca, E. Principi, R. Cucini, S. Di Fonzo, A. Battistoni, E. Giangrisostomi, C. Masciovecchio, "UV resonant Raman scattering facility at Elettra", *Nuclear Instruments and Methods in Physics Research Section A: Accelerators Spectrometers Detectors and Associated Equipment* **2013**, 703, 33–37
- E. Allaria, A. Battistoni, F. Bencivenga, R. Borghes, C. Callegari, F. Capotondi, D. Castronovo, P. Cinquegrana, D. Cocco, M. Coreno, P. Craievich, R. Cucini, F. D'Amico, M. B. Danailov, A. Demidovich, G. De Ninno, A. Di Cicco, S. Di Fonzo, M. Di Fraia, S. Di Mitri, B. Diviacco, W. M. Fawley, E. Ferrari, A. Filipponi, L. Froehlich, A. Gessini, E. Giangrisostomi, L. Giannessi, D. Giuressi, C. Grazioli, R. Gunnella, R. Ivanov, B. Mahieu, N. Mahne, C. Masciovecchio, I. P. Nikolov, G. Passos, E. Pedersoli, G. Penco, E. Principi, L. Raimondi, R. Sergo, P. Sigalotti, C. Spezzani, C. Svetina, M. Trovó, M. Zangrando, "Tunability experiments at the FERMI@Elettra free-electron laser", *New Journal of Physics* **2012**, 14, 113009
- A. Di Cicco, F. Bencivenga, A. Battistoni, D. Cocco, R. Cucini, F. D'Amico, S. Di Fonzo, A. Filipponi, A. Gessini, E. Giangrisostomi, R. Gunnella, C. Masciovecchio, E. Principi, C. Svetina, "Probing matter under extreme conditions at FERMI@Elettra: The TIMEX beamline", *Proceedings of SPIE - The International Society for Optical Engineering* **2011**, 8077
- E. Giangrisostomi, M. Minicucci, A. Trapananti, A. Di Cicco, "Multiple-scattering X-ray absorption analysis of quartz-like, rutile-like, and amorphous germanium dioxide", *Phys. Rev. B* **2011**, 84, 214202