

<b>personal information</b>	Roberto Lorenzi born 29/08/1982	
<b>affiliation</b>	University of Milano-Bicocca Dept. of Materials Science Via Cozzi 55, 20125 Milano, Italy +39 02 6448 5221 roberto.lorenzi@unimib.it	ORCID: 0000-0002-6199-0971 ResearcherID: D-1916-2014
<b>current position</b>	<b>Nov 2022 – today</b> Associate Professor of Physics at University of Milano Bicocca, Dept. of Materials Science	
<b>previous position</b>	<b>Nov 2019 – today</b> Tenure-track Assistant Professor of Physics at University of Milano Bicocca, Dept. of Materials Science ( <i>Ricercatore a Tempo Determinato di Tipo B</i> ) <b>Feb 2019 – Oct 2019</b> Assistant Professor of Physics at University of Milano Bicocca, Dept. of Materials Science ( <i>Ricercatore a Tempo Determinato di Tipo A</i> ) <b>Jan 2017 – Jan 2019</b> Research Fellow at University of Milano Bicocca, Dept. of Materials Science ( <i>Post Gelmini – Tipo B</i> ) Project title: “Optical properties and charge transport mechanisms in phase-separated nanostructured glassceramics” <b>Jan 2014 – Dec 2016</b> Research Fellow at University of Milano Bicocca, Dept. of Materials Science ( <i>Post Gelmini – Tipo A</i> ) Project title: “Nanostructured oxide-in-oxide glasses for solar-blind UV-monitoring” <b>Jan 2010 – Dec 2013</b> Research Fellow at University of Milano Bicocca, Dept. of Materials Science ( <i>Pre Gelmini – Tipo B</i> ) Project title: “Optical and charge transport in glassceramic materials”	
<b>education</b>	<b>2010</b> European Doctorate in Physics and Chemistry of Advanced Materials University of Milano-Bicocca and Optoelectronic Research Centre of the University of Southampton PhD thesis title: “Silica-based functional materials: Charge transport in nanostructured SnO <sub>2</sub> :SiO <sub>2</sub> thin films. Second Harmonic Generation in niobium potassium silicate glasses. Tapered silica optical microfibres for gas sensors.” - Tutor: Prof. A. Paleari and Prof. G. Brambilla <b>2006</b> Master of Science in Materials Science University of Milano-Bicocca Title: “Activation and characterization of 2 <sup>nd</sup> order non-linear optical properties in nanostructured glassceramics via laser poling at 1064 and 532 nm” - Tutor: Prof. A. Paleari	
<b>honours and awards</b>	<ul style="list-style-type: none"><li>• Declared eligible for the position of Full Professor of Physics (<i>02/B1 - fisica sperimentale della materia</i>) within the “<i>Abilitazione Scientifica Nazionale</i>” of the Italian Ministry of Research and Education – 2022</li><li>• Declared eligible for the position of Associate Professor of Physics (<i>02/B1 - fisica sperimentale della materia</i>) within the “<i>Abilitazione Scientifica Nazionale</i>” of the Italian Ministry of Research and Education – 2017</li><li>• Young Talent Award in Physics by the University of Milano Bicocca and the “<i>Lincei</i>” Academy – 2017</li><li>• Gold Medal Award With the Congratulation of the Jury at the 45<sup>th</sup> International Exhibition of Inventions in Geneva (CH) – 2017</li><li>• Selected by the Technology Transfer Office of the University of Milano Bicocca for a contribution for travel expenses as university representative at the 45<sup>th</sup> International Exhibition of Inventions of Geneva – 2017</li><li>• Selected by the Research Office of the University of Milano Bicocca for a contribution for travel expenses for the strengthening of young scientists in ERC writing and development – 2015</li><li>• Ph.D. scholarship funded by Pirelli S.p.A.</li></ul>	
<b>main research activities and skills</b>	<b>Nanostructured glassceramic as UV-C to visible converter</b> characterization and interpretation of photoluminescence (PL) and time-resolved PL of nanostructured glassceramic (Ga <sub>2</sub> O <sub>3</sub> nanoparticles in amorphous germanosilicate matrix), study of nucleation and growth mechanism of glass-embedded nanoparticles <b>Origin of color of natural and synthetic gemstones and diamonds</b> characterization and interpretation of PL and optical absorption properties of gemstones, elemental analysis of color centers and impurities by X-ray fluorescence, structural properties by Raman and IR <b>Charge transport and electroluminescence of nanostructured glassceramic thin film</b> fabrication of thin film <i>via</i> spin coating of solgel derived nanostructured glassceramic (SnO <sub>2</sub> nanoparticles in SiO <sub>2</sub> ) and gallium oxide containing germanosilicate glasses prepared <i>via</i> RF-sputtering of glass targets, characterization and interpretation of conductive and capacitive properties with impedance spectroscopy and spectral output of electroluminescence features <b>Activation and characterization of 2<sup>nd</sup> order non-linear optical properties in amorphous materials</b>	

# Roberto Lorenzi

setup of optical benches for laser poling treatments and 2<sup>nd</sup> order activity by Maker Fringe method, sol-gel synthesis of nanostructured glassceramic

## **Mechanisms of Vacuum Ultraviolet (VUV) optical absorption and relaxation in amorphous silica**

optical absorption and photoluminescence measurements with synchrotron light, interpretation of the role of the disorder in the absorption mechanism of pure and fluorine-modified silica, analysis of Urbach tail

## **Tapered optical fibres**

fabrication of tapered optical fibres by the pull-down method, fabrication of demonstrative sensor device, analysis of spectral output of optical fibres, test and modeling of sensor response (software Mathematica)

## **Other research activities and skills**

Raman characterization of materials of interests for batteries and fuel cells, setup of optical benches for characterization of 3<sup>rd</sup> order non-linear optical properties of phosphate glasses containing Au nanoparticles, X-ray diffraction analysis, refractometric measurement, optical properties of transition metals, rare-earths and oxides, advanced optical absorption and reflection measurements, knowledge of LabView and Mathematica software, managing and writing of research projects

### supervision of students

#### **Current**

2 Graduating students in Materials Science

#### **Other**

1 Ph.D. in Physics, 1 Ph.D. student in Materials Science, >15 Graduating students in Materials Science, 1 Graduating student in Optics & Optometry and >10 students supervised and trained for Goldsmith & Gemmology Degree

### teaching activities

**Lecturer or co-lecturer** of the following courses at the University of Milano-Bicocca:

**2024-2025:** "Physics of vision" – Optics and Optometry Master Degree (in English)

**2014 – 2025:** "Physics laboratory I" – Materials Science Degree

**2019 – 2024:** "Geometrical optics laboratory" – Optics and Optometry Degree

**2020 – 2021:** "Physical Characterization of Materials With Lab" – Materials Science Degree

**2010 – 2018:** "Physics of dielectric materials" – Joined Physics and Materials Science Degree

**2013:** "Physics I" – Biology Degree, tutoring of dyscalculic and dyslexic student

**2007-2012:** "Physics of crystals and gemology laboratory" – Gemmology Degree

**2009-2010:** "Inorganic Chemistry Laboratory" - Materials Science Degree

**2008:** "Physics I" – Materials Science Degree

**2007:** "Chemistry: stoichiometry" – Materials Science Degree

### organization of scientific meetings

#### **Since 2024**

Member of the International Advisory Committee of "EURODIM/ICDIM European and international Conferences on Defects in Insulating Materials" conference series (2024 Astana – KZ)

#### **2024**

Member of the Local Organizing Committee of "SCINT: 17th International Conference on Scintillating Materials and their Applications" Milano (Italy)

#### **2010**

Member of the Local Organizing Committee of "SiO2 2010: 8th Symposium SiO2, Advanced Dielectrics & Related Devices" Varenna (Italy)

### dissemination

Some of the scientific results **have been cited by national newspapers and popular science magazines**, including *Corriere della Sera* and *Le Scienze*.

#### **2023**

Activities for popularising Materials Science and introducing children 3-6 to the scientific method. Activities were organized as 1-hour 'metals and magnetism' workshops for small groups (4-5 children). The activities, developed together with the educators, were carried out on a total of 20 children at the 'Bambini Bicocca' kindergarten, a nursery school affiliated with the University of Milan-Bicocca.

#### **2007 – 2019**

Speaker at University of Milano-Bicocca open days for the Department of Materials Science

#### **2008 – 2014**

Coordination and tutoring of experimental activities on organic light-emitting diodes within the National Project "Progetto Lauree Scientifiche" aimed to the valorization of Scientific Degrees with respect to high-school students (participating students > 200).

### institutional responsibilities

#### **Since 2024**

Chair of Research Committee and Research Quality Assessor for the Department of Materials Science

#### **Since 2023**

Member of the Student-Faculty Joint Teaching Committee of the Department of Materials Science (Optics and Optometry Degree)

#### **2022-2024**

Member of the Research Committee of the Department of Materials Science

#### **2010 – 2018**

Elected-member in the Council of the Department of Materials Science as representative of research fellows

#### **2006 – 2010**

Elected-member in the Council of the Department of Materials Science as representative of Ph.D. student

- commissions of trust** **Reviewer for many journals**, including “Applied optics”, “Journal of non-crystalline solids”, “Journal of Luminescence”, “Journal of Raman Spectroscopy”, “Materials Chemistry and Physics”, “Inorganic Chemistry”, “Radiation Measurements”, “Journal of Materials Chemistry C”, “Scientific Reports”, and “European Physical Journal B”
- Reviewer for research grants:**  
**Since 2023**  
Member of Programme Advisory Committee of the MAX IV synchrotron in Lund (Sweden) for the FinEstBeAMS photoluminescence end station  
**2023**  
Member of the physics expert panel for the Estonian research council  
**2020**  
External reviewer for the Italian Evaluation of Research Quality (VQR 2015-2019)  
**2017**  
External reviewer for the National Science Centre of Poland (Narodowe Centrum Nauki - Funding scheme OPUS 2017)
- External Ph.D. evaluator** for the Doctorate in Physics – Politecnico di Milano (Italy)
- national and international experiences** **2010, 2022, 2023 – 3 Weeks**  
Optical absorption and photoluminescence measurements at the European Synchrotron facility of DESY in Hamburg (D)  
**2023 – 1 Week**  
X-ray photoelectron measurements at the ELETTRA synchrotron facility in Trieste (IT)  
**2016-2018 – 2 months**  
Radio- and time-resolved photoluminescence on glasses at the Czech Academy of Science (Prague – CZ)  
**2015 – 2 weeks**  
Visiting researcher at the glass-making facilities of the Mendeleev University of Russia (Moscow – RUS)  
**2015 – 2 weeks**  
Training and setup of instruments for advanced optical characterization and photoluminescence measurement at the ETH of Zurich (CH)  
**2013 – 2016 (5 measurement sessions)**  
Electron microscopy analysis of nanostructured glassceramic at Istituto Italiano di Tecnologia in Genova (IT)  
**2011 – 3 Days**  
Sample preparation for advanced electron microscopy on thin film cross-sections at the “CNR - Istituto per lo Studio dei Materiali Nanostrutturati” in Bologna (IT)  
**2009 – 6 Months**  
Visiting Ph.D. student at the “Optoelectronic Research Center of Southampton (UK)  
**2009 – 1 Week**  
Setup of an experimental apparatus for thermal poling treatments on glass and glassceramic samples at the “Istituto Superiore Mario Boella” in collaboration with “Politecnico di Torino” (IT)  
**2003 – 6 Months**  
Visiting student at the “Ecole Normale Supérieure” of Lyon (F) within the Erasmus exchange programme
- projects** Participation at several regional, national and international research projects and Principal Investigator of the following research projects funded by companies and funding agencies:
- 2023-2025 (Competitive Research Grant)**  
Role: Principal Investigator  
Duration: 2-years  
Title: “LUMINANCE - LUMINescent gArNet CERamics and nanocrystals: material properties understanding and scintillation”  
Funded by: Italian Ministry of University and Research (call PRIN 2022 - Research projects of national interest)  
Budget: 200'000 €
- 2017 – 2024 (Research agreement)**  
Role: Principal Investigator  
Duration: annually renewed  
Title: “Optical characterization of gems and diamonds”  
Commercial partner: Italian Institute of Gemmology  
Budget: 30'000 €/yr
- 2016 (Research agreement)**  
Role: Principal Investigator  
Duration: 2 months  
Title: “Development of a new spectroscopic method for the quantitative evaluation of oleic acid in water”

Commercial partner: Graftonica srl (spin off company of University of Milano-Bicocca)  
Budget: 10'000 €

## 2013 – 2016 (Competitive Research Grant)

Role: Principal Investigator

Duration: 3-years

Title: “Nanostructured oxide-in-oxide glasses for solar-blind UV-monitoring of work-safety and energy-saving in electric power distribution”

Funded by: CARIPIO Foundation

Budget: 260'000 €

## 2015 (Competitive Research Grant)

Title: “Spectroscopy, electrical conduction and novel applications of new materials based on rare earth doped transparent conductive oxides”

Funding agency/programme: European Research Council/Marie Skłodowska-Curie actions

Evaluation score: 90/100 eligible for funding, but not funded given the budgetary resources available for the call

scientific production  
(last update:  
19<sup>th</sup> July 2024)

**h-index:** 18 (SCOPUS), 18 (ISIWEB), 21 (Google Scholar)

**total citation/without self-citation:** 1077/909 (SCOPUS), 1053/884 (ISIWEB), 1375 (Google Scholar)

**Author or co-author of 83 peer-reviewed international publications** of which:

20 articles as first, corresponding or last author

15 articles in major international journals of physics, chemistry and materials science (Science, Nature Communications, Nano letters, ACS Nano, Adv. Funct. Mat., Adv. Opt. Mat., Communication Physics, Chem. Mat., Langmuir, Nanoscale, Carbon, Phys. Chem. Chem. Phys., Appl. Phys. Lett., J. Mater. Chem. C)

1 Article (*Science* - 2016) featured in the “Highlights” section of *Angewandte Chemie*

2 cover articles (*Adv. Funct. Mat.*, *Adv. Opt. Mat.*)

## 8 Invited seminars and talks:

- *Defect-Mediated Persistent Luminescence in Ga<sub>2</sub>O<sub>3</sub> Containing Glassceramics Probed By Synchrotron Radiation* at “SiO<sub>2</sub> 2023 - 14th Symposium on Advanced Dielectrics and related Devices” Palermo (2023) – Invited keynote
- *Defect-mediated photocatalytic activity of glassceramics containing wide-bandgap nanoparticles* at ICOOPMA-EuroDIM 2022 - 9th International Conference on Optical, Optoelectronic and Photonic Materials and Applications & 14th Europhysical Conference on Defects in Insulating Materials, Ghent (Belgium) (2022) – Invited oral
- *Interband decay and absorption mechanisms in amorphous silica probed by synchrotron light* at PIERS 2019 - 41st PhotonIcs & Electromagnetics Research Symposium, Rome (Italy) – Invited oral
- *Identification of a new defect in diamonds: application of Raman spectrometers beyond Raman scattering* at the “3<sup>rd</sup> Raman Workshop” ETH Zurich (2018) – Invited seminar
- *Charge transport in oxide-in-oxide nanostructured silica-based dielectrics* at “SiO<sub>2</sub> 2018 - 12th Symposium on Advanced Dielectrics and related Devices” Bari (2018) – Invited keynote
- *Luminescence and photonics of silica based nanomaterials* at the Czech Academy of Science (2016) – Invited seminar
- *Application of Raman spectroscopy for the study of glasses and related materials* at the “1<sup>st</sup> Raman Workshop” held at ETH Zurich (2016) – Invited seminar
- *Optical materials based on silica and nanostructured glassceramics* at ETH Zurich (2015) – Invited seminar

**Author or co-author of >50 abstracts in international conferences** of which:

13 as oral presentation

7 as poster presentation

33 as co-author

## Co-inventor of 4 patents:

- Paleari A, Zullino A, Lorenzi R (2017) WO 2019/123383 A1

*Method and apparatus for spectroscopic analysis of diamonds*

- Golubev NV, Ignat'eva ES, Sigaev VN, Lorenzi R, Paleari A (2016) Russian Patent N. RU2604614

*Люминесцирующий стеклокристаллический материал/Luminescent glassceramic materials*

- Paleari A, Zullino A, Lorenzi R (2014) WO 2015/127990 A1

*Method of spectroscopic analysis of a diamond and apparatus thereof*

- Paleari A, Lorenzi R, Sigaev VN, Golubev NV (2012) Italian patent N. MI2012A001951

*Sistema di rivelazione di radiazione UV, convertitore ottico UV-visibile e metodo di rivelazione di radiazione ultravioletta/UV radiation detector system, UV-visible optical converter and method for detection of ultraviolet radiation.*

## List of Publication

### Work in progress:

1. Tamburini G, Tarricone G, Piva S, Sassella A, Bertagnoli S, **Lorenzi R**, Paleari A  
*Tuning crystallinity of poly(L-lactic acid) microspheres through emulsification temperature changes*  
(2024)

### Publication in peer-reviewed journals (85 items):

1. Secchi V, Armanni A, Barbieri L, Bruno A, Colombo A, Fumagalli S, Kukushkina E, **Lorenzi R**, Marchesi L, Moukham H, Paleari A, Ronchi A, Tomaino G, Tripodi F, Colombo M, Sironi L, Monguzzi A  
*Advanced techniques and nanotechnologies for point-of-care contamination control of pathogens*  
(2024) Submitted
2. Barbieri L, Colombo M, Bruno A, Tripodi F, Armanni A, Colombo A, Fumagalli S, Kukushkina E, **Lorenzi R**, Marchesi L, Monguzzi A, Moukham H, Paleari A, Ronchi A, Secchi V, Sironi L, Tomaino G  
*Advancements in Nanosensors for Healthcare environmental Pathogen Detection: from intensive care units to general wards*  
(2024) Submitted
3. Orfano M, Perego J, Bezuidenhout CX, Villa I, **Lorenzi R**, Sabot B, Pierre S, Bracco S, Piva S, Comotti A, Monguzzi A  
*Reabsorption-free scintillating hetero-ligand MOF crystals activated by ultrafast energy transfer*  
(2024) *Advanced Functional Materials*, 2404480  
doi: 10.1002/adfm.202404480
4. Villa I, Monguzzi A, **Lorenzi R**, Orfano M, Babin V, Hájek F, Kuldová K, Kučerková R, Beitlerová A, Mattei I, Buresova H, Pjatkan R, Čuba V, Procházková LP, and Nikl M  
*On the origin of the light yield enhancement in polymeric composites scintillators loaded with dense nanoparticles*  
(2024) *Nanoletters*, Vol. 24, 27, 8248–8256  
doi: 10.1021/acs.nanolett.4c00681
5. Tawfilas M, Bartolini Torres G, **Lorenzi R**, Mauri M, Simonutti R  
*Transparent and high refractive index titanium dioxide/thermoplastic polyurethane nanocomposites*  
(2024) *ACS Omega*, vol. 9, 27, 29339–29349  
doi: 10.1021/acsomega.4c01053
6. Khalid S, Pellini I, Pianta N, **Lorenzi R**, Leonardi S, Meda L, Rizzo C, Roccaro E, Johansson P, Mustarelli P, Ruffo R  
*Stable lithium-ion batteries based on a hybrid aqueous/organic electrolyte*  
(2024) *Journal of Power Sources*, vol. 612, 234803  
doi: 10.1016/j.jpowsour.2024.234803
7. Carena E, Mezzomo L, Vallana N, Ceribelli N, Di Liberto G, Mostoni S, Ferrara C, **Lorenzi R**, Giordano L, Ruffo R, Mustarelli P  
*PVDF-HFP-based, quasi-solid nanocomposite electrolytes for lithium metal batteries*  
(2024) *Small*, 2311805  
doi: 10.1002/sml.202311805
8. Orfano M, Pagano F, Mattei I, Cova F, Secchi V, Bracco S, Rogers E, Barbieri L, **Lorenzi R**, Bizzarri G, Auffray E, Monguzzi A  
*Fast emitting nanocomposites for high-resolution ToF-PET imaging based on multicomponent scintillators*  
(2024) *Advanced Materials Technologies*, Vol. 9, 2302075  
doi: 10.1002/admt.202302075
9. Vallana N, Carena E, Ceribelli N, Mezzomo L, Di Liberto G, Mauri M, Ferrara C, **Lorenzi R**, Giordano L, Ruffo R, Mustarelli P  
*Host-guest interactions and transport mechanism in poly(vinylidene fluoride)-based quasi solid electrolytes for lithium metal batteries*  
(2024) *ACS Applied Energy Materials*, Vol. 7, 1606–1617  
doi: 10.1021/acsaem.3c03046
10. Muhyuddin M, Berretti E, Mirshokraee SA, Orsilli J, **Lorenzi R**, Capozzoli L, D'Acapito F, Murphy E, Guo S, Atanassov P, Lavacchi A, Santoro C  
*Formation of the active site structures during pyrolysis transformation of Fe-phthalocyanine into Fe-N<sub>x</sub>-C electrocatalysts for the oxygen reduction reaction*  
(2023) *APPLIED CATALYSIS B: ENVIRONMENTAL*, Vol. 343, 123515  
doi: 10.1016/j.apcatb.2023.123515
11. Tamburini G, Bertagnoli S, Tarricone G, Piva S, Sassella A, **Lorenzi R**, Paleari A  
*Early stages of x-ray induced molecular unit modifications in poly(lactic acid)*  
(2023) *POLYMER DEGRADATION AND STABILITY*, Vol. 216, 110485  
doi: 10.1016/j.polymdegradstab.2023.110485
12. Ostroman I, Ferrara C, Stefano M, Gentile A, Vallana N, Cheptikov D, **Lorenzi R**, Ruffo R  
*Highly reversible Ti/Sn oxide nanocomposite electrodes for lithium ion batteries obtained by oxidation of Ti<sub>3</sub>Al<sub>1-x</sub>Sn<sub>x</sub>C<sub>2</sub> phases*  
(2023) *SMALL METHODS* - 2300503  
doi: 10.1002/smt.202300503
13. Cova F, Hostaša J, Piancastelli A, Esposito L, Paleari A, Vedda, **Lorenzi R**  
*Layered Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>:Pr/Gd<sub>3</sub>(Ga,Al)<sub>5</sub>O<sub>12</sub>:Ce optical ceramics: synthesis and photo-physical properties*  
(2023) *JOURNAL OF THE EUROPEAN CERAMIC SOCIETY*, Vol. 43, 7068-7075  
doi: 10.1016/j.jeurceramsoc.2023.07.037
14. Khalid S, Pianta N, Bonizzoni S, Ferrara C, **Lorenzi R**, Paleari A, Johansson P, Mustarelli P, Ruffo R  
*Structure-property correlations in aqueous binary Na<sup>+</sup>/K<sup>+</sup>-CH<sub>3</sub>COO<sup>-</sup> highly concentrated electrolytes*  
(2023) *THE JOURNAL OF PHYSICAL CHEMISTRY C*, Vol. 127, 9823-9832  
doi: 10.1021/acs.jpcc.3c01017

15. Ciulla MG, Fontana F, **Lorenzi R**, Marchini A, Campone L, Sadeghi E, Paleari A, Gelain F  
*Novel self-assembling cyclic peptides with reversible supramolecular nanostructures*  
(2023) MATERIALS CHEMISTRY FRONTIERS, Vol. 7, 3680  
doi: 10.1039/D3QM00198A
16. Testa D, Zuccante G, Muhyuddin M, Landone R, Scommegna A, **Lorenzi R**, Acciarri M, Petri E, Soavi F, Poggini L, Capozzoli L, Lavacchi A, Lamanna N, Franzetti A, Zoia L, Santoro C  
*Giving new life to waste cigarette butts: transformation into platinum group metal-free electrocatalysts for oxygen reduction reaction in acid, neutral and alkaline environment*  
(2023) CATALYSTS, Vol. 13, 635  
doi: 10.3390/catal13030635
17. Remondina J, Golubev NV, Ignat'eva ES, Sigaev VN, Acciarri M, Paleari A, **Lorenzi R**  
*Random networks of disconnected nanoparticles in dielectric layers as a source of electric responsivity*  
(2023) MATERIALS & DESIGN, Vol. 228, 111825  
doi: 10.1016/j.matdes.2023.111825
18. Muhyuddin M, Friedman A, Poli F, Petri E, Honig H, Basile F, Fasolini A, **Lorenzi R**, Berretti E, Bellini M, Lavacchi A, Elbaz L, Santoro C, Soavi F  
*Lignin-derived bimetallic platinum group metal-free oxygen reduction reaction electrocatalysts for acid and alkaline fuel cells*  
(2023) JOURNAL OF POWER SOURCES, Vol. 556, p. 232416  
doi: 10.1016/j.jpowsour.2022.232416
19. Golubev NV, Ignat'eva ES, Lipatiev AS, Ziaiydinova MZ, Lapushkin GI, Sigaev VN, Paleari A, **Lorenzi R**  
*Effects of Al<sub>2</sub>O<sub>3</sub> addition on microstructure and luminescence of transparent germanosilicate glass-ceramics with incorporated spinel Ga-oxide nanocrystals*  
(2023) CERAMICS INTERNATIONAL, Vol. 49, p. 1657-1666,  
doi: 10.1016/j.ceramint.2022.09.128
20. Mirshokraee SA, Mohsin M, **Lorenzi R**, Tseberlidis G, Lo Vecchio C, Baglio V, Berretti E, Lavacchi A, Santoro C  
*Litchi derived platinum group metal-free electrocatalysts for oxygen reduction reaction and hydrogen evolution reaction in alkaline media*  
(2022) SUSMAT, 1 - 15  
doi: 10.1002/sus2.121
21. Mezzomo L, **Lorenzi R**, Mauri M, Simonutti R, D'Arienzo M, Wi TU, Ko S, Lee HW, Poggini L, Caneschi A, Mustarelli P, Ruffo R  
*Unveiling the role of PEO-capped TiO<sub>2</sub> nanofiller in stabilizing the anode interface in lithium metal batteries*  
(2022) NANO LETTERS, Vol. 22, p. 8509-8518  
doi: 10.1021/acs.nanolett.2c02973
22. Muhyuddin M, Testa D, **Lorenzi R**, Vanacore GM, Poli F, Soavi F, Specchia S, Giurlani W, Innocenti M, Rosi L, Santoro C  
*Iron-based Electrocatalysts Derived from Scrap Tires for Oxygen Reduction Reaction: Evolution of Synthesis-Structure-Performance Relationship in Acidic, Neutral and Alkaline Media*  
(2022) ELECTROCHIMICA ACTA, Vol. 433, p. 141254  
doi: 10.1016/j.electacta.2022.141254
23. Crapanzano R, Villa I, Mostoni S, D'Arienzo M, Di Credico B, Fasoli M, **Lorenzi R**, Scotti R, Vedda A  
*Photo- and Radio-luminescence of porphyrin functionalized ZnO/SiO<sub>2</sub> nanoparticles*  
(2022) PHYSICAL CHEMISTRY CHEMICAL PHYSICS, Vol. 24, p. 21198-21209  
doi: 10.1039/D2CP00884J
24. Muhyuddin M, Zocche N, **Lorenzi R**, Ferrara C, Poli F, Soavi F, Santoro C  
*Valorization of the inedible pistachio shells into nanoscale transition metal and nitrogen codoped carbon-based electrocatalysts for hydrogen evolution reaction and oxygen reduction reaction*  
(2022) MATERIALS FOR RENEWABLE AND SUSTAINABLE ENERGY, Vol. 11, p. 131-141  
doi: 10.1007/s40243-022-00212-5
25. **Lorenzi R**, Zullino A, Gagliardi V, Prosperi L, Paleari A, Adamo I  
*Atomic and microstructural origin of banded colours in purple-blue variety of agate from Yozgat Province, Turkey*  
(2022) PHYSICS AND CHEMISTRY OF MINERALS, Vol. 49, Article number 33  
doi: 10.1007/s00269-022-01208-3
26. Malik B, Majumder S, **Lorenzi R**, Perelshtein I, Eijgenberg M, Paleari A, Nessim G  
*Promising Electrocatalytic Water and Methanol Oxidation Reaction Activity by Nickel Doped Hematite-Surface Oxidized Carbon Nanotubes Composite Structures*  
(2022) CHEMPLUSCHEM, Vol. 87, p. e2022000  
doi: 10.1002/cplu.202200036
27. Gatta DG, Adamo I, Zullino A, Gagliardi V, **Lorenzi R**, Rotiroti N, Faldi L, Prosperi L  
*A multi-methodological investigation of natural and synthetic red beryl gemstones*  
(2022) MINERALS, Vol. 12, p. 439  
doi: 10.3390/min12040439
28. Stigliano P, Ferrara C, Pianta N, Gentile A, Mezzomo L, **Lorenzi R**, Berbenni V, Ruffo R, Appetecchi GB, Mustarelli P  
*Physicochemical properties of Pyr13TFSI-NaTFSI electrolyte for sodium batteries*  
(2022) ELECTROCHIMICA ACTA, Vol. 412, p. 140123 1-10  
doi: 10.1016/j.electacta.2022.140123
29. Muhyuddin M, Filippi J, Zoia L, Bonizzoni S, **Lorenzi R**, Berretti E, Capozzoli L, Bellini M, Ferrara C, Lavacchi A, Santoro C  
*Waste Face surgical mask transformation into crude oil and nanostructured electrocatalysts for fuel cells and electrolyzers*  
(2021) CHEMSUSCHEM, Vol. 4, p. 2830-2838  
doi: 10.1002/cssc.202102351
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#### Patent (4 items):

1. Paleari A, Zullino A, **Lorenzi R**  
*Sistema e metodo di analisi spettroscopica su diamanti/System and method for spectroscopic analysis of diamonds*  
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2. Golubev NV, Ignat'eva ES, Sigaev VN, **Lorenzi R**, Paleari A  
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*Sistema di rivelazione di radiazione UV, convertitore ottico UV-visibile e metodo di rivelazione di radiazione ultravioletta/UV radiation detector system, UV-visible optical converter and method for detection of ultraviolet radiation.*  
(2012) Italian patent N. MI2012A001951

#### Conferences and seminars (53 items)

##### Invited (8 items):

1. *Defect-mediated persistent luminescence in Ga<sub>2</sub>O<sub>3</sub> containing glassceramics probed by synchrotron radiation*  
SiO2 2023 - 14th Symposium on Advanced Dielectrics and related Devices, Palermo (Italy)  
(2023) – **Invited keynote**
2. *Defect-mediated photocatalytic activity of glassceramics containing wide-bandgap nanoparticles*  
ICOOPMA-EuroDIM 2022 - 9th International Conference on Optical, Optoelectronic and Photonic Materials and Applications & 14th Europhysical Conference on Defects in Insulating Materials, Ghent (Belgium)  
(2022) – **Invited oral**
3. *Interband decay and absorption mechanisms in amorphous silica probed by synchrotron light*  
PIERS 2019 - 41st Photonics & Electromagnetics Research Symposium, Rome (Italy)  
(2019) – **Invited oral**
4. *Identification of a new defect in diamonds: application of Raman spectrometers beyond Raman scattering*  
3rd Raman Workshop, ETH Zurich (Switzerland)

(2018) – **Invited seminar**

5. *Charge transport in oxide-in-oxide nanostructured silica-based dielectrics*  
SiO<sub>2</sub> 2018 - 12th Symposium on Advanced Dielectrics and related Devices, Bari (Italy)  
(2018) – **Invited keynote**
6. *Luminescence and photonics of silica based nanomaterials*  
Institute of Physics, Academy of Sciences of The Czech Republic, Prague (Czech Republic)  
(2016) – **Invited seminar**
7. *Application of Raman spectroscopy for the study of glasses and related materials*  
1st Raman Workshop, ETH Zurich (Switzerland)  
(2016) – **Invited seminar**
8. *Optical materials based on silica and nanostructured glassceramics*  
Department of Materials, ETH Zurich (Switzerland)  
(2015) – **Invited seminar**

**Oral (14 items):**

1. **Lorenzi R**, Hostaša J, Piancastelli A, Esposito L, Biasini V, Picelli F, Paleari A, Vedda A, Cova F  
*Innovative approaches to advanced X-ray detection with layered garnet optical ceramics*  
LUMDETR – 12th International Conference On Luminescent Detectors and Transformers of Ionizing Radiation, Riga (Latvia)  
(2024) – **Oral Lorenzi**
2. **Lorenzi R**, D'Arienzo M, Mostoni S, Scotti R, Paleari A  
*Silica glassceramics containing zinc oxides nanoparticles by solgel derived bottom-up approach*  
ICG 2022 - 26th International Congress on Glass, Berlin (Germany)  
(2022) – **Oral Lorenzi**
3. **Lorenzi R**, Golubev NV, Ignat'eva ES, Sigaev VN, Trabattoni S, Sassella A, Paleari A  
*Crystallization processes of spinel-like gallium oxide nanocrystals in germano-silicate bulk glassceramics and thin films*  
Italian Crystal Growth 2021, Turin (Italy)  
(2021) – **Oral Lorenzi**
4. **Lorenzi R**, Golubev NV, Ignat'eva ES, Sigaev VN, Paleari A  
*Photocatalytic activity of germanosilicate glassceramics containing Ga<sub>2</sub>O<sub>3</sub> nanostructures*  
ICG 2019 - 25th International Congress on Glass, Boston (USA)  
(2019) – **Oral Lorenzi**
5. **Lorenzi R**  
*Radioluminescence of rare earth doped yttria-aluminoborate glasses with huntite-like composition*  
CCC 2018 - 70<sup>th</sup> Crystal Clear Conference general meeting, CERN Geneva (Switzerland)  
(2018) – **Oral Lorenzi**
6. **Lorenzi R**, Zullino A, Paleari A  
*A new method and related spectroscopic apparatus for the analysis of coloured diamonds*  
45<sup>th</sup> International Exhibition of Inventions, Geneva (Switzerland)  
**Awarded with Gold Medal and “With the Congratulation of the Jury”**  
(2017) – **Exhibitor Lorenzi**
7. **Lorenzi R**, Azarbod A, De Trizio L, Ignat'eva ES, Sigaev VN, Golubev NV, Paleari A  
 *$\gamma$ -Ga<sub>2</sub>O<sub>3</sub> nanocrystals in germano-silicate glass as multipurpose photonic material*  
FISMAT 2015 – Italian National Conference on Condensed Matter Physics, Palermo (Italy)  
(2015) – **Oral Lorenzi**
8. **Lorenzi R**, Azarbod A, De Trizio L, Ignat'eva ES, Sigaev VN, Paleari A, Golubev NV  
*Energy transfer process between  $\gamma$ -Ga<sub>2</sub>O<sub>3</sub> nanocrystals and Cd<sup>3+</sup> ions in nanostructured germano-silicate glassceramic*  
LUMDETR 2015 - 9<sup>th</sup> International Conference on Luminescent Detectors and Transformers of Ionizing Radiation, Tartu (Estonia)  
(2015) – **Oral Lorenzi**
9. **Lorenzi R**, Azarbod A, De Trizio L, Ignat'eva ES, Sigaev VN, Golubev NV, Paleari A  
*Phase separation and optical properties of nanostructured oxide-in-oxide Ga<sub>2</sub>O<sub>3</sub>-containing germanosilicate glasses*  
E-MRS 2015 – European Materials Research Society Fall Meeting, Warsaw (Poland)  
(2015) – **Oral Lorenzi**
10. **Lorenzi R**, Brovelli S, Meinardi F, Paleari A  
*Band-to-Band Excitation and Decay in SiO<sub>2</sub> – Can We Get Evidences of such a Path?*  
10<sup>th</sup> SiO<sub>2</sub>, Advanced Dielectrics and Related Devices, Cagliari (Italy)  
(2014) – **Oral Lorenzi**
11. **Lorenzi R**, Brovelli S, Paleari A  
*SnO<sub>2</sub>:SnO<sub>x</sub> core-shell QD in glass: charge transport and UV emission in fully inorganic electroluminescent devices*  
7<sup>th</sup> International Conference on Quantum Dots, Santa Fe (USA)  
(2012) – **Oral Lorenzi**
12. **Lorenzi R**, Brovelli S, Meinardi F, Lauria A, Chiodini N, Paleari A  
*Role of sol-gel networking and fluorine doping in the silica Urbach energy*  
8<sup>th</sup> SiO<sub>2</sub>, Advanced Dielectrics and Related Devices, Varenna (Italy)

(2010) - **Oral Lorenzi**

13. Chiodini N, **Lorenzi R**, Lauria A, Spinolo G, Paleari A  
*Ge nanoparticles growth in Ge-doped sol-gel silica by e-beam exposure*  
SPIE Nanophotonic Materials V, San Diego (USA)  
(2008) - **Oral Lorenzi**
14. Paleari A, Brovelli S, **Lorenzi R**, Chiodini N, Spinolo G  
*Second harmonic generation from bulk glassceramics containing laser-poled dielectric nanocrystals*  
SPIE Nonlinear Optics and Applications II, Prague (CZ)  
(2007) - **Oral Lorenzi**

## Poster (8 items):

1. **Lorenzi R**, Golubev NV, Ignat'eva ES, Sigaev VN, Fasoli M, Paleari A, Cova F  
*Trapping mechanisms in nanostructured glassceramics with embedded Ga<sub>2</sub>O<sub>3</sub> nanoparticles*  
SCINT2024 – 17th International Conference on Scintillating Materials and their Applications, Milano (Italy)  
(due July 2024) – Poster Lorenzi
2. **Lorenzi R**, Ziyatdinova MZ, Jarý V, Paleari A, Sigaev VN, Nikl M, Fasoli M, Golubev NV  
*Radioluminescence of yttria-aluminoborate glasses with buntite-like composition*  
LUMDETR 2018 - 10th International Conference on Luminescent Detectors and Transformers of Ionizing Radiation, Prague (Czech Republic)  
(2018) – **Poster Lorenzi**
3. **Lorenzi R**, Golubev NV, Ignat'eva ES, Sigaev VN, Azarbod A, Mereu RA, Paleari A  
*Optical and electrical response of germanosilicate glass-based films nanostructured by alkali-assisted incorporation of gallium oxide*  
SiO2 2016 - 11th Symposium on Advanced Dielectrics and related Devices, Nice (France)  
(2016) – **Poster Lorenzi**
4. **Lorenzi R**, Sigaev VN, Golubev NV, Ignat'eva ES, Azarbod A, Paleari A  
*Blue-emitting Ga<sub>2</sub>O<sub>3</sub> QDs in glass for solar-blind UV-converter*  
8th International Conference on Quantum Dots (QD 2014), Pisa (Italy)  
(2014) - **Poster Lorenzi**
5. **Lorenzi R**, Lauria A, Mochenova N, Chiodini N, Paleari A  
*Study of the absorption edge of SnO<sub>2</sub> nanoparticles embedded in silica films*  
8th SiO<sub>2</sub>, Advanced Dielectrics and Related Devices, Varenna (Italy)  
(2010) - **Poster Lorenzi**
6. Palanza V, Galli A, **Lorenzi R**, Moretti F, Mozzati MC, Paleari A, Spinolo G  
*Luminescence study of transition metal ions in natural magmatic and metamorphic yellow sapphires*  
11th Europhysical Conference on Defects in Insulating Materials (EURODIM 2010), Pécs (Hungary)  
(2010) - **Poster Lorenzi**
7. Palanza V, Chiodini N, Galli A, **Lorenzi R**, Moretti F, Paleari A, Spinolo G  
*Updating of the interpretation of the optical absorption and emission of Verneuil synthetic and natural metamorphic blue sapphire: the role of V<sup>2+</sup>, V<sup>3+</sup> and Cr<sup>2+</sup>*  
11th Europhysical Conference on Defects in Insulating Materials (EURODIM 2010), Pécs (Hungary)  
(2010) - **Poster Lorenzi**
8. Paleari A, Brovelli S, Meinardi F, **Lorenzi R**, Lauria A, Mochenova N, Vodopivec B, Chiodini N  
*Optical activity of Sn-variants of oxygen deficient centers in fluorine-modified silica*  
7th SiO<sub>2</sub>, Advanced Dielectrics and Related Devices, St-Etienne (France)  
(2008) - **Poster Lorenzi**

## Co-authored (41 items):

1. Hostaša J, Picelli F, Hřibálová S, Biasini V, Esposito L, Piancastelli A, Chernomorets D, Cova F, Vedda A, **Lorenzi R**  
*Transparent ceramic composites: materials design and structuring for lasers, scintillators and IR windows*  
MS&T24 – Materials Science and Technology – ACerS-ECerS Joint Symposium: Emerging Leaders in Glass and Ceramics, Pittsburgh (USA)  
(October 2024) – Oral Hostaša
2. Muhyuddin M, Berretti E, Mirshokraee SA, Orsilli J, **Lorenzi R**, Capozzoli L, D'Acapito F, Murphy E, Guo S, Atanassov P, Lavacchi L, Santoro C  
*Evolution of Active Sites in Iron Phthalocyanine Functionalized Carbon during Pyrolysis: Transforming into Active Fe-Nx-C Electrocatalysts for Oxygen Reduction Reaction*  
Understanding Iron & Friends – Collaborative Research Center 1487 Symposium 2024, Darmstadt (Germany)  
(September 2024) – Oral Muhyuddin
3. Villa I, Monguzzi A, **Lorenzi R**, Orfano M, Babin V, Hajek F, Kuldova K, Kučerková R, Beitlerová A, Mattei I, Buresova H, Vaclav C, Prochazkova L, Nikl M  
*On the origin of the light yield enhancement in polymeric composites scintillators loaded with dense nanoparticles*  
LUMDETR – 12th International Conference On Luminescent Detectors and Transformers of Ionizing Radiation, Riga (Latvia)  
(June 2024) – Oral Villa
4. Ronchi A, Cova F, Hostaša J, Picelli F, Esposito L, Biasini V, Paleari A, Vedda A, **Lorenzi R**  
*NIR-emitting scintillation of YAG:Yb optical ceramics as testing platforms for medical bioimaging*  
SCINT2024 – 17th International Conference on Scintillating Materials and their Applications, Milano (Italy)  
(July 2024) – Poster Ronchi
5. Cova F, Hostasa J, Colucci M, Piancastelli A, Esposito L, Biasini V, Picelli F, Veronese I, Paleari A, Vedda A, **Lorenzi R**  
*Structure-property relationship of scintillating garnet optical ceramics towards effective radiation detection schemes*  
SCINT2024 – 17th International Conference on Scintillating Materials and their Applications, Milano (Italy)

(July 2024) – Oral Cova

6. Tamburini G, **Lorenzi R**, Gasser F, Charry ME, Resel R, Paleari A  
*Crystallinity of Eu-doped Poly(L-lactic acid) Microspheres by Emulsification*  
NESY2024 – 12th European NESY Winterschool & Symposium on Neutron and Synchrotron Radiation, Bad Aussee (Austria)  
(Feb 25th- March 1st, 2024) – Poster Tamburini
7. Musa M, Caucia F, Riccardi MP, Barucca S, Croce A, Langone A, Zatti G, **Lorenzi R**, Frezzotti ML  
*L'opale Rosa Australiano: nuovi giacimenti di interesse commerciale/ The Australian Pink Opal: new deposits of commercial interest*  
VI Conferenza Nazionale Diamanti e Gemme di Colore (Italian national conference on diamonds and gemstones) – Torino (Italy)  
(due july, 2024) – Oral Musa
8. Cova F, Hostaša J, Piancastelli A, Esposito L, Paleari S, Vedda A, **Lorenzi R**  
*X-ray energy and direction-sensitive layered Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>:Pr/Gd<sub>3</sub>(Ga,Al)<sub>5</sub>O<sub>12</sub>:Ce scintillating ceramics*  
SSD20 – 20<sup>th</sup> International Conference on Solid State Dosimetry, Viareggio (Italy)  
(2023) – Oral Cova
9. Ciulla MG, Marchini A, **Lorenzi R**, Gelain F  
*The Role of SAPs and hybrid SAP-PNAs in the Fabrication of a Synthetic Erythrocyte*  
Next NanoInnovation Conference, Rome (Italy)  
(2022) – Poster Ciulla
10. Muhyuddin M, Testa D, **Lorenzi R**, Vanacore GM, Poli F, Soavi F, Giurlani W, Innocenti M, Rosi L, Santoro C  
*Development of Fe-N-C Electrocatalysts for Oxygen Reduction Reaction using Waste Tires as a Cost-effective Carbon Source*  
International Society of Electrochemistry Regional Meeting, Prague (Czech Republic)  
(2022) – Oral Muhyuddin
11. Cova F, **Lorenzi R**, Fasoli M, Hostaša J, Biasini V, Esposito L, Vedda A  
*Layered Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>:Pr/Gd<sub>3</sub>(Ga,Al)<sub>5</sub>O<sub>12</sub>:Ce garnet scintillating ceramics: synthesis and photo-physical properties*  
SCINT 2022, 16th International Conference on Scintillating Materials & their Applications, Santa Fe (USA)  
(2022) – Oral Vedda
12. Villa I, Crapanzano R, Mostoni S, d'Arienzo M, Di Credico B, Fasoli M, **Lorenzi R**, Bulin AL, Villa C, Torrente Y, Secchi V, Campione M, Procházková L, Cuba V, Nikl M, Scotti R, Vedda A, Monguzzi A  
*Hybrid nanoscintillators and ionizing radiation: can they get along well? Investigation on hybrid nanoscintillators for medical diagnostic and therapy.*  
9th International Conference on Optical, Optoelectronic and Photonic Materials and Applications & 14th Europhysical Conference on Defects in Insulating Materials, Gent (Belgium)  
(2022) – Oral Villa
13. Muhyuddin M, Filipi J, Zoia L, Bonizzoni S, **Lorenzi R**, Berretti E, Ferrara C, Lavacchi A, Santoro C  
*Upcycling of Disposable Surgical Masks into Platinum Group Metal-free Electrocatalysts for Oxygen Reduction Reaction and Crude Oil*  
ISE 2021, 30th Topical Meeting of the International Society of Electrochemistry, Taipei (Taiwan) – Online  
(2021) – Oral Muhyuddin
14. Marcucci G, Scherillo A, Cazzaniga C, Lemasson Q, **Lorenzi R**, Clemenza M, Riccardi MP, Di Martino D  
*A non-destructive multi-analytical protocol for the characterisation of non-homogeneous samples*  
ART21, 13<sup>th</sup> Conference of non-destructive investigations and microanalysis for the diagnostics and conservation of cultural and environmental heritage, Buenos Aires (Argentina) - Online  
(2021) – Oral Marcucci
15. Cova F, Benedetto A, Chiodini N, **Lorenzi R**, Vedda A, Ouspenski V  
*Influence of the fiber drawing process on vibrational, mechanical, and scintillation properties of RE-doped sol-gel silica glass*  
13<sup>th</sup> SiO<sub>2</sub>, Advanced Dielectrics and Related Devices, Lille (France) - Online  
(2021) – Oral Cova
16. Crapanzano R, Villa I, Mostoni S, D'Arienzo M, Di Credico B, Fasoli M, **Lorenzi R**, Scotti R, Vedda A  
*Radio- and photo-luminescence of ZnO nanoparticles with different morphologies and functionalization*  
LUMDETR 2021 - 15th International Conference on Luminescent Detectors and Transformers of Ionizing Radiation, Bydgoszcz (Poland) - Online  
(2021) – Oral Crapanzano
17. Di Martino D, Rossini R, Colombi S, Perelli Cippo E, Scherillo A, **Lorenzi R**, Merlo C, Bonizzi C, Gorini G  
*Il degrado delle canne d'organo storiche a base stagno: Risultati delle analisi Raman e con neutroni*  
SIF 2020 – 106<sup>o</sup> Congresso Nazionale della Società Italiana di Fisica, Milano (Italy) - Online  
(2020) – Oral Di Martino
18. Marcucci G, **Lorenzi R**, Scherillo A, Cazzaniga C, Fedrigo A, Raspino D, Clemenza M, Di Martino D  
*Studying opacifiers with non-destructive techniques for manufacturing and provenance analysis of glass mosaic tesserae*  
ISA 2020 – 43<sup>rd</sup> International Symposium on Archaeometry, Lisbon (Portugal)  
(2020) – Poster Marcucci
19. Di Martino D, Merlo C, Bonizzi C, Scherillo A, Kasztovszky Zs, Harsányi H, Kovács I, Szókefalvi-Nagy Z, **Lorenzi R**, Perelli Cippo E, Gorini G  
*Looking for new insights in the composition of tin based historical organ pipes by nuclear and raman techniques*  
ISA 2020 – 43<sup>rd</sup> International Symposium on Archaeometry, Lisbon (Portugal)  
(2020) – Poster Di Martino
20. Marcucci G, Clemenza M, Di Martino D, **Lorenzi R**, Gorini G  
*Utilizzo di analisi non distruttive per lo studio degli opacizzanti di tessere musive*  
SIF 2019 – 105<sup>o</sup> Congresso Nazionale della Società Italiana di Fisica, L'Aquila (Italy)

- (2019) – Oral Marcucci
21. Di Martino D, Perelli Cippo E, Kockelmann W, Scherillo A, Minniti T, **Lorenzi R**, Malagodi M, Merlo C, Rovetta T, Fichera GV, Albano M, Kasztovszky Z, Harsányi I, Gorini G  
*A multidisciplinary non-destructive study of historical pipe organ fragments*  
TECHNART 2019 - Non-destructive and microanalytical techniques in art and cultural heritage, Bruges (Belgium)  
(2019) – Poster Di Martino
  22. Remondina J, Acciarri M, **Lorenzi R**, Golubev N, Ignat'eva E, Sigaev V, Paleari A  
*Oxide-in-Oxide Ga<sub>2</sub>O<sub>3</sub>-Containing Glass-Ceramics: from Bulks to Thin-Film Devices*  
GraFOx Summer School on Oxide Semiconductors for Smart Electronic Devices, Menaggio (Italy)  
(2019) – Poster Remondina
  23. Di Martino D, Perelli Cippo E, Kockelmann W, Scherillo A, Minniti T, **Lorenzi R**, Malagodi M, Merlo C, Rovetta T, Fichera GV, Albano M, Kasztovszky Z, Harsányi I, Gorini G  
*A multidisciplinary non-destructive study of historical pipe organ fragments*  
ECNS 2019 – 7<sup>th</sup> European Conference on Neutron Scattering, Saint Petersburg (Russia)  
(2019) – Poster Di Martino
  24. Remondina J, Acciarri M, Golubev NV, Ignat'eva ES, Paleari A, Sigaev VN, **Lorenzi R**  
*Electric Plasticity in Glass-Ceramic Thin Films*  
IWIS 2018 - 11<sup>th</sup> International Workshop on Impedance Spectroscopy, Chemnitz (Germany)  
(2018) – Poster Remondina
  25. Remondina J, Acciarri M, Azarbod A, Golubev NV, Ignat'eva ES, Paleari A, Sassella A, Sigaev VN, Trabattoni S, **Lorenzi R**  
*Investigation of nanostructured glass-ceramic MOS devices*  
ICG 2017 - Italian Crystal Growth, Materials and Methods in Crystal growth, Milano (Italy)  
(2017) – Poster Remondina
  26. Di Martino D, Perelli Cippo E, Kockelmann W, Scherillo A, Minniti T, **Lorenzi R**, Malagodi M, Merlo C, Rovetta T, Fichera GV, Albano M, Kasztovszky Z, Gorini G  
*A multidisciplinary non-destructive study of ancient pipe organ fragments*  
ART17 - 12<sup>th</sup> International Conference on non-destructive investigations and microanalysis for the diagnostics and conservation of cultural and environmental heritage, Torino (Italy)  
(2017) – Oral Di Martino
  27. Remondina J, Acciarri M, Azarbod A, Golubev NV, Ignat'eva ES, Mereu RA, Paleari A, Sigaev VN, **Lorenzi R**  
*AC and DC characterization of  $\gamma$ -Ga<sub>2</sub>O<sub>3</sub>-containing glassceramic thin films*  
IWGO 2017 - 2<sup>nd</sup> International Workshop on Gallium Oxide and Related Materials, Parma (Italy)  
(2017) – Poster Remondina
  28. Azarbod A, Lauria A, Paleari A, **Lorenzi R**  
*Intrinsic and Extrinsic Light Emission Properties of Metal Oxide Nanopowders Synthesized by Non-Aqueous Sol-Gel Route*  
2016 MRS Fall Meeting, Boston (USA)  
(2016) - Poster Azarbod
  29. Golubev NV, Ignat'eva ES, Sigaev VN, **Lorenzi R**, Paleari A  
*Light emission enhancement in nanostructured gallium alkali-germanosilicate glasses*  
Наука будущего - Science of the future 2<sup>nd</sup> edition, Kazan (Russia)  
(2016) - Oral Golubev
  30. Vedda A, Fasoli M, **Lorenzi R**, Villa I, Lauria A, Niederberger M, Dujardin C, Moretti F  
*Hafnium dioxide luminescent nanoparticles: structure and emission control through doping and thermal treatments*  
ICDIM 2016 – 19<sup>th</sup> International Conference on Defects in Insulating Materials, Lyon (France)  
(2016) – Oral Vedda
  31. Adamo I, Zullino A, **Lorenzi R**, Prospero L, Akkas B  
*Characterization of blue banded chalcedony (agate) from Çorum province, Turkey*  
2<sup>nd</sup> European Mineralogical Conference, Rimini (Italy)  
(2016) – Oral Adamo
  32. Di Martino D, Perelli Cippo E, Uda I, Riccardi MP, Paleari A, **Lorenzi R**, Scherillo A, Cucini C, Gorini G  
*Study of ancient metal samples from Valle delle Forme*  
TECHNART 2015 - Non-destructive and microanalytical techniques in art and cultural heritage, Catania (Italy)  
(2015) – Poster Di Martino
  33. Golubev NV, Ignat'eva ES, Sigaev VN, Paleari A, **Lorenzi R**  
*Nanostructured gallium germanosilicate glasses: light emission spectroscopy and applications*  
Наука будущего - Science of the future, Saint Petersburg (Russia)  
(2014) - Poster Golubev
  34. Paleari A, Sigaev VN, Golubev NV, Ignat'eva EV, Lauria A, Azarbod A, **Lorenzi R**  
*Phase changes and ripening of Ga-oxide QDs in solid host*  
8<sup>th</sup> International Conference on Quantum Dots (QD 2014), Pisa (Italy)  
(2014) - Poster Azarbod
  35. Golubev N, Ignat'eva ES, Sigaev VN, Champagnon B, Vouagner D, Nardou E, Paleari A, **Lorenzi R**  
*Light emission from gamma-Ga<sub>2</sub>O<sub>3</sub> nanocrystals embedded in germanosilicate glass: structural and optical features*  
12<sup>th</sup> International Conference on the Structure of Non-Crystalline Materials (NCM12), Riva del Garda (Italy)

- (2013) - Oral Golubev
36. Ignat'eva ES, Golubev NV, Mamadzhanova EK, Sigaev VN, Lauria A, Paleari A, **Lorenzi R**  
*Crystallization processes in  $Ni^{2+}$  doped glasses of  $Me_2O-Ga_2O_3-SiO_2-GeO_2$  system features*  
12<sup>th</sup> International Conference on the Structure of Non-Crystalline Materials (NCM12), Riva del Garda (Italy)  
(2013) - Oral Ignat'eva
37. **Lorenzi R**, Jung Y, Brambilla G  
*In-line evanescent-wave microfluidic absorption sensor based on an embedded optical microfiber coil*  
Optical Sensors, Toronto (Canada)  
(2011) - Oral Brambilla
38. Ding M, Belal M, Chen G, Al-Azawi R, Lee T, Jung Y, Wang P, Zhang X, Song Z, Xu F, **Lorenzi R**, Newson T, Brambilla G  
*Optical microfiber passive devices and sensors*  
SPIE Passive Components and Fiber-Based Devices VIII, Shanghai (China)  
(2011) - Oral Brambilla
39. Paleari A, Brovelli S, **Lorenzi R**, Giussani M, Lauria A, Mochenova N, Chiodini N  
*Electrically tunable dielectric function in glass with tree like percolating pathways of chargeable conductive nanoparticles*  
MRS Fall Meeting - Oxide Nanoelectronics, Boston (USA)  
(2010) - Oral Brovelli
40. Magni E, Mazzone M, Pegolotti G, Lauria A, **Lorenzi R**, Chiodini N, Paleari A  
*Raman study of fluorine effects on silica with embedded  $SnO_2$  nanoparticles*  
7<sup>th</sup> SiO<sub>2</sub>, Advanced Dielectrics and Related Devices, St-Etienne (France)  
(2008) - Poster Lauria
41. Paleari A, Chiodini N, Giussani M, Lauria A, **Lorenzi R**  
*Nanostructured  $SnO_2-SiO_2$  glassceramic thin films as electroluminescent material: An impedance spectroscopy analysis*  
SPIE Nanophotonic Materials IV, San Diego (USA)  
(2007) - Poster Chiodini