

EUROPEAN CURRICULUM VITAE



PERSONAL INFORMATION

Name **Simona Ortelli**
E-mail **simona.ortelli@istec.cnr.it**
simona.ortelli@pec.it
Nationality Italian

WORK EXPERIENCE

- Dates **From 27, December, 2018**
- Name and address of the employer ISTEC-CNR Institute of Science and Technology for Ceramics (CNR-ISTEC), National Research Council of Italy, Via Granarolo 64, 48018 Faenza RA, Italy
- Type of business or sector Researcher
- Occupation or position held Permanent position
CNR-AMMCNT protocol N. 0036530 – date: 22/05/2018
CNR-ISTEC protocol N. 0073218 – date: 05/11/2018
- Main activities and responsibilities The main activities carried out by me are:
 - Involvement in project and research activities related to H2020 European projects on the topic of nanosafety,
 - Study and research on novel nanomaterials for application in environment nanotechnology field,
 - Laboratory activity management.
- Dates **From 3, July, 2017 to 26, December, 2018**
- Name and address of the employer ISTEC-CNR Institute of Science and Technology for Ceramics (CNR-ISTEC), National Research Council of Italy, Via Granarolo 64, 48018 Faenza RA, Italy
- Type of business or sector Participation to European research project "PROTECT".
- Occupation or position held Fixed-term researcher
CNR-ISTEC protocol N. 0002584 – date: 03/07/2017
CNR-ISTEC protocol N. 0001442 – date: 21/06/2018
- Main activities and responsibilities The main activities carried out by me are:
 - Synthesis and characterization of inorganic nanoparticles with antibacterial properties,
 - Study inherent to application of antibacterial nanoparticles onto textile substrate,
 - Development of Safety by Process Design for the three pre-commercial lines: sonochemical continuous technology spray coating continuous technology and sonochemical batch-mode technology.
- Dates **From 2, April, 2014 to 1, April, 2015**
- Name and address of the employer ISTEC-CNR Institute of Science and Technology for Ceramics (CNR-ISTEC), National Research Council of Italy, Via Granarolo 64, 48018 Faenza RA, Italy
- Type of business or sector Participation in ISTEC research activities for the development of nanostructured surfaces.
ISTEC competition announcement N. 073.14.03.02
- Occupation or position held Research assignee
CNR-ISTEC protocol N.0000803 – date: 02/04/2014
- Main activities and responsibilities The main activities carried out by me were:
 - Synthesis, characterization, functionalization and applications of ceramic nanoparticles,
 - Functionalization of different supports with nanostructured coatings,
 - Bibliographic research at libraries, internet, scientific databases,
 - Reporting and intermediate planning.
- Dates **From 2, April, 2013 to 1, April, 2014**
- Name and address of the employer ISTEC-CNR Institute of Science and Technology for Ceramics (CNR-ISTEC), National Research

- Council of Italy, Via Granarolo 64, 48018 Faenza RA, Italy
- Type of business or sector Participation to European research project "Sanowork".
ISTEC competition announcement N. 073.13.03.01
 - Occupation or position held Research assignee
CNR-ISTEC protocol N.0000510 – date: 19/03/2013
 - Main activities and responsibilities The main activities carried out by me were:
 - Engineering of surfaces,
 - Development of risk remediation strategy based on "safety by molecular design" approach
 - Synthesis, characterization, functionalization and applications of nanomaterials,
 - Bibliographic research at libraries, internet, scientific databases,
 - Reporting and intermediate planning.

*During this experience, important results inherent to the risk remediation strategies based on "safety by design" approach were obtained and summarized in several papers: "S. Ortelli et al., Silica matrix encapsulation as a strategy to control ROS production while preserving photoreactivity in nano-TiO₂, **Environ. Sci.: Nano**, 3 (2016) 602-610"; "V. Marassi, S. Ortelli et al., Hollow-Fiber Flow Field-Flow Fractionation and Multi-Angle Light Scattering as new analytical solution for the quality control in pharmaceutical nanotechnology **Microchemical Journal** 2016 <http://dx.doi.org/10.1016/j.microc.2016.12.015>"; "A. Stoccoro, S. Ortelli et al., A panel of in vitro tests to evaluate genotoxic and morphological neoplastic transformation potential on Balb/3T3 cells by pristine and remediated titania and zirconia nanoparticles, **Mutagenesis**, (2016) 31 (5): 511-529"; "M. Allegri, S. Ortelli et al., Shape-related toxicity of titanium dioxide nanofibers, **PLoS ONE** 11 (2016) e0151365"; "V. Marassi, S. Ortelli et al., Hollow-Fiber Flow Field-Flow Fractionation and Multi-Angle Light Scattering Investigation of the Size, Shape and Metal-Release of Silver Nanoparticles in Aqueous Medium for Nano-risk Assessment, **Journal of Pharmaceutical and Biomedical Analysis** 106 (2015) 92-99"; "S. Ortelli et al., Multiple approach to test nano TiO₂ photo-activity, **Journal of Photochemistry and Photobiology A: Chemistry** 292 (2014) 26-33" and "D. Gardini, S. Ortelli et al., Silica-coating as protective shell for the risk management of nanoparticles, **Journal of Physics: Conference Series** 429 (2013) 012052".*
 - Dates **From 1, July, 2011 to 1, April 2013**
 - Name and address of the employer CIRI-MAM - Centro Interdipartimentale di Ricerca Industriale Meccanica Avanzata e Materiali - Alma Mater Studiorum University of Bologna
ARIC - Via Zamboni 33, 40138, Bologna Italy
 - Type of business or sector Participation to the research project "Nano-structured composite materials with high chemical-mechanical performance".
CIRI-MAM competition announcement - date: 05, May 2011
 - Occupation or position held Research assignee for technology transfer projects
 - Main activities and responsibilities The main activities carried out by me were:
 - Continue collaboration with people of the University of Bologna, CNR-ISTEC institute and companies,
 - Coordination activities of the various subjects involved in the project,
 - Preparation of an "action plan" (objectives, detailed activities and duration),
 - Synthesis of nanoparticles,
 - Study on functionalization of substrates through the application of nanostructured coatings,
 - Engineering of surfaces,
 - Bibliographic research at libraries, internet, scientific databases,
 - Reporting and intermediate planning.
 - Dates **From 4, November, 2010 to 24, June 2011**
 - Name and address of the employer Adler S.r.l
Via Calabria, 6 - Osteria Grande, 40060 (BO) Italy
 - Occupation or position held Post-graduate internship in collaboration with Alma Mater Studiorum University of Bologna
 - Main activities and responsibilities The main activities carried out by me were:
 - Characterization of azo dyes in application on leather in accordance with current industry standards (IUF),
 - Research concerning the properties and applications of organic dyes,
 - Development of new materials and their properties,
 - Bibliographic research in libraries, Internet, scientific databases,
 - Development of organizational capabilities and integration within a workgroup.
 - Dates **From January 2010 to September 2010**
 - Name and address of the employer ISTEC-CNR Institute of Science and Technology for Ceramics (CNR-ISTEC), National Research Council of Italy, Via Granarolo, 64 - Faenza, 40060 (RA) Italy

- Occupation or position held
- Main activities and responsibilities

Voluntary research activities during an internship for the Master's degree

The main activities carried out by me were:

- Optimization and characterization of the synthesis of nanoparticles by a process with low environmental impact,
- Deep physicochemical characterization of bimetallic nanoparticle systems Au-Cu,
- Innovative properties of nanoparticle materials,
- Bibliographic research in libraries, Internet, scientific databases,
- Study of the catalytic activity of nanomaterials synthesized in the reduction of 4-nitrophenol and other nitro compounds.

*This activity allowed important progress to the synthesis optimization and physicochemical and functional characterization of metallic and bimetallic nanoparticles. The great results obtained were reported in the following paper: "M. Blosi, S. Ortelli et al., Bimetallic nanoparticles as efficient catalysts: facile and green microwave synthesis, **Materials 9 (2016) 550**"; "M. Blosi, S. Ortelli et al., Green and easily scalable microwave synthesis of noble metal nanosols (Au, Ag, Cu, Pd) usable as catalysts, **New J. Chem. 38 (2014) 1401-1409**" and "M. Blosi, S. Ortelli et al., Green synthesis of noble metal and bimetal nanosols and their applications as catalysts, **Technical Proceedings of the NSTI-Nanotech 2013 1 (2013) 327-330**".*

From April 2008 to July 2008

Alpi S.p.a

Viale della Repubblica, 34 - Modigliana, 47015 (FC) Italy

Voluntary research activities during an internship for the Bachelor's degree

The main activities carried out by me were:

- Bibliographic research in libraries, Internet, scientific databases,
- Study, synthesis and use of azo dyes soluble in water and suitable for application on wood dyeing,
- Purification by crystallization of the dyes synthesized and characterization by several analyses: Electronic Spectroscopy UV-Vis, IR spectroscopy, HPLC, NMR and mass spectrometry MS,
- Study on the photochemical degradation dye; tests of light fastness by Xenotest.

EDUCATION

- Dates

- Name and type of organisation providing education and training

- Title of qualification

April 2015

Alma Mater Studiorum University of Bologna

ARIC - Via Zamboni 33, 40138, Bologna Italy

PhD, Doctorate Degree in Chemistry - XXVII Cycle

Thesis entitled "TAILORING PROPERTIES AND FUNCTIONALITIES OF TiO₂ AND Ag NANOPARTICLES INVOLVED IN SURFACES ENGINEERING PROCESSES", under supervision of Prof. S. Albonetti, Dott. ssa A. L. Costa and Prof. A. Vaccari

- Dates

- Name and type of organisation providing education and training

- Title of qualification awarded

October 2010

Faculty of Industrial Chemistry, Alma Mater Studiorum, University of Bologna

Viale Del Risorgimento 4, 40136, Bologna (IT)

Master's Degree in "Industrial Chemistry"

Thesis entitled "MICROWAVE ASSISTED SYNTHESIS OF NANOPARTICLES Au - Cu FOR CATALYTIC APPLICATIONS", under supervision of Prof. D. Nanni, Prof. S. Albonetti, Dott. ssa M. Blosi and Dott. M. Dondi

- Level in national classification

- Dates

- Name and type of organisation providing education and training

- Title of qualification awarded

108/110

October 2008

Degree Course "Chemistry of materials and Ceramic Technologies", Via Granarolo, 620, 48018, Faenza (RA) Italy - Faculty of Industrial Chemistry, Alma Mater Studiorum, University of Bologna

Bachelor's Degree in "Chemistry of materials and Ceramic Technologies"

Thesis entitled "SYNTHESIS, CHARACTERIZATION AND STABILITY OF AZO DYES FOR WOOD", under supervision of Prof. D. Nanni and Dott. S. Selli

- Level in national classification

- Dates

- Name and type of organisation providing education and training

- Title of qualification awarded

- Level in national classification

105/110

2005

High School - Artistic study

"G. Ballardini", Corso Baccarini, 17 Faenza 48018 (RA) Italy

Artistic High School Diploma

100/100

**PARTECIPATION AND
COORDINATION OF NATIONAL AND
INTERNATIONAL PROJECTS**

- Dates
 - Name of project
 - Type of project
 - Occupation or position held
 - Main activities and responsibilities
- From 1, March, 2020 to 31, August, 2023**
ASINA – Anticipating Safety Issues at the Design Stage of NAno Product Development, coordinated by ISTEC-CNR
 Grant agreement number: 862444
 European project – H2020- NMPB-15
 Involvement in the research activity on: selection of nanomaterials and relative "safe by product design" solutions (WP1), monitoring measurements on processing line in order to define "safe by process design" solutions (WP3) and implementation of "safe by process design" solutions on industrial pilot plants (WP5).
 The main activities carried out by me were:
- Selection and characterization of nanomaterials for clean nanotechnology and cosmetic fields,
 - Application of "safe by design" solutions on selected nanomaterials,
 - Study of lab-scale and industrial pilot plants involved in processing lines for the production of materials for clean nanotechnology and cosmetic fields,
 - Monitoring measurements campaigns industrial pilot plants involved in various processing lines and development of "safe by process design" solutions,
 - Bibliographic research at libraries, internet, scientific databases,
 - Writing reports,
 - Reporting and intermediate planning.
- Dates
 - Name of project
 - Type of project
 - Occupation or position held
 - Main activities and responsibilities
- From 1, January, 2020 to 31, December, 2021**
SOS Water – System for the decontamination and the sustainable development of energy from water.
 National project financed by Ministry of Defence, coordinated by ISTEC-CNR
 Involvement in the research and experimental activities for the development of a portable system for the decontamination of water.
 The main activities carried out by me were:
- Study and development of filter unit where the first purification step by means of a filtering membrane occurs,
 - Study and development of cell unit, in the specific of anode where the oxidation of organic pollutants occurs,
 - Engineering and integration of filter and cell units in a portable system,
 - Bibliographic research, reporting and planning of the experimental activity.
- Dates
 - Name of project
 - Type of project
 - Occupation or position held
 - Main activities and responsibilities
- From 1, January, 2018 to 31, December, 2021**
PATROLS – Physiologically Anchored Tools for Realistic nanOmateriaL hazard aSsessment, coordinated by Swansea University
 Grant agreement number: 760813
 European project – H2020-NMBP-29-2017
 Involvement in the physicochemical characterization of nanomaterials as a support to the biological investigation, activity within WP1.
 The main activities carried out by me were:
- Preparation of nanosuspensions following dispersion protocols, drawn up by previous European projects relating to the topic of "Nanosafety" (NANOREG, NANOREG2, GUIDENANO, CALIBRATE...),
 - Physicochemical characterization of nanosuspensions (in the specific morphological characterization by FESEM and TEM analyses); colloidal characterization of nanosuspensions in biological and environmental media,
 - Bibliographic research, reporting and planning of the experimental activity.
- Dates
 - Name of project
 - Type of project
 - Occupation or position held
 - Main activities and responsibilities
- From 1, November, 2017 to 31, October, 2021**
BIORIMA – BIOMaterial Risk MAnagement, coordinato da Institute of occupational medicine coordinated by Institute of Occupational Medicine
 Grant agreement number: 760928
 European project – H2020-NMBP-12-2017
 Involvement in chemical-physical characterization and application of "safe by design" strategies on biomaterials, activity within WP2.
 The main activities carried out by me were:

- Physicochemical characterization of nanomaterials for biomedical applications,
 - Application of “safe by design” on nanomaterials for biomedical applications,
 - Bibliographic research, reporting and planning of the experimental activity.
- Dates
 - Name of project
- From 1, January, 2017 to 31, December, 2020**
- PROTECT** – Pre-commercial lines for production of surface nanostructured antimicrobial and anti-biofilm textiles, medical devices and water treatment membranes, coordinated by Universitat Politecnica de Catalunya
Grant agreement number: 720851
European project – H2020- PILOTS-02-2016
Involvement in the research activity of Task 2.2 “Defining Safety by Process Design for the three pre-commercial lines” and collaboration in the research activity of WP4 “Environment and human safety evaluation of the coating processes and products”.
- Type of project
 - Occupation or position held
- The main activities carried out by me were:
- Synthesis and characterization of inorganic nanoparticles with antibacterial properties,
 - Study inherent to application of antibacterial nanoparticles onto textile substrate,
 - Development of Safety by Process Design for the three pre-commercial lines: sonochemical continuous technology spray coating continuous technology and sonochemical batch-mode technology,
 - Bibliographic research at libraries, internet, scientific databases,
 - Writing reports,
 - Reporting and intermediate planning.
- Dates
 - Name of project
- From 1, February, 2016 to 31, January, 2018**
- FabricSafe** - Defense of the individual through fabrics acting as active and passive protection
CNR-ISMN protocol N.0004223 – date: 24/12/2015
National project financed by Ministry of Defence, coordinated by ISMN-CNR
Responsible of technical activities and scientific reporting for ISTEEN unit.
CNR-ISMN protocol N.0002273 – date: 20/07/2016
- Type of project
 - Occupation or position held
- The main activities carried out by me were:
- Development of inorganic and inorganic/organic hybrid coating in textile support,
 - Development of textiles with self-cleaning, antibacterial and flame retardants properties
 - Characterization of coated textiles,
 - Study on functional performance tests,
 - Bibliographic research at libraries, internet, scientific databases,
 - Reporting and intermediate planning,
 - Writing reports.
- Dates
 - Name of project
- From 15, February, 2016 to 31, July, 2016**
- ProBioType** - Prototyping ProBioPol results, coordinated by ISTEEN-CNR
CNR-ISTEEN protocol N.0000147 – date: 05/02/2016
Progetto Bandiera “La Fabbrica del Futuro Piattaforma Manifatturiera Nazionale”
Involvement in the research activity of WP1.
- Type of project
 - Occupation or position held
- The main activities carried out by me were:
- Development of catalyst with antibacterial and photocatalytic for post-treatments in working lab-scale system for production of polyhydroxyalcanoates (PHA),
 - Development of TiO₂ NPs based photocatalyst for purification of waste water,
 - Study, physicochemical and functional characterization of TiO₂ catalyst,
 - Bibliographic research at libraries, internet, scientific databases,
 - Writing reports,
 - Reporting and intermediate planning.
- Dates
 - Name of project
- From 15, February, 2016 to 31, July, 2016**
- Autospin** - Automated electrospinning plant for industrial manufacturing of functional composite nanofibres, coordinated by ISMAC-CNR
CNR-ISMAC protocol N.0000140 – date: 05/02/2016
Progetto Bandiera “La Fabbrica del Futuro Piattaforma Manifatturiera Nazionale”
Responsibility in the characterization of electrospun nanofibers by FE-SEM analysis
- Type of project
 - Occupation or position held
- The main activities carried out by me were:
- Development of a user-friendly image analysis tool for quality control of the electrospun products,
 - Bibliographic research at libraries, internet, scientific databases,
 - Writing reports,
- Main activities and responsibilities

- Dates
 - Name of project
 - Type of project
 - Occupation or position held
 - Main activities and responsibilities
- Reporting and intermediate planning.
 - From 15, February, 2016 to 31, July, 2016**
 - ProBioType II** - Prototyping ProBioPol Results II (UV/TiO₂ Photocatalytic Reactor), coordinated by ISTEC-CNR
CNR-ISTEC protocol N.0000151 – date: 05/02/2016
Progetto Bandiera “La Fabbrica del Futuro Piattaforma Manifatturiera Nazionale”
Leader of WP1 on design and testing of the UV/TiO₂ photocatalytic reactor prototype
The main activities carried out by me were:
 - Realization of photoreactor and development of TiO₂ NPs based catalyst in photocatalytic pilot plant to ProBioPol waste-to-bioplactic system,
 - Study, physicochemical and functional characterization of TiO₂ catalyst,
 - Bibliographic research at libraries, internet, scientific databases,
 - Writing reports,
 - Reporting and intermediate planning.

During the project important results inherent to the scale-up of UV/TiO₂ photoreactor were obtained. The pilot photoreactor achieved allowed to collect satisfactory photocatalytic data.
 - From 1, October, 2013 to 31, March, 2016**
 - SUN** – Sustainable nanotechnologies, coordinated by Cà Foscari University of Venice
Grant agreement number: NMP4-LA-2013-604305
European project - FP7-NMP-2013-LARGE-7
Leader of ISTEC characterization unit in WP1.
Active participation to the research activity of WP7.
The main activities carried out by me were:
 - Characterization of nanomaterials in biological and eco-tox media,
 - Identification of key properties that drive nano-bio/eco interactions,
 - Development of risk remediation strategy based on “safety by molecular design” approach,
 - Bibliographic research at libraries, internet, scientific databases,
 - Writing reports,
 - Reporting and intermediate planning.

*During the project important results inherent to the colloidal characterization of NPs in relevant media for nano (eco) toxicology were obtained and summarized in the paper “S. Ortelli, A.L. Costa, et al., Colloidal characterization of CuO nanoparticles in biological and environmental media, **Environ. Sci.: Nano** 4 (2017) 1264-1272”.*
 - From 1, February, 2014 to 15, July, 2016**
 - ProBioPol** – Innovative and sustainable production of biopolymers, coordinated by ISTEC-CNR
CNR-ISTEC protocol N.0000733 – date: 24/03/2014
Progetto Bandiera “La Fabbrica del Futuro Piattaforma Manifatturiera Nazionale”
Involvement in the research activity of WP3 and WP5.
The main activities carried out by me were:
 - Development of catalyst (nanoparticles and nano-coated textile supports) with antibacterial and photocatalytic for pre- and post-treatments in production process of polyhydroxyalcanoates (PHA),
 - Development of electrospun nanofibers doped with TiO₂ and Ag NPs for pre- and post-treatments in production process of polyhydroxyalcanoates (PHA),
 - Study and physicochemical characterization of TiO₂ and Ag NPs based catalyst,
 - Functional characterization of TiO₂ and Ag NPs based catalyst in the production process of PHA,
 - Bibliographic research at libraries, internet, scientific databases,
 - Writing reports,
 - Reporting and intermediate planning.
 - From 15, January, 2013 to 15, January, 2015**
 - NanoTWICE** – Composite Nanofibres for Treatment of air and Water by an Industrial Conception of Electrospinning, coordinated by ISMAC-CNR
Prot.CNR-ITIA protocol N.0001830 (2012)
Prot.CNR-ITIA protocol N.0000159 (2014)
Progetto Bandiera “La Fabbrica del Futuro Piattaforma Manifatturiera Nazionale”
Leader of WP2 on the development of electrospinnable formulation based on keratin solutions doped with ceramic nanoparticles.
The main activities carried out by me were:

- Study on compatibility of TiO₂ and Ag nanoparticles (NPs) in keratin suspension,
- Study and characterization of electrospinnable formulations,
- Physicochemical and functional characterization of electrospun nanofibers,
- Bibliographic research at libraries, internet, scientific databases,
- Writing reports and papers,
- Reporting and intermediate planning.

*During the project important results inherent to the integration of inorganic NPs in electrospinnable formulation were obtained and summarized in the paper "A. Varesano, S. Ortelli et al., Multifunctional Hybrid Nanocomposite Nanofibers Produced by Colloid Electrospinning from Water Solutions, **Current Nanoscience 11 (2015) 41-48**" and "M. Borrotti, S. Ortelli, et al., Defect minimisation and feature control in electrospinning through design of experiments, **J. Appl. Polym. Sci. 134 (2017) 44740**"*

From September, 2013 to September, 2014

Development of organic-inorganic coating adding with metal or metal oxide nanoparticles, coordinated by ISTEC-CNR

National industrial project financed by FILA SpA

Design and experimental realization of nanostructured coatings.

The main activities carried out by me were:

- Study on compatibility of TiO₂ and Ag nanoparticles in commercial product,
- Development of formulations with self-cleaning, photocatalytic and antibacterial functional properties,
- Study, physicochemical and functional characterization of TiO₂ and Ag nanoparticles based coating on ceramic tiles,
- Bibliographic research at libraries, internet, scientific databases,
- Writing reports,
- Reporting and intermediate planning.

From 20, October, 2014 to 24, October 2014

Advanced physicochemical characterization of SiO₂ coating as design strategy to harmonize and control the biological reactivity of TiO₂ nanosols – in collaboration with Advanced Microscopy Laboratory, CRANN, Trinity College Dublin

QNano Transnational Application Program

PhD student

The main activities carried out by me were:

- Preparation of TEM sample
- TEM analysis on TiO₂, TiO₂/SiO₂, Ag and Ag/SiO₂ nanoparticles, synthesized in ISTEC,
- Writing report.

*This experience allowed the achievement of excellent results in the morphological characterization of TiO₂/SiO₂ and Ag/SiO₂ systems, produced during Sanowork project, and summarized in the paper: "S. Ortelli, A.L. Costa, Nanoencapsulation techniques as useful tool towards "safer by molecular design", **Nano-Structures & Nano-Objects, 2016, doi:10.1016/j.nanoso.2016.03.006 (accepted)**".*

From 15, March, 2012 to 15, March, 2015

Sanowork – Safe Nano Worker Exposure Scenarios, coordinated by ISTEC-CNR

Grant agreement number: NMP4-SL-2012-280716

European project - FP7-NMP-2011-SMALL-5

Active participation to WP4 and WP6.

The main activities carried out by me were:

- Engineering of surfaces,
- Development of risk remediation strategy based on "safety by molecular design" approach
- Synthesis, characterization, functionalization and applications of nanomaterials,
- Bibliographic research at libraries, internet, scientific databases,
- Study inherent to nano-bio interactions,
- Writing reports and papers,
- Reporting and intermediate planning.

From April, 2011 to June, 2012

Development of "ceramization" process on textile with self-cleaning properties, coordinated by ISTEC-CNR

National industrial project financed by Novaresin SpA

Design and development of textile ceramization process.

The main activities carried out by me were:

- Dates
- Name of project
- Type of project
- Occupation or position held
- Main activities and responsibilities

- Dates
- Name of project
- Type of project
- Occupation or position held
- Main activities and responsibilities

- Dates
- Name of project
- Type of project
- Occupation or position held
- Main activities and responsibilities

- Dates
- Name of project
- Type of project
- Occupation or position held
- Main activities and responsibilities

- Study on TiO₂ nanomaterials; synthesis, characterization and optimization of commercial products,
- Development of nano-TiO₂ and nano-Ag coating on different textile supports,
- Synthesis of organic/inorganic hybrid nanomaterial and application on textile support,
- Development flame retardant systems for textiles,
- Study and physicochemical characterization of nano-coated textiles,
- Fine tuning of set-up in photocatalytic tests,
- Bibliographic research at libraries, internet, scientific databases,
- Writing reports and papers,
- Reporting and intermediate planning.

*This experience allowed the achievement of important results inherent to the technology transfer for the production of self-cleaning and antibacterial textiles. The meaningful data obtained were summarized in the following papers: "S. Orтели et al., TiO₂ nanosols applied directly on textiles using different purification treatments, **Materials 8 (2015) 7988–7996**"; "S. Orтели et al., TiO₂ based nano-photocatalysis immobilized on cellulose substrates, **Journal of Photochemistry and Photobiology A: Chemistry 276 (2013) 58–64**" and "A.L. Costa, S. Orтели et al., TiO₂ based photocatalytic coatings: From nanostructure to functional properties, **Chem. Eng. J. 225 (2013) 880–886**".*

PUBLICATIONS

Bibliografy

h-index = 14, i-10 index = 18, total citations = 448, source Google Scholar (March 2020)

2020 S.Orтели, A.L. Costa, *Insulating thermal and water-resistant hybrid coating for fabrics, Coatings, Coatings 10 (2020) 72*

2019 M.G. Bianchi, L. Campagnolo, M. Allegri, S. Orтели, M. Blosi, M. Chiu, G. Taurino, V. Lacconi, A., Pietroiusti, A.L., Costa, C.A. Poland, D. Baird, R. Duffin, O. Bussolati, E. Bergamaschi, *Length-dependent toxicity of TiO₂ nanofibers: mitigation via shortening, Nanotoxicology, 2019, Accepted Manuscript, <https://doi.org/10.1080/17435390.2019.1687775> (Article in press)*

I. Zanoni, M. Crosera, S. Orтели, M. Blosi, G. Adami, F. Filon Larese, A.L. Costa, *CuO nanoparticles penetration through intact and damaged human skin, New J. Chem. 43 (2019) 17033-17039*

R. Bengalli, S. Orтели, M. Blosi, A.L. Costa, P. Mantecca, L. Fiandra, *In Vitro Toxicity of TiO₂:SiO₂ Nanocomposites with Different Photocatalytic Properties, Nanomaterials 9 (2019) 1041*

S. Orтели, G. Malucelli, M. Blosi, I. Zanoni, A.L. Costa, *NanoTiO₂@DNA complex: a novel eco, durable, fire retardant design strategy for cotton textiles, Journal of Colloid and Interface Science, 546 (2019) 174–183*

F.C. Simeone, M. Blosi, S. Orтели, A.L. Costa, *Assessing occupational risk in designs of production processes of nano-materials, NanolImpact 14 (2019) 100149*

L. Bonura, G. Bianchi, D.O. Sanchez Ramirez, R.A. Carletto, A. Varesano, C. Vineis, C. Tonetti, G. Mazzuchetti, E. Lanzarone, S. Orтели, A.L. Costa, M. Blosi, *Monitoring Systems of an Electrospinning Plant for the Production of Composite Nanofibers, T. Tolio et al. (eds.), Factories of the Future (2019) – Book chapter*

S. Orтели, A. L. Costa, C. Torri, C. Samori, P. Galletti, C. Vineis, A. Varesano, L. Bonura, G. Bianchi, *Innovative and Sustainable Production of Biopolymers, T. Tolio et al. (eds.), Factories of the Future (2019) – Book chapter*

A. Lolli, M. Blosi, S. Orтели, A.L. Costa, I. Zanoni, D. Bonincontro, F. Carella, S. Albonetti, *Innovative synthesis of nanostructured composite materials by a spray-freeze drying process: Efficient catalysts and photocatalysts preparation, Catalysis Today 334 (2019) 193-202*

2018 S. Orтели, Anna L. Costa, P. Matteucci, M.R. Miller, M. Blosi, D. Gardini, S.A. M. Tofail, L. Tran, D. Tonelli, C.A. Poland, *Silica modification of titania nanoparticles enhances photocatalytic production of reactive oxygen species without increasing toxicity potential in vitro, RSC Adv. 8*

(2018) 40369

A. Lolli, V. Maslova, D. Bonincontro, F. Basile, S. Ortelli, S. Albonetti, *Selective Oxidation of HMF via Catalytic and Photocatalytic Processes Using Metal-Supported Catalysts*, *Molecules* 23 (2018) 2792

D. Gardini, M. Blosi, S. Ortelli, C. Delpivo, O. Bussolati, M.G. Bianchi, M. Allegri, E. Bergamaschi, A.L. Costa, Nanosilver: An innovative paradigm to promote its safe and active use, *NanoImpact* 11 (2018) 128–135

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- 2016** A. Stocco, S. Di Bucchianico, C. Uboldi, F. Coppedè, J. Ponti, C. Placidi, M. Blosi, S. Ortelli, A.L. Costa, L. Migliore, A panel of in vitro tests to evaluate genotoxic and morphological neoplastic transformation potential on Balb/3T3 cells by pristine and remediated titania and zirconia nanoparticles, *Mutagenesis* (2016) 31 (5): 511-529
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- M. Blosi, S. Ortelli, A. Lolli, P. Benito Martinez, S. Andreoli, A.L. Costa, M. Dondi, S. Albonetti, Bimetallic nanoparticles as efficient catalysts: facile and green microwave synthesis, *Materials* 9 (2016) 550
- S. Ortelli, C. A. Poland, G. Baldi, A. L. Costa, Silica matrix encapsulation as a strategy to control ROS production while preserving photoreactivity in nano-TiO₂, *Environ. Sci.: Nano*, 3 (2016) 602-610
- M. Allegri, M.G. Bianchi, M. Chiu, J. Varet, A.L. Costa, S. Ortelli, M. Blosi, O. Bussolati, C.A. Poland, E. Bergamaschi, Shape-related toxicity of titanium dioxide nanofibers, *PLoS ONE* 11 (2016) e0151365
- 2015** S. Ortelli, A.L. Costa, M. Dondi, TiO₂ nanosols applied directly on textiles using different purification treatments, *Materials* 8 (2015) 7988–7996
- V. Marassi, S. Casolari, B. Roda, A. Zattoni, P. Reschiglian, S. Panzavolta, T. Syed, S. Ortelli, C. Delpivo, M. Blosi, A. L. Costa, Hollow-Fiber Flow Field-Flow Fractionation and Multi-Angle Light Scattering Investigation of the Size, Shape and Metal-Release of Silver Nanoparticles in Aqueous Medium for Nano-risk Assessment, *Journal of Pharmaceutical and Biomedical Analysis* 106 (2015) 92–99
- A. Varesano, C. Vineis, C. Tonetti, D.O. Sanchez Ramirez, G. Mazzuchetti, S. Ortelli, M. Blosi, A.L. Costa, Multifunctional Hybrid Nanocomposite Nanofibers Produced by Colloid Electrospinning from Water Solutions, *Current Nanoscience* 11 (2015) 41-48
- 2014** S. Ortelli, M. Blosi, C. Delpivo, D. Gardini, M. Dondi, I. Gualandi, D. Tonelli, V. Aina, I. Fenoglio, A. Gandhi, S. Tofail, A. Costa, Multiple approach to test nano TiO₂ photo-activity, *Journal of Photochemistry and Photobiology A: Chemistry* 292 (2014) 26–33
- M. Blosi, S. Albonetti, S. Ortelli, A.L. Costa, L. Ortolani, M. Dondi, Green and easily scalable microwave synthesis of noble metal nanosols (Au, Ag, Cu, Pd) usable as catalysts, *New J. Chem.* 38 (2014) 1401–1409 - **Selected as inside front cover article for the April issue (2014)**
- 2013** S. Ortelli, M. Blosi, S. Albonetti, A. Vaccari, M. Dondi, A.L. Costa, TiO₂ based photocatalysis immobilized on cellulose substrates, *Journal of Photochemistry and Photobiology A: Chemistry* 276 (2013) 58–64
- A.L. Costa, S. Ortelli, M. Blosi, S. Albonetti, A. Vaccari, M. Dondi, TiO₂ based photocatalytic coatings: From nanostructure to functional properties, *Chem. Eng. J.* 225 (2013) 880–886
- PROCEEDINGS** R.D.O. Sanchez, R.A. Carletto, C. Tonetti, A. Varesano, C. Vineis, G. Mazzuchetti, S. Ortelli, M. Blosi, A.L. Costa, Protein-based nanofiber membranes with functional nanoparticles, *NART 2015-Nanofibers, Applications and Related Technologies* (2015) 243-250
- D. Gardini, M. Blosi, C. Delpivo, S. Ortelli, A.L. Costa, Silica-coating as protective shell for the risk management of nanoparticles, *Journal of Physics: Conference Series* 429 (2013) 012052
- M. Blosi, S. Ortelli, S. Albonetti, A.L. Costa, L. Ortolani, M. Dondi, Green synthesis of noble

PARTICIPATION IN MEETINGS AND SCIENTIFIC DIVULGATION

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- Lamezia Terme (Italy), 03-04 October, 2019**
7th Mediterranean meetings of industrial hygiene, indoor and outdoor pollution: risk assessment, figures and skills
Participation in the conference – Oral Presentation - " Monitoraggio indoor di nanoparticelle durante la produzione di rivestimenti antibatterici nanostrutturati" S. Orтели, F. Belosi, F. Ravegnani, C. Baldisserri. M. Blosi, F.C. Simeone, M. Perucca, A.L. Costa
- Salerno (Italy), 28-30 August, 2019**
Chemistry meets Industry and Society – CIS19
Participation in the workshop "Chemistry for Secure Societies", within CIS2019 conference – Oral Presentation - "Coatings based on TiO₂ nanoparticles and biomacromolecules as a new flame retardant approach for cotton fabrics" S. Orтели, G. Malucelli, A.L. Costa
- Roma (Italy), 11-14 June, 2019**
Nanoinnovation 2019
Participation in the conference – Poster Presentation - " Monitoring occupational exposure scenarios during the production of nanostructured antibacterial textiles" S. Orтели, F. Belosi, F. Ravegnani, P. Mantecca, C. Baldisserri, M. Blosi, F.C. Simeone and A.L. Costa
- Roma (Italy), 05 June, 2019**
Workshop "CBRNe Security and risk"
Participation in the workshop – Oral Presentation - "Hybrid flame retardant coatings on textiles" S. Orтели
- Grenoble (France), 05-09 November, 2018**
6th International Conference nanoSAFE 2018
Participation in the conference – Oral Presentation - "Safe-by-design approach applied to the production of antibacterial textiles" S. Orтели, P. Mantecca, F. Belosi, F. Ravegnani, C. Baldisserri, F. C. Simeone, M. Blosi, A.L. Costa
- Roma (Italy), 11-14 September, 2018**
Nanoinnovation 2018
Participation in the conference – Poster Presentation - "Coatings based on TiO₂ nanoparticles and biomacromolecules as a new flame retardant approach for cotton fabrics" S. Orтели, G. Malucelli, A.L. Costa
- Bari (Italy), 11-13 June, 2018**
12th International Symposium on SiO₂ advanced dielectrics and relative devices
Participation in the conference – Oral Presentation - " Silica coating as "safer by molecular design" strategy to control nano-TiO₂ biological reactivity" S. Orтели, M. Blosi, D. Gardini, A.L. Costa
- Roma (Italy), 13-17 May, 2018**
SETAC
Participation in the conference – Oral Presentation - "Silica coating for the control of nano-reactivity" S. Orтели, M. Blosi, D. Gardini, A.L. Costa
- Parma (Italy), 22-24 March, 2018**
MECSPE2018
Participation in the exhibition – Oral Presentation - "Novel inorganic antibacterial coatings for cotton fabrics" S. Orтели
- Roma (Italy), 26-29 September, 2017**
Nanoinnovation 2017
Participation in the conference – Poster Presentation "Water purification with active cotton membrane: photo- and photoelectrochemical treatments in semi-pilot plant" S. Orтели, C. Baldisserri, M. Blosi, A.L. Costa
- Paris (France), 28-30 June, 2017**
Nanotech France
Participation in the conference – Oral Presentation "Colloidal characterization of surface modified CuO nanosuspensions in media relevant for nano (eco) toxicology" S. Orтели, M. Blosi, I. Zaroni, C. Baldisserri, A.L. Costa
- Faenza (Italy), 07-09 June, 2017**
Ceramics for energy (CEn 2017) – 2nd International forum on ceramics and inorganic materials

- Description *Participation in the conference – Poster Presentation* "Pilot-scaling of nanophotocatalytic reactors for water purification treatments" S. Ortelli, M. Blosi, C. Baldisserrri, A.L. Costa
- Place and date **Valencia (Spain), 04 April, 2017**
- Context NanoMONITOR 1st Stakeholders' Day
"Development of a real-time information and monitoring system to support the risk assessment of nanomaterials under REACH"
- Description *Participation in the workshop*
- Place and date **Bologna (Italy), 06-10 February, 2017**
- Context "Pier Giorgio Merli" International TEM school in Materials Science 2016
- Description *Participation in the practical course*
- Place and date **Bologna (Italy), 14-18 November, 2016**
- Context "Pier Giorgio Merli" International TEM school in Materials Science 2016
- Description *Participation in the theoretical course*
- Place and date **Grenoble (France), 07-10 November, 2016**
- Context 5th international conference Nanosafe 2016
- Description *Participation in the conference – Poster Presentation* "Colloidal characterisation of surface modified CuO nanosol" S. Ortelli, M. Blosi, L. Viale, A. L. Costa
- Place and date **Milano (Italy), 04-08 October, 2016**
- Context Exhibition Bi-MU 2016
- Description *Participation in the "La fabbrica del futuro" stand, showing two pilot plants (photoreactors), developed under the ProBioType and ProBioType II projects, for the photodegradation of water organic pollutants.*
- Place and date **Bologna (Italy), 09-10 June, 2016**
- Context 7° Corso nazionale di introduzione alla fotochimica (CNIF16)
- Description *Participation in the school*
- Place and date **Torino (Italy), 15-16 February, 2016**
- Context Fire retardants & textiles: past, present and future – COST MP1105 FLARETEX
- Description *Participation in the conference – Poster Presentation* "Ceramer coating on non-woven fabric as potential flame retardant" S. Ortelli, A.L. Costa
- Place and date **Venezia (Italy), 24-29 January, 2016**
- Context 2nd Sustainable Nanotechnology School
- Description *Participation in the conference – Oral Presentation and Tutorial & Lab exercise* "Synthesis, characterization and feasible application of silver and titanium dioxide nanomaterials" S. Ortelli, A.L. Costa
- Place and date **Roma (Italy), 26-28 October, 2015**
- Context XI national conference on nanophase materials
- Description *Participation in the conference – Oral Presentation* "Control of nanoAg toxicological and antibacterial activity through Safety by Design approach" S. Ortelli, D. Gardini, M. Blosi, O. Bussolati, M. G. Bianchi, M. Allegri, E. Bergamaschi, A. L. Costa
- Place and date **Erice (Italy), 27-31 July, 2015**
- Context International summer workshop "NANOSCIENCE meets METROLOGY: size and shape engineering of nanoparticles towards improved technologies for energy, environment and health"
- Description *Participation in the conference – Oral Presentation* "Control of nanotitania surface photoreactivity to address safety issues" S. Ortelli, M. Blosi, C. Delpivo, I. Gualandi, D. Tonelli, I. Fenoglio, A.L. Costa
- Place and date **Mestre (Italy), 09-11 March, 2015**
- Context SUN-SNO-GUIDENANO Sustainable Nanotechnology Conference 2015
- Description *Participation in the conference – Oral Presentation* "SANOWORK: towards a "Safety by Design" management of nanomaterials" S. Ortelli, C. Delpivo, A.L. Costa
- Place and date **Grenoble (France), 18-20 November, 2014**
- Context 4th International Conference NANOSAFE 2014
- Description *Participation in the conference – Oral Presentation* ""Safety by design" to control the biological reactivity of nanosilver" S. Ortelli, M. Blosi, C. Delpivo, D. Gardini, M. G. Bianchi, M. Allegri, O. Bussolati, E. Bergamaschi, A.L. Costa
- Place and date **Madrid (Spain), 15-18 June, 2014**
- Context 4th International Colloids Conference
- Description *Participation in the conference – Poster Presentation* ""Safety by design" approach to manage nanotitania surface photoreactivity" S. Ortelli, M. Blosi, C. Delpivo, I. Gualandi, D. Tonelli, I. Fenoglio, P. Matteucci, C. Poland, A.L. Costa

- Place and date **Bologna (Italy), 18 December, 2013**
 - Context XIII Giornata di chimica dell'Emilia Romagna
 - Description *Participation in the conference – Poster Presentation* “Electrospun keratin based nanofibers with embedded ceramic nano-phases” S. Ortelli, M. Blosi, S. Albonetti, A. Vaccari, A. L. Costa, A. Varesano, C. Vineis, G. Mazzucchetti
- Place and date **Faenza (Italy), 08-11 October, 2013**
 - Context International Conference - MiMe - Materials in Medicine
 - Description *Participation in the conference – Poster Presentation* “Green synthesis of noble metal nanosols usable as theranostic fluids” M. Blosi, S. Ortelli, S. Albonetti, M. Raimondo, M. Dondi, A. L. Costa
- Place and date **Thessaloniki (Greece), 06-13 July, 2013**
 - Context International Conference on Nanosciences & Nanotechnologies and International Summer Schools “N&N, OE & Nanomedicine”
 - Description *Participation in the school and Participation in the conference with Oral Presentation* “Ceramic textiles: a view to improve fabrics performances” S. Ortelli, A. L. Costa, M. Blosi, M. Dondi
- Place and date **Ferrara (Italy), 17 December, 2012**
 - Context XII Giornata di chimica dell'Emilia Romagna
 - Description *Participation in the conference – Poster Presentation* “Self cleaning textile: a basic approach for photocatalytic characterization” S. Ortelli, A. L. Costa, M. Blosi, S. Albonetti, A. Vaccari
- Place and date **Venezia (Italy), 21-23 November, 2012**
 - Context NanotechItaly 2012 – International showcase for nanotechnologies
 - Description *Participation in the conference – Poster Presentation* “Self cleaning textile: a basic approach for photocatalytic characterization” S. Ortelli, A. L. Costa, M. Blosi, S. Albonetti, A. Vaccari
- Place and date **Verbania (Italy), 11-15 September, 2012**
 - Context EFCATS 2012 Summer School – 2012 1st Italian-Spanish School on Catalysis “Recent Advances and New Trends in Catalysis”
 - Description *Participation in the conference – Poster Presentation* “Self cleaning textile: a basic approach for photocatalytic characterization” S. Ortelli, A. L. Costa, M. Blosi, S. Albonetti, A. Vaccari
- Place and date **Firenze (Italy), 11-14 June, 2012**
 - Context XVIII Congresso Nazionale della Divisione di Chimica Industriale della Società Chimica Italiana (SCI) – The challenges of industrial chemistry for sustainable innovation”
 - Description *Participation in the conference – Poster Presentation* “Influence of hydrophilic properties on photocatalytic activity of TiO₂ based nanocoatings” S. Ortelli, A. L. Costa, M. Blosi, S. Albonetti, A. Vaccari
- Place and date **Bologna (Italy), 23-27 September, 2011**
 - Context “Questione...di chimica”
 - Description Laboratory experiments “Synthesis of gold nanoparticles and demonstration of superhydrophobic properties”

CONTRIBUTION IN MEETINGS AND SCIENTIFIC DIVULGATION

- Place and date **Bressanone (Italy), 28-30 October, 2019**
 - Context DSCTM department conference
 - Description **Prizegiving YIA2019 (Young Investigator Award 2019) Area: Green Chemistry - Award: Honorable mention**
 - Context Nanoinnovation 2019
 - Description *Contribution in the conference with oral presentation* “Managing occupational safety issues of nanomaterials in manufacturing processes: the PROTECT case studies” F.C. Simeone, S. Ortelli, F. Belosi, F. Ravegnani, P. Mantecca, C. Baldisserri, M. Blosi, and A.L. Costa
- Place and date **Malaga (Spain), 07-09 February, 2017**
 - Context New tools and approaches for nanomaterial safety assessment Conference
 - Description *Contribution in the conference with oral presentation* “Justification of safer-by-design solutions for CuO-NPs: a case study”, M. Blosi, S. Ortelli, C. Baldisserri, E. Badetti, A. Brunelli, A. Bonetto, D. Hristozov, A. Marcomini, A.L. Costa
- Place and date **Monte Verità – Ascona (Switzerland), 12-17 March, 2017**
 - Context Nanolmpact Conference 2017
 - Description *Contribution in the conference with oral presentation* “From design to properties evolution of nanomaterials in a safer-by-design framework” D. Gardini, C. Baldisserri, M. Blosi, S. Ortelli, A.L.

- Costa
- Place and date **Grenoble (France), 07-10 November, 2016**
 - Context 5th international conference Nanosafe 2016
 - Description *Contribution in the conference with oral presentation* "Electrochemical characterization of suspensions of oxidic nanoparticles in biological media", C. Baldisserri, M. Blosi, S. Ortelli, L. Viale, A. L. Costa
 - Place and date **Sevilla (Spain), 11-15 September, 2016**
 - Context 6° EuChemES Chemistry Congress
 - Description *Contribution in the conference with poster Presentation* "Characterization and properties of modified engineered nanoparticles dispersed in environmental and biological media", E. Badetti, A. Bonetto, A. Brunelli, S. Ortelli, A. Marcomini, M. Blosi, L. Viale, D. Hristozov, A. L. Costa
 - Place and date **Lille (France), 02-04 May, 2016**
 - Context E-MRS 2016 Spring Meeting
 - Description *Contribution in the conference with poster Presentation* "Keratin-based nanofibers with antibacterial and photo-catalytic activities", C. Vineis, A. Varesano, C. Tonetti, D.O. Sánchez Ramírez, R. A. Carletto, S. Ortelli, M. Blosi, A. L. Costa
 - Place and date **Bologna (Italy), 25-27 November, 2015**
 - Context ExpoChimica
 - Description *Contribution in the conference with oral Presentation* "Nuove sfide tecnologiche grazie a materiali tessili ceramizzati", A.L. Costa, S. Ortelli, M. Blosi
 - Place and date **Grenoble (France), 18-20 November, 2014**
 - Context 4th International Conference NANOSAFE 2014
 - Description *Contribution in the conference with oral Presentation* "Nano CuO case study: integration of safety by molecular approach" A.L. Costa, L. Viale, M. Blosi, S. Ortelli
Contribution in the conference with oral Presentation "Wet state characterization as a key step in a Safety by design approach" C. Delpivo, S. Ortelli, M. Blosi, A. Vaccari, T. Syed, A.L. Costa
 - Place and date **Aveiro (Portugal), 04 July, 2014**
 - Context Workshop on Electrospinning for advanced nanocomposite production, 5th International conference on Advanced Nanomaterials
 - Description *Contribution in the conference with oral Presentation* "Functional Nanocomposite Keratin-based Nanofibers by Colloid Electrospinning from Water Solutions", A. Varesano, C. Vineis, C. Tonetti, D.O. Sánchez Ramírez, G. Mazzuchetti, S. Ortelli, M. Blosi, A.L. Costa
 - Place and date **Washington DC, 12-16 May, 2013**
 - Context Tech Connect World Summit & Innovation Showcase
 - Description *Contribution in the conference with oral Presentation* "Green synthesis of noble metal and bimetal nanosols and their applications as catalysts" M. Blosi, S. Ortelli, S. Albonetti, A. L. Costa, L. Ortolani, M. Dondi
 - Place and date **Prague (Czech Republic), 27 February-1 March, 2013**
 - Context 2nd QNano Integrating Conference "Quality in nanosafety assessment – driving best practice and innovation"
 - Description *Contribution in the conference with Presentation Poster* "Noble Metal Nanosols Catalysts Synthesized by a Total Green Approach: Ideal Candidate for Application in Cancer Therapy" M. Blosi, S. Ortelli, S. Albonetti, A. L. Costa, M. Dondi
Contribution in the conference with Presentation Poster "Dose-metric issues of commercial engineered nanoparticles" D. Gardini, M. Blosi, C. Delpivo, S. Ortelli, E. Bergamaschi, O. Bussolati, A. L. Costa - **Best poster prize.**
 - Place and date **Venezia (Italy), 21-23 November, 2012**
 - Context NanotechItaly 2012 – International showcase for nanotechnologies
 - Description *Contribution in the conference with Presentation Poster* "Silica coating of nanosurfaces: strategy for risk control and process improvement" A. L. Costa, M. Blosi, C. Delpivo, D. Gardini, S. Ortelli, S. Albonetti, A. Vaccari, G. Baldi, A. Barzanti, M. Dondi
Contribution in the conference with Presentation Poster "An eco-friendly and versatile route to noble bimetallic nanosols. Catalytic applications" M. Blosi, S. Ortelli, A. L. Costa, S. Albonetti, L. Ortolani, V. Tonini, M. Dondi

PARTICIPATION to SCIENTIFIC TRAINING SCHOOLS

- Luogo e data **Lugano (Switzerland), 12-16 November, 2018**
 - Contesto BioBusiness
 - Descrizione *Advanced short course on BioEntrepreneurship at USI (università della Svizzera Italiana)*

- Luogo e data **Valencia (Spain), 04 April, 2017**
- Contesto NanoMONITOR 1st Stakeholders' Day
- Descrizione "Development of a real-time information and monitoring system to support the risk assessment of nanomaterials under REACH"
- Luogo e data **Bologna (Italy), 06-10 February, 2017**
- Contesto "Pier Giorgio Merli" International TEM school in Materials Science 2016
- Descrizione *Participation to practical course*
- Luogo e data **Bologna (Italy), 14-18 Novembre, 2016**
- Contesto "Pier Giorgio Merli" International TEM school in Materials Science 2016
- Descrizione *Participation to theoretical Course*
- Luogo e data **Bologna (Italy), 09-10 June, 2016**
- Contesto 7th National introductory course to photochemistry (CNIF16)
- Descrizione *Participation to training school*
- Luogo e data **Thessaloniki (Greece), 06-13 July, 2013**
- Contesto ISSON13
- Descrizione International Summer Schools "N&N, OE & Nanomedicine"
- Luogo e data **Verbania (Italy), 11-15 September, 2012**
- Contesto EFCATS 2012 Summer School 2012 - 1st Italian-Spanish School on Catalysis
- Descrizione "Recent Advances and New Trends in Catalysis"

Attribution Fellowship

PEER REVIEWER ACTIVITY

Collaboration as referee of several international scientific journals:

Journal of Environmental Chemical Engineering, Fire and Materials, Journal of Coatings Technology and Research, Journal of Hazardous Materials, Carbohydrate Polymers, Materials Letters, Molecules, Journal of Nanomaterials, Textile Research Journal, Coatings, Metals, Applied Sciences, Applied Surface Science, Nanomaterials, Materials, Journal of Nanomedicine & Nanobiotechnology, Journal of Clinical Medicine, Mutagenesis, Dyes and Pigments, Progress in Color, Colorants and Coatings Journal, Comparative Biochemistry and Physiology - Part C: Toxicology & Pharmacology, Science of the Total Environment, Journal of Applied Biomaterials & Functional Materials and Journal of Sol-Gel Science and Technology.

RESEARCH ACTIVITY

Research sectors and scientific subjects

Synthesis, surface engineering and characterization of nanomaterials and their application for the production of nanostructured bulk or coating materials. Fields of interest are:

- **Sol-gel synthesis and colloidal properties characterization:** *Synthesis, design and characterization of nano metals, nano metal oxides, hybrid nanophases for the production of nano catalysts and nano carriers. Study of colloidal properties for the control of the nano confinement and engineering.*
- **Granulation processes (spray-drying, spray-freeze drying):** *Production of nanostructured micro-capsules. Inorganic / Organic micro granules for the protection and transport of nano-phases. Strategy for the encapsulation of molecular/nano phases into macro matrix.*
- **Functionalized textile:** *Nanosols synthesis / formulation and sol-gel deposition techniques for the integration of organic/inorganic and hybrid nanophases. Development of technical textile with antibacterial, self-cleaning, flame retardant, control of wettability properties.*
- **Advanced oxidation processes for the treatment of water:** *Materials and process engineering for the advanced oxidation treatment of water pollutants. Photocatalytic systems integrated into lab to pilot scale plants.*
- **Development of "safer by design" strategies as preventive tool for the nano-risk management:** *Control of potentially dangerous human and environmental impact of nanostructures with special focus on their synthetic and system dependent characterization.*

EDUCATIONAL SUPERVISOR

ACTIVITY

Co-supervisor of the following master thesis of Industrial Chemistry (Bologna University):

- **2018-2019** – Sviluppo di sistemi fotocatalitici per l'ossidazione selettiva di 5-idrossimetilfurale (presentata da Alessandro Allegri)
- **2016-2017** – Catalizzatori a base di Aquivion® PFSA per la produzione di etilene (presented by Riccardo Bacile)
- **2016-2017** – Preparazione di materiali nanostrutturati a base di MgO/CaO per applicazioni in catalisi (presented by Andrea Brigliadori - Bachelor's degree)
- **2015-2016** – Preparazione di materiali nanostrutturati a base di Pt per applicazioni in catalisi (presented by Francesca Carella)
- **2015-2016** – Ingegnerizzazione di materiali nanostrutturati fotocataliticamente attivi (presented by Matteo Bonoli)
- **2015-2016** – Incapsulamento di complessi organometallici e lantanoidei con silice e sviluppo come traccianti di supporti ceramici (presented by Ilaria Zanoni)
- **2014-2015** – Microincapsulazione di nanoparticelle di argento tramite tecnica spray-freeze-drying (presented by Lorenzo Preti)
- **2013-2014** – Sviluppo di protettivi antibatterici, a base di nano-argento, per superfici ceramiche (presented by Matteo Bonoli - Bachelor's degree)
- **2011-2012** – Sintesi e caratterizzazione di nanoparticelle bimetalliche Pd/Au e Pd/Cu (presented by Valentina Tonini)

EDUCATIONAL ACTIVITY

- **From 2013** – Annual seminars at Bachelor's degree students (Chemistry of materials and Ceramic Technologies), University of Bologna
- **From 2013** – Periodical scientific training about nanotechnology at ISTECCNR
Prot.CNR-ISTEC protocol N.0000126 – date: 25/01/2019
Prot.CNR-ISTEC protocol N.0000863 – date: 13/05/2018
Prot.CNR-ISTEC protocol N.0000558 – date: 05/03/2015
Prot.CNR-ISTEC protocol N.0001884 – date: 24/07/2014
Prot.CNR-ISTEC protocol N.0001330 – date: 03/06/2014
Prot.CNR-ISTEC protocol N.0001135 – date: 13/05/2014
Prot.CNR-ISTEC protocol N.0001054 – date: 27/04/2014
Prot.CNR-ISTEC protocol N.0000792 – date: 02/04/2014

TECHNICAL SKILLS AND COMPETENCES

- Knowledge about the consultation of international databases (SciFinder, Crossfire, Reaxys) and chemical and scientific literature,
- Skills in the use of common laboratory instruments,
- Theoretical and technical skills on the use of the main analytical instrumentation such as **IR spectroscopy, X-ray diffraction (XRD), UV-vis spectrophotometry, DLS and ELS techniques, microscopy (TEM, SEM, FE-SEM and STEM), thermal analysis (TGA and DSC)** and skills in the interpretation of their results,
- Good knowledge and use of software Windows Operating System.
- From January, 2018 appointment as **Service Manager** for the management of the **chemical products' deposit**
CNR-ISTEC protocol N. 0000131 – date: 23/01/2018
CNR-ISTEC protocol N. 0000830 – date: 10/04/2018
- From January, 2019 appointment as **Service Manager** of Nanotechnologies **Laboratory**
CNR-ISTEC protocol N. 0000171 – date: 30/01/2019

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE

ITALIAN

OTHER LANGUAGE

ENGLISH

- Reading skills
- Writing skills
- Verbal skills

GOOD
GOOD
GOOD

SOCIAL SKILLS AND COMPETENCES

- Good predisposition to interpersonal relations,
- Aptitude for team working,

- Coordination of small working groups.
- ORGANISATIONAL SKILLS
AND COMPETENCES
- Ability to plan and organize an activity of scientific research,
 - Ability to work on projects or goals.
- OTHER SKILLS
AND COMPETENCES
- Since 1998 volleyball player at a competitive and amateur level,
 - Passionate about cinema and reading,
 - Voluntary activities for "Pro Rwanda" Association.
- DRIVING LICENCE(S) Driving License "B"

Consapevole che, ai sensi dell'art. 76 del d.P.R. 445/2000, le dichiarazioni mendaci, la falsità negli atti e l'uso di atti falsi sono punite ai sensi del Codice penale e delle leggi speciali vigenti in materia, dichiara sotto la propria responsabilità che quanto dichiarato nel seguente curriculum Vitae et Studiorum corrisponde a verità.

Faenza, 30/03/2020

Simona Ortelli
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