• NAME: Francesca Cova (Birth 09/05/1992)

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WebOfScience Researcher ID AAG-2583-2019

**Professional Experience**

• *May 2023*- *present* **Assistant Professor** at the Department of Materials Science, University of Milano-Bicocca

• *Dec 2019*- *April 2023* **Postdoc Fellow Researcher** at the Department of Materials Science, University of Milano-Bicocca

**Education**

• *2020* **Ph.D in Materials Science and Nanotechnology**, University of Milano-Bicocca (Italy)

*Thesis*: Rare-Earth doped scintillating silica fibers for ionizing radiation detection

• *2016* **M. S. in Physics** (110/110 *CUM LAUDE*), University of Milano-Bicocca (Italy)

*Thesis*: Study of radiation-induced Defects in Rare-Earth doped silica Preforms and Optical Fibers for High Energy Physics Detectors

• *2014* **B. S. in Physics** (110/110), University of Milano-Bicocca (Italy)

*Thesis*: Study of bolometric detectors with different sensor/absorber characteristics

**Scholarships and Awards**

• *2022* winner of the contest **Falling Walls LAB Italy** hosted by University of Milano - Bicocca

• *2018* 2 months scholarship in the frame of **Exchange Mobility Program (EXTRA-UE)** with University of Milano-Bicocca for a research period at the Lawrence Berkeley National Laboratory (Berkeley, CA, USA)

• *2016* **Best poster and oral presentation Award** for the contribution entitled “Study of Radiation-induced Defects in Rare-Earth doped silica Preforms and Optical Fibers for High Energy Physics Detectors” in the ASCIMAT International Summer School (University of Milano-Bicocca, Milan, Italy)

• *2015* 3 months scholarship in the frame of **Exchange Mobility Program (EXTRA)** with University of Milano-Bicocca for a research period at CERN (Geneve, Switzerland).

**Research Expertise and Skills**

**2020- present** *Study of the role of localized electronic levels in nanostructures, crystals, and optical ceramics for scintillation applications*

My current research topic concerns the investigation of the scintillation response of various classes of materials, going from garnet bulk crystals and optical ceramics doped with luminescent rare-earth ions, to nanocomposites and nanostructures, including quantum dots, perovskites nanocrystals, semiconductor nanoplatelets and metal organic frameworks. I study their emission properties under excitation with ionizing radiation, by means of steady-state X-ray excited luminescence, side-by-side with their absorption and emission features under UV light excitation. Besides, I focus on the presence of defect-related phenomena, deeply investigated by means of thermally stimulated luminescence spectroscopy, to unveil their role in the scintillation process and their influence on the performance of scintillating materials, in order to guide the optimization of scintillating devices. My work can be included in the framework of the search for new, fast, and radiation hard scintillating materials, for the future generation of ionizing radiation detectors.

**2015-2019** *Study and characterization of scintillating silica fibers for high-energy physics applications*

During my PhD, I mainly worked on the characterization of scintillating materials in the form of silica glasses made by sol-gel technique, especially in fiber shape, doped with luminescent rare-earths ions to investigate their optical properties and their application as scintillating materials or Cherenkov radiators in medical dosimetry, remote imaging and especially high-energy physics detectors. I carried out a full-year master thesis about the response of this material after exposure to intense irradiation fields to test the radiation hardness and to highlight the presence of defects induced by irradiation. My PhD research project was intended to examine in depth the properties of sol-gel silica fibers to optimize their performances as scintillators. It also focused on the investigation of afterglow and persistent luminescence phenomena and on the study of the correlation between the distribution of defects inside a material and the time evolution of its emission signal. During my PhD, I gained good experience in spectroscopic instrumental investigation and analysis techniques and acquired skills in:

1. Analysis of intrinsic and extrinsic defects related to thermally stimulated luminescence signals.
2. Radioluminescence spectroscopy
3. Optical and photoluminescence spectroscopy by continuous-wave and time resolved measurements.
4. Absorption spectroscopy and Infrared and Fourier Transform Infrared spectroscopy
5. Scintillation measurements such as light yield and decay time
6. Test with high energy particles at test beam facilities: data taking and analysis
7. Characterization of fibers

**Supervision of students**

* 3 bachelor’s students in Materials Science and Physics
* 8 master’s students in Materials Science and Physics

**Teaching Activities**

* *2023-2024*: assistant professor for the laboratory of Physics course, B. S. in Materials Science, University of Milano - Bicocca
* *2022-2023*: assistant professor for the laboratory of Physics course, B. S. in Physics, University of Milano - Bicocca
* *2022-2023*: tutor for the teaching course of Physics, B. S. in Materials Science, University of Milano - Bicocca
* *2021-2022*: assistant professor for the laboratory of Physics course, B. S. in Physics, University of Milano - Bicocca
* *2021-2022*: assistant professor for the laboratory course “Physics of Materials”, B. S. in Materials Science, University of Milano-Bicocca
* *2020-2021*: tutor for the teaching course of Physics, B. S. in Optics and Optometry, University of Milano - Bicocca
* *2020-2021*: assistant professor for the laboratory of Physics course, B. S. in Physics, University of Milano - Bicocca
* *2018-2019*: assistant professor for the laboratory of Physics course, B. S. in Physics, University of Milano - Bicocca
* *2016-2017*: assistant professor for the laboratory of Physics course, B. S. in Physics, University of Milano-Bicocca

**Organization of scientific meetings**

* *2025* Co-organizer of European Materials Research Society (**EMRS Spring 2025**) Symposium "*Novel materials and devices for photon and ionizing radiation detection*", Strasbourg (France)
* *2024* Member of the local organizing committee of 17th International Conference on Scintillating Materials and their Applications (**SCINT 2024**), Milano, Italy
* *2024-present* Member of **International Advisory Committee** of Conference series "Luminescent Detectors and Transformers of Ionizing Radiation" (**LumDetr**)

**Dissemination**

* 4 press releases for University of Milano - Bicocca
* *2023* Speaker at *Innovation Pub* meetings organized by University of Milano - Bicocca
* *2018* Coordination and tutoring of experimental activities within the National Project “*Progetto Lauree Scientifiche*” aimed to the valorization of Scientific Degrees with respect to high school students

**Editorial activity**

* *2024* **Associated Editor** of IEEE Transactions on Nuclear Science
* *2022* **Associated Editor** of IEEE Transactions on Nuclear Science
* *2021* Invitation to assess a research proposal for the National Science Centre of Poland
* Regular reviewer for the following scientific journals: Optics Express, OSA Continuum, IEEE Transactions on Nuclear Science, Optical Materials and Optical Materials Express, Scientific Reports, Journal of Luminescence, Physica Status Solidi (a), Sensors.

**International experiences**

* + *2024* (1 week) **German Electron Synchrotron DESY** (Hamburg, Germany): steady-state and time-resolved photoluminescence response under excitation with VUV light of quartzes, organic scintillators and nanostructured glassceramics.
  + *2022* (1 week) **German Electron Synchrotron DESY** (Hamburg, Germany): steady-state and time-resolved photoluminescence response under excitation with VUV light of nanomaterials and nanocomposites
  + *2017-2018* (2 months) **Institute of Physics of the Czech Academy of Sciences** (Prague, Czech Republic): training and setup of instruments for advanced scintillation characterization
  + *2018* (2 months) **Lawrence Berkeley National Laboratory**, LBNL (Berkeley, CA, USA): training on advanced spectroscopic techniques
  + *2018* (1 week) **Institute of Chemistry and Condensed Matter of Bordeaux**, ICMCB (Bordeaux, France). Micro-luminescence and micro-Raman measurements of RE-doped fluorinated cladded sol-gel silica fibers.
  + *2018* (1 week) **Saint Gobain Recherche** (Aubervilliers, Paris, France): training on nano-indentation technique for the investigation of mechanical properties of scintillating glasses.
  + *2017* (1 month) **European Organization for Nuclear Research, CERN** (Genève, Switzerland): test of a SpaCal calorimeter prototype and of scintillation properties of RE-doped fibers with electrons beam (H4, SPS beam line). Attenuation length measurements of RE-doped scintillating fibers for High Energy Physics applications.
  + *2016* (3 months) **European Organization for Nuclear Research, CERN** (Genève, Switzerland). Co-tutorship of the master thesis.

**Funded Projects**

* *2021 - 2023* "Self-powered nano-scintillators for energy: miniaturized nuclear batteries" funded by University for Innovation (U4I): **principal investigator** of the project. Budget: 45 k€.

**Scientific production**

**H-Index: 12** (source: SCOPUS)

Total citations: 470 (source: SCOPUS)

Author or co-author of **36** **peer-reviewed international publications** of which 10 articles as first author

Author or co-author of **64** **abstracts in international conferences** of which 18 as oral presentations, 1 as poster presentation, and 45 as co-author

**6 invited seminars**

Co-inventor of **2 patents**

**List of Publications**

1. F. Cova, A. Erroi, M. Zaffalon, A. Cemmi, I. Di Sarcina, J. Perego, A. Monguzzi, A. Comotti, F. Rossi, F. Carulli, and S. Brovelli, "*Scintillation properties CsPbBr3 nanocrystals prepared by ligand-assisted reprecipitation and dual effect of polyacrylate encapsulation toward scalable ultrafast radiation detectors*", [Nano Lett. (2024) 24, 905-913](https://doi.org/10.1021/acs.nanolett.3c04083)
2. F. Cova, J. Hostasa, A. Piancastelli, L. Esposito, A. Paleari, A. Vedda, and R. Lorenzi, "*Layered Y3Al5O12:Pr/Gd3(Ga,Al)5O12:Ce optical ceramics: synthesis and photo-physical properties"* [J. Eur. Ceram. Soc.43 (2023) 7068-7075](https://doi.org/10.1016/j.jeurceramsoc.2023.07.037)
3. M. Zaffalon§, Y. Wu§, F. Cova§, L. Gironi, X. Li, V. Pinchetti, Y. Liu, M. Imran, A. Cemmi, I. Di Sarcina, L. Manna, H. Zeng, and S. Brovelli, "*Zero-dimensional Gua3SbCl6 crystals as intrinsically reabsorption-free scintillators for radiation detection",* [Adv. Funct. Mater. (2023) 2305564](10.1002/adfm.202305564) *(§equal contribution)*
4. F. Carulli§, M. He§, F. Cova§, A. Erroi, L. Li, and S. Brovelli, "*Silica-encapsulated perovskite nanocrystals for effective X-ray activated singlet oxygen production towards enhanced radiotherapy applications",* [ACS Energy Lett. 8, 1795 (2023)](https://doi.org/10.1021/acsenergylett.3c00234) *(§equal contribution)*
5. M. Zaffalon§, F. Cova§, M. Liu, A. Cemmi, I. Di Sarcina, C. Rodà, M. Fasoli, F. Meinardi, L. Li, A. Vedda, and S. Brovelli, "*Extreme γ-ray radiation hardness and high scintillation yield in cesium lead bromide nanocrystals*”, [Nat. Phot. 16 (2022) 860-868](https://doi.org/10.1038/s41566-022-01103-x) *(§equal contribution)*
6. F. Cova, F. Moretti, C. Dujardin, N. Chiodini, and A. Vedda, "*Trapping mechanisms and delayed recombination processes in scintillating Ce-doped sol-gel silica fibers*", [J. Phys. Chem. C 125, 11489 (2021)](https://doi.org/10.1021/acs.jpcc.0c11073)
7. F. Cova, A. Benedetto, N. Chiodini, R. Lorenzi, A. Vedda, and V. Ouspenski, “*Influence of the fiber drawing process on mechanical and vibrational properties of sol-gel silica glass*”, [J. Non-Cryst. Solids 555, 120534 (2021)](https://doi.org/10.1016/j.jnoncrysol.2020.120534)
8. F. Cova, M. T. Lucchini, K. Pauwels, E. Auffray, N. Chiodini, M. Fasoli, and A. Vedda, *"Dual Cherenkov and Scintillation Response to High-Energy Electrons of Rare-Earth Doped Silica Fibers"*, [Phys. Rev. Appl. 11 (2), 024036 (2019)](https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.11.024036)
9. F. Cova, F. Moretti, M. Fasoli, N. Chiodini, K. Pauwels, E. Auffray, M. T. Lucchini, S. Baccaro, A. Cemmi, H. Bartova, and A. Vedda, “*Radiation hardness of Ce-doped sol-gel silica fibers for High Energy Physics applications*”, [Opt. Lett. 43 (4), 903-906 (2018)](https://www.osapublishing.org/ol/abstract.cfm?uri=ol-43-4-903).
10. F. Cova, M. Fasoli, F. Moretti, N. Chiodini, K. Pauwels, E. Auffray, M.T. Lucchini, E. Bourret, I. Veronese, E. D’Ippolito, and A. Vedda, “*Optical properties and radiation hardness of Pr-doped sol-gel silica: Influence of fiber drawing process*”, [J. Lumin. 192, 661-667 (2017)](https://www.sciencedirect.com/science/article/pii/S0022231317307949).
11. F. Parrino, A. Gottuso, L. Viganò, P. Mariani, I. Villa, F. Cova, E. Callone, S. Dirè, L. Palmisano, M. Stredansky, and M. D'Arienzo, "*On the mechanism of singlet oxygen photocatalytic generation by silanized TiO2 nanoparticles*", submitted to Angewandte Chemie
12. A. Erroi, F. Carulli, F. Cova, I. Frank, M. Zaffalon, J. Llusar, S. Mecca, A. Cemmi, I. Di Sarcina, F. Rossi, L. Beverina, F. Meinardi, I. Infante, E. Auffray, and S. Brovelli, "*Ultrafast nanocomposite scintillators based on Cd-enhanced CsPbCl3 nanocrystals in polymer matrix"*, [ACS Energy Lett. 9, 2333-2342 (2024)](https://doi.org/10.1021/acsenergylett.4c00778)
13. M. Orfano, F. Pagano, I. Mattei, F. Cova, V. Secchi, S. Bracco, E. Rogers, L. Barbieri, R. Lorenzi, G. Bizarri, E. Auffray, and A. Monguzzi, "*Fast emitting nanocomposites for high-resolution ToF-PET imaging based on multicomponent scintillators",* [Adv. Mater. Technol. (2024) 2302075](https://doi.org/10.1002/admt.202302075)
14. A. Anand, M. Zaffalon, A. Erroi, F. Cova, F. Carulli, and S. Brovelli, "*Advances in perovskite nanocrystals and nanocomposites for scintillation applications"*, [ACS Energy Lett.](file:///G:\My%20Drive\DATI\CURRICULUM\10.1021\acsenergylett.3c02763) 9, 1261-1287 (2024)
15. S. Senapati, V. Secchi, F. Cova, M. Richman, I. Villa, R. Yehuda, Y. Shenberger, M. Campione, S. Rahimipour, and A. Monguzzi, *"Noninvasive treatment of Alzheimer’s disease with scintillating nanotubes"*, [Adv. Healthc. Mat. 2301527 (2023)](https://doi.org/10.1002/adhm.202301527)
16. A. Erroi, S. Mecca, M. Zaffalon, I. Frank, F. Carulli, A. Cemmi, I. Di Sarcina, D. Debellis, F. Rossi, F. Cova, K. Pauwels, M. Mauri, J. Perego, V. Pinchetti, A. Comotti, F. Meinardi, A. Vedda, E. Auffray, L. Beverina, and S. Brovelli, "*Ultra-fast and radiation-hard lead halide perovskite nanocomposite scintillators",* [ACS Energy Lett. 8, 3883 (2023)](https://doi.org/10.1021/acsenergylett.3c01396)
17. A. Anand, M. Zaffalon, F. Cova, V. Pinchetti, A. Khan, F. Carulli, F. Meinardi, I. Moreels, and S. Brovelli, *"Optical and scintillation properties of highly emissive CdTe nanoplatelets towards radiation detection applications",* [Nano Lett. (2022) 22, 8900-8907](https://doi.org/10.1021/acs.nanolett.2c02975)
18. M. Orfano, J. Perego, F. Cova, C. X. Bezuidenhout, S. Piva, C. Dujardin, B. Sabot, S. Pierre, P. Mai, C. Daniel, S. Bracco, A. Vedda, A. Comotti, and A. Monguzzi, "*Efficient radioactive gas detection by porous metal-organic framework scintillating nanocrystals*", [Nat. Phot. 17 (2023) 672-678](G:\\My Drive\\DATI\\CURRICULUM\\10.1038\\s41566-023-01211-2)
19. V. Secchi, F. Cova, I. Villa, V. Babin, M. Nikl, A. Vedda, M. Campione, and A. Monguzzi, "*Energy partitioning in multicomponent PDT-active nanoscintillators for enhanced localized radiotherapy*", [ACS Appl. Mater. Interfaces 15, 24693 (2023)](https://doi.org/10.1021/acsami.3c00853)
20. Y. Liu, M. Zaffalon, F. Cova, F. Moro, M. Fanciulli, Z. Xia, L. De Trizio, S. Brovelli, and L. Manna, “*Cu+ 🡪 Mn2+ Energy transfer in Cu, Mn- co-alloyed Cs3ZnCl5 colloidal nanocrystals”,* accepted by [Chem. Mater. (2022)](10.1021/acs.chemmater.2c01578)
21. J. Perego, C. Bezuidenhout, I. Villa, F. Cova, R. Crapanzano, I. Frank, F. Pagano, N. Kratochwil, E. Auffray, S. Bracco, A. Vedda, C. Dujardin, P. Sozzani, F. Meinardi, A. Comotti, and A. Monguzzi, "*Highly luminescent hetero-ligand MOF nanocrystals with engineered massive Stokes shift for photonic applications*", [Nat. Commun. (2022) 13:3504](file:///G:\My%20Drive\DATI\CURRICULUM\10.1038\s41467-022-31163-0)
22. F. Carulli, F. Cova, L. Gironi, F. Meinardi, A. Vedda, and S. Brovelli, "*Stokes shift engineered Mn:CdZnS/ZnS nanocrystals as reabsorption-free nano-scintillators in high loading polymer composites*", [Adv. Opt. Mat. (2022) 2200419](10.1002/adom.202200419)
23. I. Villa, B. Santiago Gonzalez, M. Orfano, F. Cova, V. Secchi, C. Colombo, J. Paterek, R. Kucerkova, V. Babin, M. Nikl, and A. Monguzzi, "*The sensitization of scintillation in polymeric composites based on fluorescent nanocomplexes*", [Nanomaterials 11 (2021) 3387](https://doi.org/10.3390/nano11123387)
24. F. Ferrulli, M. Caresana, F. Cova, S. Gundacker, N. Kratochwil, R. Pots, M. Silari, A. Vedda, I. Veronese, and G. Zorloni, "*Analysis and comparison of the Core-to-Valence Luminescence mechanism in a large CLYC crystal under neutron and γ-ray irradiation through optical filtering selection of the scintillation light*", [Sens. Actuators A Phys. 332 (2021) 113151](https://doi.org/10.1016/j.sna.2021.113151)
25. V. Dormenev, A. Amelina, E. Auffray, K. T. Brinkmann, G. Dosovitskiy, F. Cova, A. Fedorov, S. Gundacker, D. Kazlou, M. Korzhik, N. Kratochwil, V. Ladygin, V. Mechinsy, M. Moritz, S. Nargelas, R. W. Novotny, P. Orsich, M. Salomoni, Y. Talochka, G. Tamulaitis, A. Vaitkevicius, A. Vedda, H. G. Zaunick, "*Multipurpose Ce-doped Ba-Gd silica glass scintillator for radiation measurements*", [Nucl. Instrum. Methods Phys. Res. A 1015, (2021) 165762](https://doi.org/10.1016/j.nima.2021.165762)
26. C. Rodà, M. Fasoli, M. Zaffalon, F. Cova, V. Pinchetti, J. Shamsi, A. L. Abdelhady, F. Meinardi, L. Manna, A. Vedda, and S. Brovelli, "*Understanding Thermal and A-thermal Trapping Processes in Lead Halide Perovskites Towards Effective Radiation Detection Schemes*", [Adv. Funct. Mater. 31 (2021) 2104879](10.1002/adfm.202104879)
27. D. Zhu, M. L. Zaffalon, J. Zito, F. Cova, F. Meinardi, L. De Trizio, I. Infante, S. Brovelli, and L. Manna, “*Sb-doped metal halide nanocrystals: a 0D versus 3D comparison*”, [ACS Energy Lett. 6, 2283 (2021)](https://doi.org/10.1021/acsenergylett.1c00789)
28. G. Zorloni, L. Cremonesi, F. Cova, A. Vedda, and M. Caresana, “*Development of a new optical-based quasi-digital particle discrimination technique using inorganic scintillators*”, [Rad. Meas. 135, 106370 (2020)](https://doi.org/10.1016/j.radmeas.2020.106370)
29. M. Buryi, S. Nagorny, M. Fasoli, F. Cova, A. Shekhovtsov, A. Vedda, M. Kosmyna, S. Pirro, and V. V. Laguta, “*Luminescence and charge trapping features of archPbMoO4 lead molybdate crystals grown from archaeological lead*”, [J. Lumin. 224, 117305 (2020)](https://doi.org/10.1016/j.jlumin.2020.117305)
30. T. Guerineau, F. Cova, Y. Petit, A. Abou Khalil, A. Fargues, M. Dussauze, S. Danto, A. Vedda, L. Canioni, and T. Cardinal, “*Silver centers luminescence in phosphate glasses subjected to X-rays or combined x-rays and femtosecond laser exposure*”, [Int. J. Appl. Glass Sci. 11 (1), 15-26 (2020)](https://doi.org/10.1111/ijag.13957)
31. G. Zorloni, F. Cova, M. Caresana, M. Di Benedetto, J. Hostaša, M. Fasoli, I. Villa, I. Veronese, A. Fazzi, and A. Vedda, *“Neutron/γ discrimination by an emission-based phoswich approach”*, [Rad. Meas. 129, 106203 (2019)](https://doi.org/10.1016/j.radmeas.2019.106203)
32. J. Hostaša, F. Cova, A. Piancastelli, M. Fasoli, C. Zanelli, A. Vedda, and V. Biasini, *“Fabrication and luminescence of Ce-doped GGAG transparent ceramics, effect of sintering parameters and additives”*, [Ceram. Int. 45 (17), 23283-23288 (2019)](https://www.sciencedirect.com/science/article/pii/S0272884219322205)
33. M. Buryi, R. Kral, V. Babin, J. Paterek, V. Vanecek, P. Veverka, M. Kohoutkova, V. V. Laguta, M. Fasoli, I. Villa, F. Cova, A. Vedda, and M. Nikl, "*The Trapping and Recombination Centers in Cesium Hafnium Chloride Single Crystals: EPR and TSL study"*, [J. Phys. Chem. C 123 (32), 19402-19411 (2019)](https://pubs.acs.org/doi/abs/10.1021/acs.jpcc.9b05760)
34. J. Šulc, R. Švejkar, M. Fibrich, H. Jelínková, L. Havlák, V. Jary, M. Ledinsky, M. Nikl, J. Bárta, M. Buryi, R. Lorenzi, F. Cova, and A. Vedda, *“Infrared spectroscopic properties of low-phonon lanthanide-doped KLuS2 crystals”*, [J. Lumin. 211, 100-107 (2019)](https://www.sciencedirect.com/science/article/pii/S0022231319300699)
35. M. Beretta, A. Amirkhani, C. Brofferio, S. Brovelli, L. Buonanno, F. Cova, S. Capelli, M. Fasoli, C. Fiorini, L. Gironi, A. Vedda, and I. VIlla, "*The ESQUIRE project: Quantum Dots as scintillation detectors*", [Il Nuovo Cimento 42 C (2019)188](10.1393/ncc/i2019-19188-4)

**Patents**

1. S. Brovelli, L. Beverina, S. Mecca, F. Cova, M. Zaffalon, *Scintillatore nanocomposito ultraveloce con emissione da stati multieccitonici per rivelazione di radiazione ionizzante e relativo metodo di fabbricazione* (Patent application filed)
2. F. Cova, M. Zaffalon, F. Carulli, S. Brovelli, *Batteria nucleare migliorata a conversione indiretta* (Patent application filed)

**Invited seminars**

1. *Strategy for the improvement of radiation hardness in scintillating materials by the study of localized traps*, Materials Research Society (**MRS Fall** 2024), Boston, Massachusetts, USA (2024)
2. *Novel Scintillators for Radiation Detection and Medical Imaging,* Radiographic Imaging and Tomography (**RadIT**) Optica Imaging Congress, Toulouse, France (2024)
3. *Role of Defects in Scintillation,* Summer School of the 17th International Conference on Scintillating Materials and their Applications (**SCINT**), Milano, Italy (2024)
4. *Defect-related phenomena in scintillating materials for high-energy radiation detection,* 12th International Conference on Luminescent Detectors and Transformers of Ionizing Radiation (**LumDetr**), Riga, Latvia (2024)
5. *Defect-related phenomena in scintillating materials for high-energy radiation detection,* Friday Materials Science Colloquia, University of Milano - Bicocca, Italy (2023)
6. *Breaking the wall of century-lived power*, Falling Walls Science Summit 2022 (**FWL2022**), Berlin, Germany (2022)

**Oral Contributions to Conferences (Presenting Author)**

1. **SCINT2024**, 17th International Conference on Scintillating Materials and their Applications (8-12 July 2024, Milano, Italy) - Oral presentation: F. Cova, J. Hostasa, M. Colucci, A. Piancastelli, L. Esposito, V. Biasini, F. Picelli, I. Veronese, A. Paleari, A. Vedda, and R. Lorenzi, "*Structure-property relationship of scintillating garnet optical ceramics towards effective radiation detection schemes*"
2. **SSD20**, 20th International Conference on Solid State Dosimetry (18-22 September 2023, Viareggio, Italy) - Oral presentation: F. Cova, J. Hostasa, A. Piancastelli, L. Esposito, A. Paleari, A. Vedda, and R. Lorenzi, "*X-ray energy and direction-sensitive layered Y3Al5O12:Pr/Gd3(Ga,Al)5O12:Ce scintillating ceramics*"
3. **OP2023**, Optical Probes (10-15 September 2023, Como, Italy) - Oral + poster presentation: F. Cova, I. VIlla, N. Yanai, J. Perego, A. Comotti, A. Vedda, and A. Monguzzi, "*Radioluminescence properties of DPA ligand-based MOF nanocrystals*"
4. **P-RAD2023**, European Workshop on Perovskite Radiation Detector (19-21 July 2023, Bertinoro, Italy) - Oral presentation: F. Cova, "*Understanding the role of intra-gap electronic levels in scintillating lead halide perovskite nanocrystals towards effective radiation detection schemes*".
5. 79th Crystal Clear Collaboration (**CCC**) General Meeting (25 May 2023, Online) - Oral presentation: F. Cova, “*X-ray energy and direction-sensitive layered Y3Al5O12:Pr/Gd3(Ga,Al)5O12:Ce scintillating ceramics*”.
6. **MATSUS23**, Materials for Sustainable Development Conference (6-10 March 2023, Valencia, Spain) - Oral presentation: F. Cova, A. Erroi, F. Carulli, M. Zaffalon, M. Liu, L. Li, A. Cemmi, I. Di Sarcina, A. Vedda, M. Fasoli, and S. Brovelli, "*Role of intra-gap electronic levels in scintillating perovskite nanocrystals and nanocomposites".*
7. **CUPID Collaboration Meeting** (28-30 November 2022, San Gimignano, Italy) - Oral presentation: F. Cova, M. Stabile, M. Girola, and M. Fasoli, "*Spectroscopic characterization of Li2MoO4 and Li2WO4 scintillating crystals*"
8. **FWL2022**, Falling Walls Science Summit 2022 (5-9 November 2022, Berlin, Germany) - Invited oral presentation: F. Cova, "*Breaking the wall of century-lived power*"
9. **HYMA 2022**, 7th International Conference on Multifunctional, Hybrid and Nanomaterials (19-22 October 2022, Genova, Italy) - Oral presentation: F. Cova, F. Carulli, M. He, Q. Zhang, A. Erroi, A. Vedda, L. Li, and S. Brovelli, “*Engineered lead halide perovskites in mesoporous silica nanoparticle for effective singlet oxygen production*”.
10. **SCINT 2022**, 16th International Conference on Scintillating Materials and their Applications (19-23 September 2022, Santa Fe, NM, USA) - Oral presentation: F. Cova, M. L. Zaffalon, F. Carulli, A. Erroi, M. Liu, L. Li, A. Cemmi, I. Di Sarcina, S. Mecca, C. Rodà, M. Fasoli, F. Meinardi, A. Vedda, and S. Brovelli, “*Extreme γ-ray radiation hardness and high scintillation yield in perovskite nanocrystals and polymer composites"*
11. **EuroDIM 2022,** 14th Europhysical Conference on Defects in Insulating Material (3-8 July 2022, Ghent, Belgium) - Oral presentation: F. Cova, A. Monguzzi, I. Villa, M. Orfano, J. Perego, A. Comotti, and A. Vedda, “*Role of intra-gap electronic levels in high-Z metal-organic framework scintillating nanocrystals*”
12. **E-MRS 2022**, Spring Meeting of the European Materials Research Society (30 May - 3 June 2022, Online) - Oral presentation: F. Cova, V. Pinchetti, Y. Wu, L. Gironi, A. Vedda, L. Manna, and S. Brovelli, "*Zero-dimensional Gua3SbCl6 crystals as intrinsically reabsorption-free scintillators for radiation detection*"
13. **SiO2 2021**, 13th International Symposium on SiO2, advanced dielectrics and related devices (14-15 June 2021, Online) - Oral presentation: F. Cova, A. Benedetto, N. Chiodini, R. Lorenzi, A. Vedda, and V. Ouspenski, “*Influence of the fiber drawing process on vibrational, mechanical, and scintillation properties of RE-doped sol-gel silica glass*”.
14. **ICDIM 2020**, 20th International Conference on Defects in Insulating Materials (23-27 November 2020, Online) - Oral presentation: F. Cova, F. Moretti, C. Dujardin, N. Chiodini, and A. Vedda, "*Trapping mechanisms and delayed scintillation processes In Ce-doped sol-gel silica fibers*".
15. **SCINT 2019**, 15th International Conference on Scintillating Materials and their Applications (29 September – 4 October 2019, Sendai, Japan) - Oral presentation: F. Cova, J. Hostaša, V. Biasini, M. Fasoli, F. Moretti, E. Bourret, and A. Vedda, “*Fabrication and Photo-Physical Characterization of Ce-doped Gd3(Ga,Al)5O12 Transparent Ceramics*”.
16. **LumDetr 2018**, 10th International Conference on Luminescent Detectors and Transformers of Ionizing Radiation (9-14 September 2018, Prague, Czech Republic) - Oral presentation: F. Cova, M. T. Lucchini, K. Pauwels, E. Auffray, N. Chiodini, M. Fasoli, F. Moretti, J. A. Mares, V. Jary, M. Nikl, A. Vedda, “*Dual response of RE-doped sol-gel silica fibers to high energy electrons*”.
17. 69th **Crystal Clear Collaboration** (CCC) General Meeting (12 April 2018, Prague, Czech Republic) - Oral presentation: F. Cova, “*Dual response of RE-doped sol-gel silica fibers to high-energy particle beam*”.
18. **SCINT 2017**, 14th International Conference on Scintillating Materials and their Applications (18-22 September 2017, Chamonix, France) - Oral presentation: F. Cova, N. Chiodini, M. Fasoli, K. Pauwels, E. Auffray, M. T. Lucchini, G. Bizarri, E. Bourret, S. Baccaro, A. Cemmi, A. Vedda, “*Radiation hardness of Rare-Earth doped sol-gel silica fibers for High Energy Physics Detectors*”.