

CURRICULUM VITAE ET STUDIORUM: PROF. Gigliola Lusvardi



Personal data: Born in Reggio Emilia (RE), March 27, 1967

Present Position: Associate Professor in General and Inorganic Chemistry at the Department of Chemical and Geological Sciences of the University of Modena and Reggio Emilia since 1 November 2005.

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EDUCATION

- **July 1992** Degree in Chemistry at the University of Modena, with a thesis entitled “Reactivity and structural modifications of synthetic apatites, effect of cationic substituents” under the supervision of Prof. Ledi Menabue and Monica Saladini.
- **October 1996** PhD in Chemical Sciences (Parma, Modena e Ferrara consortium) with a thesis entitled “Reactivity of synthetic and biological hydroxyapatite and its applications: effect of the ions on the behaviour of synthetic and biological hydroxyapatite” under supervisor of Prof. Ledi Menabue

PREVIOUS POSITIONS AND FELLOSHIPS

- **From May 1996 to November 2001** Technical collaborator at the Department of Chemistry of University of Modena and Reggio Emilia
- **From November 2001 to November 2005** Associate Researcher (General and Inorganic Chemistry, CHIM03), at the Department of Chemistry of University of Modena and Reggio Emilia

- **From November 2005 to present**, Associate Professor at Department (General and Inorganic Chemistry, CHIM03), of Chemical and Geological Sciences, University of Modena and Reggio Emilia.
- **From 2017** qualified as Full Professor by ASN.

BRIEF DESCRIPTION OF THE RESEARCH ACTIVITY

The research of Prof. G. Lusvardi is mainly carried out in the field of inorganic materials, starting from their synthesis, functionalization and complete characterization from the qualitative and quantitative point of view.

The research activity can be summarized as:

- synthesis, characterization and functionalization of bioceramics
- treatment of waste containing asbestos
- materials for special applications

Synthesis, characterization and functionalization of bioceramics

The ceramic materials that can be used as biomaterials, are called bioceramics.

The attention of Prof G.Lusvardi was devoted initially on calcium phosphates (apatites) and later on glasses (silicates and phosphosilicates). As regards calcium phosphates (hydroxyapatite, fluoroapatite), it has assessed its stability against essential and toxic metal ions (copper, zinc, cadmium and lead). He also conducted a systematic study on the possible interactions and/or structural substitutions of calcium of the apatitic structure by strontium and magnesium to obtain composites that may have specific clinical applications

In the case of both silicate and phosphosilicate glasses, she focused on the development of synthesis and characterization of systems obtained from bioactive glasses, able to form of an apatitic layer at the interface between glass and living tissue. She focused on Melt-Quenching Glasses (MQGs), bioactive sol-gel (SGGs), and bioactive mesoporous glasses (MBGs) doped by inorganic therapeutic ions (TIIs) such as copper, zinc, gallium and cerium. She also studied their functionalization by metallic nanoparticles (gold, copper), organic

molecules (amino acids, polyphenol derivatives and drugs) and the suitable dimensions (meso and nanostructure) for specific applications (scaffolds, drug delivery systems, coatings). All these hybrid materials has been tested in several simulated biological environments to simulate different physiological conditions and Prof G-Lusvardi demonstrated that these materials have the characteristics to be proposed for the regeneration of both hard and soft tissues; the innovative aspect is to confer new properties (e.g. antibacterial, anti-inflammatory, antioxidant, anticancer) to a bioactive glass and obtain a material that can continue to be synergistically bioactive.

Treatment of waste containing asbestos

The management of waste containing asbestos is an extremely delicate practice for the nature of waste and for the attention given to it by the State and public opinion; over time the interest has shifted towards recovery methods that provide for the possibility of inerting asbestos through a crystallochemical conversion and obtain a material, which is harmless and can be recycled as End of Waste (EoW) in other industrial processes. Prof. G. Lusvardi therefore deals with the recycling of an EoW in ceramic mixtures for porcelain stoneware with variable compositions; such mixtures will be characterized by mineralogical, morphological, compositional and rheological analyses in order to verify if their performances and characteristics are compatible with market requirements. The study is conducted in compliance with the REACH and CLP regulations with a view to "no data no market" and also to ensure safety for users of this product. This is an activity that also falls within the themes of the circular economy: it represents a great opportunity in terms of occupational and economic development and also for the resolution of long-standing and serious problems such as waste management, the availability of raw materials, energy efficiency and huge expenditure on imports

Materials for special applications

Some studies are aimed at the development of silicate-based materials for sensor applications, in particular devoted to the determination of analytes in food matrices. These devices consist of a silicate-based matrix containing gold or copper nanoparticles. The silicate matrix is obtained by a sol-gel synthesis, which is a valid alternative to traditional synthesis processes and which allows to obtain a stable material over time and in the conditions of use. The presence of metallic nanoparticles will give to the device particular electrocatalytic properties aimed at the selective determination of sugars. In this research will be also studied the possibility of conducting sol-gel synthesis using new siloxane derivatives obtained through innovative synthesis approaches, with reduced environmental impact, that

make use of low-cost raw materials such as silica. A positive and potentially innovative aspect of this research is that in addition to achieving the final purpose, the results obtained will find interesting applications also in other sectors.

Among the materials studied by Prof.G.Lusvardi there are some that have specific properties in the field of inorganic pigments, in particular photoluminescent pigments. Thanks to the experience gained on inorganic materials also used as pigments, has developed the synthesis of photoluminescent pigments consisting of strontium aluminates doped with europium and dysprosium: it has also studied the photoluminescent properties and researched the optimal conditions for achieving and improving of the same. In this way a protocol is obtained that is able to highlight the necessary chemical-physical characteristics that allow to obtain long-lasting photoluminescent pigments.

Some inorganic materials that have been employed are those that are used for water cleaning treatments, in particular it has dealt with the development of the synthesis, the characterization of new products based on titanium oxide and silver nanoparticles

In carrying out his research activity he uses experimental techniques such as: X-ray Powder Diffraction combined with the use of the Rietveld method, Scanning Electron Microscopy, Transmission Electron Microscopy, Atomic Force Microscopy, UV/Vis spectroscopy, ICP spectroscopy and Thermal Analysis.

MAJOR COLLABORATIONS

- Dipartimento di Scienze Chimiche e Geologiche, Unimore (Prof A.Gualtieri, G.Malavasi, D.Malferrari, M.C.Menziani, A.Pedone, L.Tassi, A.Zambon)
- Dipartimento di Scienze e Vita, Unimore (Prof M.Rossi, Prof F.Pellati, Dott. S.Raimondi, Prof A. Amaretti)
- Dipartimento di Scienze Mediche e Chirurgiche Materno-Infantili e dell'Adulto, Unimore (Prof. U.Chiarini, Prof.A.Grande, Prof .A.Anesi, Dott. R.Salvatori)
- Dipartimento di Dipartimento di Chimica & Centro Interdipartimentale, "Nanostructured Interfaces and Surfaces" – NIS, Unito (Prof. G.Cerrato)
- Dipartimento di Scienze della Salute, UPO, (Prof Lia Rimondini, Dott. A.Cochis)
- University of Erlangen-Nuremberg-Germany (Prof. Dr.-Ing. habil. Aldo R. Boccaccini)
- Universidad Complutense Madrid, Spain (Prof. A. Salinas, M.Vallet-Regi)

FUNDING AND PROJECTS

Assigned on the basis of the peer external reviewing

- Participant to Progetto finalizzato CNR/MSTA II ,2000 sottoprogetto Biomateriali, National Coordinator Prof. Rolando Barbucci, "Rivestimenti innovativi a base di titanio e di apatite fluorurata per impianti ortopedici" Local Coordinator Prof. Arturo Pizzoferrato
- Participant to Progetto di ricerca industriale, 2002 "Determinazione quantitativa mediante metodo Rietveld delle fasi mineralogiche in una miscela cementizia durante le prime fasi d'idratazione", responsabile del progetto Prof. Ledi Menabue, (15000 €)
- Participant to PRIN01 (MIUR-UniMoRe; Cofin01) "Sintesi di nanoparticelle assistite da microonde (MW)" National Coordinator Prof. G.C. Pellacani. Sub-unità di ricerca di Modena "Nanomateriali come biomateriali". Local Coordinator Prof L. Menabue (44000 €)
- Participant to PRIN03 (MIUR-UniMoRe; Cofin03) "L'interfaccia fra materiali a base di silice e biomolecole e/o modelli cellulari" National Coordinator Prof. C. Morterra. Unità di Ricerca di Modena "Sintesi, caratterizzazione, reattività all'interfaccia di vetri a base di silice, approccio sperimentale e computazionale". Local Coordinator Prof L.Menabue (53600 €)
- Participant to PRIN06 (MIUR-UniMoRe; Cofin06) "Fenomeni d'interfaccia in materiali nanostrutturati biocompatibili a base di silice posti a contatto con sistemi biologici", National Coordinator Prof. C. Morterra. Unità di Ricerca di Modena "Studio sperimentale e computazionale dell'interfaccia fluido biologico-biovetro" Local Coordinator Prof L. Menabue (36350 €)
- Responsabile of Contributo per la Ricerca Scientifica e Tecnologica "Materiali per teranostica, progettazione e sintesi di sistemi contenenti nanoparticelle e molecole di interesse biologico," (Fondazione di Vignola, Co-finanziamento 26000 €)
- Responsabile of FAR2015 Dipartimentale "Sviluppo di materiali a base silicatica per applicazioni sensoristiche" (6296,3 €)
- Participant to Progetto ATOMO, Coordinator Prof T. Manfredini (Intermech-UNIMORE), Local coordinator Prof. L.Menabue (Intermech-UNIMORE), "Hybrid press-forming: innovativa tecnologia per la realizzazione di parti di classe A per l'industria

automotive, in materiale composito a matrice termoindurente (Press PrePreg forming) e amatrice termoplastica (innovativo RTM con resine termoplastiche) (23951 €)

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- Participant to FAR2016 Interdipartimentale, coordinator Prof A.Gualtieri, Fibre potential toxicity Index (FPTI). A quantitative model to evaluate the toxicity and pathogenicity of mineral fibres, including asbestos (70000 €)
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- Participant to PRIN, local coordinator, Prof A.Gualtieri, " FIBRES: a multidisciplinary mineralogical, crystal-chemical and biological project to amend the paradigm of toxicity and cancerogenicity of mineral fibres"(449000 €)
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- Responsible of Progetto Ministero Ambiente Tutela Territorio Mare "MINISTERO AMBIENTE TUTELA TERRITORIO MARE " Tecnologia di trattamento di rifiuti contenenti amianto (RCA) e riciclo per la produzione di piastrelle ceramiche di grande formato, nell'ottica di una economia circolare (125000 €)

Research Contracts:

- 2011 "Valutazione della sicurezza chimica di materie prime e prodotti finiti" Saint Gobain PCC ITALIA S.p.A, 4000 €
- 2012 Valutazione delle sicurezza chimica di materie prime" Saint Gobain PCC ITALIA S.p.A, 1000 €
- 2012 "Materiali nanostrutturati per applicazioni ambientali" Barchemicals s.r.l., 4000 €
- 2013 "Studio e caratterizzazioni di materiali per applicazioni fotoluminescenti" Brightmaterials, s.r.l., 6250 €
- 2014 "Caratterizzazione di materiali fotoluminescenti" Brightmaterials s.r.l., 3500 €
- 2015 "Studio morfologico di pigmenti" Sicer S.p.A, 1500 €
- 2015 "Studio e caratterizzazione di materiali vetrosi destinati al trattamento dell'acqua", Barchemicals s.r.l., 2500 €
- 2016 "Studio e caratterizzazione di materiali per applicazioni speciali", Emilsider Meccanica SPA, 2500 €
- 2016, "Studio morfologico di pigmenti", Bluenco s.r.l., 500 €
- 2017 "Risultato analisi quali-quantitativa di un rifiuto (CER 190305) proveniente da un impianto di inertizzazione RA.RI per identificare e quantificare l'ossido di Nichel (NiO) in forma cristallina. RA.RI. 1000 €
- 2018 "Optimization of the production process of films based on tobacco dust", Philips Morris, 42840 €

TEACHING ACTIVITIES

- a.a. 1992/1993, 1993/1994, 1994/1995, 1995/1996, teacher of “Esercitazioni di Stechiometria” (Diploma Universitario in Ingegneria Meccanica Facoltà di Ingegneria dell'Università di Modena e Reggio Emilia)
- a.a. 1996/1997, 1997/1998, 1998/1999, 1999/2000, 2000/2001, teaching activity as an expert in the subject for the SSD CHIM 03
- a.a. 2001/2002, 2002/2003, 2003/2004 teacher of “Laboratorio di Chimica Inorganica I” (C.L. Chimica)
- a.a. 2001/2002, 2002/2003, 2003/2004 teacher of “Stechiometria” (C.L. Scienze Biologiche)
- a.a. 2004/2005, 2005/2006 teacher of “Laboratorio di Chimica dei Materiali” (C.L. Chimica)
- a.a. 2004/2005, 2005/2006, 2006/2007, 2007/2008 teacher of “Chimica Generale” (C.L. Scienze Geologiche, Scienze Naturali e Scienze per l’Ambiente e Territorio)
- a.a. 2004/2005, 2005/2006, 2006/2007, 2007/2008 teacher of “Cristallochimica” (C.L. di Chimica)
- a.a. 2008/2009 – 2018 teacher of “Chimica Generale” (C.L. Scienze Geologiche) “Valutazione del rischio chimico nel laboratorio e nell’industria” (C.L.Chimica).
- a.a. 2008/2009 – present teacher of “Strutturistica Applicata” (C.L.Chimica).
- a.a. 2019– present teacher of “Chimica Inorganica I” (C.L.Chimica).
- a.a.2001/2002, 2002/2003, 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008: teacher, thesis relator, participant to the enabling commission for Scuola di Specializzazione per l’Istruzione Secondaria (SSIS), A013, A060, A059
- a.a. 2005/2006: teacher, thesis relator, participant to the enabling commission for Corsi Abilitanti Speciali ex Legge 143/04, A013, A060, A059
- a.a 2011/2012: teacher, thesis relator, president of the enabling commission for Tirocini Formativi Attivi (TFA), A013
- a.a 2013/2014: teacher, thesis relator, president of the enabling commission for Percorsi Abilitanti Speciali (PAS) A013, A012, C240
- a.a 2014/2015: a.a 2011/2012: teacher, thesis relator, president of the enabling commission for Tirocini Formativi Attivi (TFA), A013, A012
- a.a. 2011/2012, 2012/2013, 2013/2014, 2014/2015: teacher and member of council of II level Master “Gestione delle sostanze chimiche – REACH e CLP”
- Teacher of SicurMore
- Teacher of Emtask
- Member of “Tutor commission” of CdS of Chemistry course

- Relator of several thesis for students of Chemistry degree

SUPERVISION OF PhD STUDENTS AND POSTDOCTORAL FELLOWS

- from 2017 Supervisor of Ph.D. Student Dr.ssa Maria Ligabue
- from 2021 Supervisor of Ph.D. Student Dr.ssa Francesca Fraulini

ACADEMIC DUTIES

- Member of “Commissione RAMAQ Dipartimento di Scienze Chimiche e Geologiche”
- Member of “Commissione didattica di Ateneo”
- Member of council of PhD course “Models and Methods for Material and Environmental Sciences”

NATIONAL SCIENTIFIC ENABLING (ASN)

- April 2017: enabling of Full professor of General and Inorganic Chemistry, (CHIM03/03-B1)

MEMBERSHIPS AND APPOINTMENTS

- Member of the Doctorate School "Modellistica, Simulazione Computazionale e Caratterizzazione Multiscala per le Scienze dei Materiali e della Vita " dell'Università di Modena e Reggio Emilia., renamed from 2013 "Models and Methods for Material and Environmental Sciences";
- Member of the Division of Inorganic Chemistry of the Italian Chemical Society (SCI)
- Member of the Interuniversity Consortium INSTM

- Member of Spanish and European Network of Excellence for the Prevention and Treatment of Osteoporotic Fractures, “Ageing” (www.agening.net).
- Member of Centro di Ricerca Interdipartimentale sulla Sicurezza e Prevenzione dei Rischi” (CRIS) dell’Università degli studi di Modena e Reggio Emilia.

ORGANISATION OF SCIENTIFIC MEETINGS AND SCHOOLS

- Member of the Editorial Board and Guest Editor of Materials
- Member of Nanomed Platform (Unimore)

ACTIVITIES IN REFERRED SCIENTIFIC JOURNALS

- Reviewer for Mater Chem, J. Non-Cryst. Solids, Acta Biomat., J. of Phys. Chem., J.Am.Ceram. Society, Appl.Surf.Scie. Adv Powder Techno, Mat Sci & Eng C, Colloids and Surfaces B: Biointerfaces, Bioactive Materials, Mat. Chem. Phys., Colloids and Surfaces A: Physicochemical and Engineering Aspects, Surfaces & Coatings Technology, Construction and Building Materials, Frontiers, Scientific Reports
- Reviewer per Talent Research
- Reviewer for PON and FSC
- Reviewer for DFG, Deutsche Forschungsgemeinschaft (German Research Foundation)

OTHER ACTIVITIES

- REACH referent of Emilia Romagna
- Working group for Chemistry test, coordinator Prof.S.Zappoli (in collaboration with Consienze-Cisia)
- Dissemination activities for Scientific Degrees Project

SELECTED INVITED PRESENTATIONS

- “Per una cultura della prevenzione del rischio sismico in Italia”, 12 October 2012, Modena
- NCM12 – 12th International Conference on the Structure of Non Crystalline Materials, 7-12 July 2013, Riva del Garda (TN)
- NIS colloquium "Advances in biomaterials: combining simulations and experiments", 28-29 November 2013; Turin
- III International Symposium on Nanoparticles/Nanomaterials and Applications 22-25 January 2018, Lisbona
- 3rd BioMaH, Biomaterials and Novel Technologies for Healthcare, 13-16 October 2022, Rome

OTHER INFORMATIONS

Prof G.Lusvardi has published **110** products (Iris/Unimore) on international journal, books, patent.

84 publications with IF, **1** patent, **17** chapters in book with ISBN or ISSN, **8** proceedings or extended abstract

Scopus (81 products) h index = 29 citations = 2264

Web of Science (82 products) h index = 28 citations = 2123

Google scholar h index = 31 citations = 2776

LIST OF SCIENTIFIC PUBLICATIONS ON INTERNATIONAL JOURNALS WITH IF

1. Zambon, A., Fraulini, F.; Lusvardi, G. (2022), *Loading with Biomolecules modulates the antioxidant activity of cerium-doped Bioactive Glasses*, **ACS Biomaterials Science & Engineering**, 10.1021/acsbiomaterials.2c00283
2. Brunelli, A; Foscarini A; Base G; Lusvardi G; Bettiola C.; Semenzin E; Marcomini A; Badetti E (2022), *Colloidal stability classification of TiO₂ nanoparticles in artificial and in natural waters by cluster analysis and a global stability index: Influence of standard and natural colloidal particle*, **Science of The Total Environment**, <http://dx.doi.org/10.1016/j.scitotenv.2022.154658>
3. Ligabue, M.L; Saburit, A.; Lusvardi, G.; Malferrari D.; Garcia-Ten, J.; Monfort, E. (2022), *Innovative use of thermally treated cement-asbestos in the production of foaming materials: Effect of composition, foaming agent, temperature and reaction time*, **Construction and building materials**, <https://doi.org/10.1016/j.conbuildmat.2022.127517>

4. Raimondi, S.; Zambon, A.; Ranieri, R.; Fraulini, F.; Amaretti, A.; Rossi, M.; Lusvardi, G. (2022), *Investigation on the antimicrobial properties of cerium-doped bioactive glasses*, **Journal of Biomedical Material Research-part A**, 1, doi.org/10.1002/jbm.a.37289
5. Zambon, A., Malavasi, G.; Pallini A.; Fraulini, F.; Lusvardi, G. (2021), *Cerium containing bioactive glasses-A review*, **ACS Biomaterials Science & Engineering**, 1, doi.org/10.1021/acsbomaterials.1c00414
6. Malavasi, G., Lusvardi, G., (2020), *Composition and morphology effects on catalase mimetic activity of potential bioactive glasses*, **Ceramics International**, 46, <http://dx.doi.org/10.1016/j.ceramint.2020.07.067>
7. Anesi, A.; Malavasi, G.; Chiarini, L.; Salvatori, R.; Lusvardi, G. (2020), *Cell Proliferation to Evaluate Preliminarily the Presence of Enduring Self-Regenerative Antioxidant Activity in Cerium Doped Bioactive Glasses*, **Materials**, 13(10), <http://dx.doi.org/10.3390/ma12193267>
8. Ligabue, M. L., Gualtieri, A. F., Lassinantti Gualtieri, M., Malferrari, D., Lusvardi, G. (2020). *Recycling of thermally treated cement-asbestos for the production of porcelain stoneware slabs*. **Journal of Cleaner Production**, 247. <https://doi.org/10.1016/j.jclepro.2019.119084>
9. Gualtieri, A. F., Lusvardi, G., Pedone, A., Di Giuseppe, D., Zoboli, A., Mucci, A., Lassinantti Gualtieri, M. (2019). *Structure Model and Toxicity of the Product of Biodissolution of Chrysotile Asbestos in the Lungs*. **Chemical Research in Toxicology**, 32(10). <https://doi.org/10.1021/acs.chemrestox.9b00220>
10. Nicolini, V., Malavasi, G., Lusvardi, G., Zambon, A., Benedetti, F., Cerrato, G., Luches, P. (2019). *Mesoporous bioactive glasses doped with cerium: Investigation over enzymatic-like mimetic activities and bioactivity*. **Ceramics International**, 45(16). <https://doi.org/10.1016/j.ceramint.2019.07.080>
11. Malavasi, G., Salvatori, R., Zambon, A., Lusvardi, G., Rigamonti, L., Chiarini, L., & Anesi, A. (2019). *Cytocompatibility of potential bioactive cerium-doped glasses based on 45S5*. **Materials**, 12(4). <https://doi.org/10.3390/ma12040594>
12. Varini, E., Sánchez-Salcedo, S., Malavasi, G., Lusvardi, G., Vallet-Regí, M., & Salinas, A. J. (2019). *Cerium (III) and (IV) containing mesoporous glasses/alginate beads for bone regeneration: Bioactivity, biocompatibility and reactive oxygen species activity*. **Materials Science and Engineering C**, 105. <https://doi.org/10.1016/j.msec.2019.109971>
13. Gualtieri, A. F., Lusvardi, G., Zoboli, A., Di Giuseppe, D., & Lassinantti Gualtieri, M. (2019). *Biodurability and release of metals during the dissolution of chrysotile, crocidolite and fibrous erionite*. **Environmental Research**, 171. <https://doi.org/10.1016/j.envres.2019.01.011>
14. Silvestri, A., Ligabue, M. L., Malavasi, G., & Lusvardi, G. (2019). *Preparation and luminescence properties of Ba₅Si₈O₂₁ long persistent phosphors doped with rare-earth elements*. **Materials**, 12(1). <https://doi.org/10.3390/ma12010183>

15. Ligabue, M. L., Terzi, F., Zanardi, C., Lusvardi, G. (2019). *One-pot sonocatalyzed synthesis of sol-gel graphite electrodes containing gold nanoparticles for application in amperometric sensing*. **Journal of Materials Science**, 54(13). <https://doi.org/10.1007/s10853-019-03580-y>
16. Lusvardi, G., Stabellini, F. S., Salvatori, R. (2019). *P₂O₅-free cerium containing glasses: Bioactivity and cytocompatibility evaluation*. **Materials**, 12(19). <https://doi.org/10.3390/ma12193267>
17. Forte, L., Torricelli, P., Bonvicini, F., Boanini, E., Gentilomi, G. A., Lusvardi, G., Bigi, A. (2018). *Biomimetic fabrication of antibacterial calcium phosphates mediated by polydopamine*. **Journal of Inorganic Biochemistry**, 178. <https://doi.org/10.1016/j.jinorgbio.2017.10.004>
18. Sanchez-Salcedo, S., Malavasi, G., Salinas, A. J., Lusvardi, G., Rigamonti, L., Menabue, L., & Vallet-Regi, M. (2018). *Highly-bioreactive silica-based mesoporous bioactive glasses enriched with gallium(III)*. **Materials**, 11(3). <https://doi.org/10.3390/ma11030367>
19. Nicolini, V., Malavasi, G., Menabue, L., Lusvardi, G., Benedetti, F., Valeri, S., & Luches, P. (2017). *Cerium-doped bioactive 45S5 glasses: spectroscopic, redox, bioactivity and biocatalytic properties*. **Journal of Materials Science**, 52(15). <https://doi.org/10.1007/s10853-017-0867-2>
20. Lusvardi, G., Barani, C., Giubertoni, F., & Paganelli, G. (2017). *Synthesis and characterization of TiO₂ nanoparticles for the reduction of water pollutants*. **Materials**, 10(10). <https://doi.org/10.3390/ma10101208>
21. Nicolini, V., Varini, E., Malavasi, G., Menabue, L., Menziani, M. C., Lusvardi, G., Luches, P. (2016). *The effect of composition on structural, thermal, redox and bioactive properties of Ce-containing glasses*. **Materials and Design**, 97. <https://doi.org/10.1016/j.matdes.2016.02.056>
22. Nicolini, V., Caselli, M., Ferrari, E., Menabue, L., Lusvardi, G., Saladini, M., Malavasi, G. (2016). *SiO₂-CaO-P₂O₅ bioactive glasses: A promising curcuminoids delivery system*. **Materials**, 9(4). <https://doi.org/10.3390/ma9040290>
23. Lusvardi, G., Malavasi, G., Menabue, L., Smargiassi, M. (2016). *Systematic investigation of the parameters that influence the luminescence properties of photoluminescent pigments*. **Journal of Luminescence**, 175. <https://doi.org/10.1016/j.jlumin.2016.02.038>
24. Malavasi G, Nicolini V, Gambuzzi E, Menabue L, Lusvardi G, Pedone A., Benedetti F, Luches P., D'Addato S., Valeri S. (2016). *Catalytic bioactive glasses: catalase mimetic activity*. **Journal of Applied Biomaterials & Functional Materials**, vol. 14, doi:10.5301/jabfm.5000272
25. Nicolini, V., Gambuzzi, E., Malavasi, G., Menabue, L., Menziani, M. C., Lusvardi, G., Valeri, S. (2015). *Evidence of catalase mimetic activity in Ce³⁺/Ce⁴⁺ doped bioactive glasses*. **Journal of Physical Chemistry B**, 119(10). <https://doi.org/10.1021/jp511737b>

26. Chouat, N., Hasnaoui, M. A., Sassi, M., Bengueddach, A., Lusvardi, G., & Cornia, A. (2015). *Crystal structure of a new homochiral one-dimensional zincophosphate containing L-methionine*. **Acta Crystallographica Section E: Crystallographic Communications**, 71(7). <https://doi.org/10.1107/S2056989015011561>
27. Aina, V., Magistris, C., Cerrato, G., Martra, G., Viscardi, G., Lusvardi, G., Menabue, L. (2014). *New formulation of functionalized bioactive glasses to be used as carriers for the development of pH-stimuli responsive biomaterials for bone diseases*. **Langmuir**, 30(16). <https://doi.org/10.1021/la5003989>
28. Aina, V., Malavasi, G., Magistris, C., Cerrato, G., Martra, G., Viscardi, G., Lusvardi, G. (2014). *Conjugation of amino-bioactive glasses with 5-aminofluorescein as probe molecule for the development of pH sensitive stimuli-responsive biomaterials*. **Journal of Materials Science: Materials in Medicine**, 25(10). <https://doi.org/10.1007/s10856-014-5206-4>
29. Aina, V., Cerrato, G., Martra, G., Bergandi, L., Costamagna, C., Ghigo, D., ... Menabue, L. (2013). *Gold-containing bioactive glasses: A solid state synthesis to produce alternative biomaterials for bone implantations*. **Journal of the Royal Society Interface**, 10(82). <https://doi.org/10.1098/rsif.2012.1040>
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