

CURRICULUM VITAE

Personal information

Born in Lecce (Italy) on 15th January 1980

Nationality: Italian

Professional Address: National Research Council (CNR), Institute for Physical and Chemical Processes (IPCF), U.O.S of Bari c/o Chemistry Department, Via Orabona 4, I-70126, Bari Italy
tel: +390805442027, fax: +390805442128, mail:c.ingrosso@ba.ipcf.cnr.it

Current position

Since November, 2011 she is Permanent Scientist at National Research Council (CNR), Institute for Physical and Chemical Processes (IPCF), U.O.S of Bari, c/o Chemistry Department, Via Orabona 4, I-70126, Bari, Italy

Education

23 July 2004, **Degree in Chemistry** 110/110 cum laude with the thesis on "Preparazione e Caratterizzazione di strutture ibride semiconduttore nanocristallino/ftalocianina"

28 March 2008 **PhD in Chemistry** with a thesis on "Hybrid organic/inorganic materials based on colloidal nanocrystals towards sensing applications" (2004-2007)

Professional experience

November 2011 - March 2010: Scientist (temporary position) (DPR 171/91) at CNR Institute of Microelectronic and Microsystems (CNR-IMM) U.O.S of Lecce. Research Activity: methods for preparation and characterization of nanostructured oxides for sensors and sensor arrays for the detection of volatile compounds.

May 2008 - March 2010: Post-PhD Post-doctoral Research Fellowship at Department of Chemistry of University of Bari, (co-funded by CNR-IPCF, Bari). Research activity: design, synthesis and characterization of colloidal nanocrystals (NCs) (semiconducting oxides and II-VI semiconductors); preparation and characterization of hybrid materials based on colloidal NCs and functional polymers, ionic liquids or phthalocyanines for sensing and optoelectronic applications.

February 4- April 4, 2008: Post-doctoral Research Fellowship, at CNR-IPCF U.O.S of Bari. Research activity: design, synthesis and characterization of semiconducting colloidal NCs and their immobilization on substrates for photocatalytic processes.

December 2004 –February 2005: Graduated Research Fellowship. Research activity: design, synthesis and characterization of semiconducting colloidal NCs and their incorporation in polymers for the preparation of thin films for vapour and gas sensing.

Scientific activity

- Synthesis of nanoparticles (NPs) and nanocrystals (NCs) (Au NPs, TiO₂ NCs as nanorods and nanodots, CdS NCs, CdSe@ZnS NCs-core shell, PbS, ZnO, Fe₂O₃ NCs, TiO₂/Fe₂O₃ NCs), also in quantum confinement regime, by colloidal approaches.
- Synthesis and characterization of hybrid nanocomposite materials based on carbon nanotubes and graphene, also surface functionalized with organic linkers, and colloidal NPs (Au NPs, Ag NPs, PbS NCs, TiO₂ NCs) for photodetection, photovoltaic, photocatalysis, biomedicine and for (bio)sensing.
- Characterization of colloidal NCs and NPs and of hybrid nanocomposites by UV-vis-NIR absorption, luminescence and FTIR spectroscopy), structural (TEM) and morphological (AFM, SEM) techniques.
- Functionalization of NP surface by organic surface chemistry exchange procedures for modifying the surface chemistry for incorporation in polymers, immobilization onto surfaces and surface decoration of carbonaceous nanomaterials (carbon nanotubes, graphenoid materials (GO,RGO) and CVD graphene).

Visiting research appointments

2-6 December 2019. Invited Visiting Researcher at University of California, San Diego in La Jolla, California, USA, in the group of Prof. Oscar Vasquez Mena in the frame of the activity of the Bilateral United States of America - Italy "Projects of major importance", launched by Italian Ministry for Foreign Affairs and International Cooperation (MAECI) and funding, for 2019, the Italian partner National Research Council (CNR) on the topic "Multi-stacked intercalating hybrid PbS quantum dot film/graphene architectures for enhanced photodetectors" (Prot. nr. MAE0065807), under the scientific responsibility of Prof. Oscar Vazquez Mena for USA and Prof. Maria Lucia Curri for Italy.

27-31 October 2019. Visiting Researcher at the Institute of Electrochemistry and Energy Systems of Bulgarian Academy of Science (IEES-BAS), Sofia, Bulgaria in the group of Prof.ssa Tamara Petkova, because Scientific Responsible, for CNR-IPCF, of the Bilateral Project 'Ti-based Nanostructured Oxides and Nanocomposites for Photo-assisted Electrolysis' (TOPSIS)' (n.58141 del 26/9/2012).

December 10-19, 2009: Visiting Researcher at Microelectronics Institute-Centro Nacional de Microelectrónica del Consejo Superior de Investigaciones Científicas (IMB-CNM-CSIC), Barcelona, Spain in the group of Prof. Francesc Perez-Murano. Research activity: design, synthesis, characterization and incorporation of single colloidal oxide semiconducting NCs and Au nanoparticles in polymer films for their interfacing and creation of electric contacts.

January 29 - July 16, 2009: Visiting Postdoctoral Fellow Researcher at Department of Micro- and Nanotechnology, Technical University of Denmark (NanoDTU), in the group of Prof.ssa Anja Boisen. Research activity: design, synthesis, characterization and incorporation of colloidal Au nanoparticles in SU8 polymer, for the fabrication of actuators; design, synthesis and characterization of colloidal oxide semiconducting NCs and their immobilization on arrays of microcantilever sensors on SU8 to integrate in electronic noses for vapour and liquid sensing;

June 16 - July 24, 2008: Visiting Researcher at Laboratoire de Microsystèmes, Institute de Microélectronique et Microsystèmes 1 (LMIS1), École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland, in the group of Prof. Juergen Brugger. Research Activity: design,

synthesis and characterization of IIVI semiconducting colloidal NCs and incorporation in semiconducting polymers for the fabrication of optoelectronic microcomponents by ink-jet printing;

May 20 – June 1th 2007: Visiting Researcher at Laboratoire de Microsystèmes, Institute de Microélectronique et Microsystèmes 1 (LMIS1), École Polytechnique Fédérale de Lausanne (EPFL), Switzerland in the group of Prof. Juergen Brugger. Research Activity: design, synthesis, characterization and incorporation of II-VI semiconducting colloidal NCs in polymers for the fabrication of microcomponents by ink-jet printing and UV-lithography for sensing and optoelectronic applications.

Scientific project management

January 2021-December 2022: Scientific Responsible for the CNR-IPCF Unit of the joint project “Analytical Toolkit for Monitoring Water Pollution” (TOOL) in the frame of the Cooperative Programme between Ministry of Higher Education and Scientific Research of Tunisia (MHESR) and CNR Italy. Research activity: design, synthesis and characterization of hybrid nanocomposite materials based on graphene and inorganic nanoparticles for sensing of hazardous water pollutants. CNR-IPCF Bari funding 12.000,00 Euro.

July 2020-June 2022: Scientific Responsible for the CNR-IPCF Unit of the joint project “Tessuti in nanocompositi a base di grafene e sensori wireless Indossabili a Supporto del comfort termico” (TRANSISTOR) funded by Istituto Nazionale Assicurazione Infortuni sul Lavoro (INAIL). Coordinator: Prof.ssa Carola Corcione. Research activity: synthesis of a hybrid nanocomposite materials based on Graphene and metal nanoparticles (NPs) to integrate in wearable wireless sensors, for monitoring physiological parameters and granting thermal comfort of workers. CNR-IPCF Bari funding 48.384,4 Euro.

October 2019- September 2022: Scientific Responsible for the CNR-IPCF Unit of the joint project “New-Generation Nanostructured Fluorinated Materials for 19F-MRI and their Biophysicochemical Interactions (NiFTy)” Prot. 2017MYBTXC. Coordinator: Prof. Pierangelo Metrangolo. Research activity: synthesis of a new generation of tracers and theranostic nanosystems based on plasmonic NCs, functionalized by multibranched fluorinated ligands for 19F-Magnetic Resonance Imaging (MRI), investigation of their interactions with cell membrane lipids by biosensors and theoretical modelling. CNR-IPCF Bari funding 110.000,00 Euro.

January 2019-December 2021: Scientific Responsible for the CNR-IPCF Unit of the joint project ‘Ti-based Nanostructured Oxides and Nanocomposites for Photo-assisted Electrolysis’ in the frame of the Cooperative Programme between Bulgarian Academy of Sciences and CNR (Italy). Research activity: design and synthesis of nanocomposite photocatalysts based on Ti nano-oxides and metals and Ti nano-oxides and graphene, for photo-assisted water splitting. CNR-IPCF Bari funding 12.000,00 Euro.

March 2013-February 2016: Scientific Responsible for the CNR-IPCF Unit of the National Research Project PRIN 2012 “Diagnostic nanostructured devices for monitoring of biomarkers in cancer” prot. 20128ZZS2H. Coordinator: Prof.ssa Ilaria Palchetti. Research activity: synthesis and characterization of nanocomposite materials based on colloidal semiconducting NCs and i) metal nanoparticles, ii) carbon nanotubes and iii) graphene, and of hybrids made of graphene or carbon nanotubes functionalized with biomolecules, for (photo)electrochemical detection of cancer biomarkers. CNR-IPCF Bari Funding 79.898,45 Euro.

Scientific project participation

September 2019 -March 2023: participation to the Collaborative PRIN project- Bando 2017 'Carbon NanoDots for Light-emitting materials and Lasing applications' (CANDL2) (Prot.2017W75RAE) funded by MIUR. Scientific Responsible: Dr. Marinella Striccoli. Research activity: Synthesis of C dots and incorporation in polymers for the preparation of nanocomposites. Funding: 168.050,00 Euro.

April 2020 - October 2022: participation to Collaborative project PON BEST-4U 'Tecnologia per celle solari bifacciali ad alta Efficienza a 4 terminali per 'utility scale' (ARS01_00519) funded by MIUR-PON R&I 2014-2020 e FSC. Scientific Responsible: Dr. Marinella Striccoli. Research activity: synthesis and investigation of nanostructured materials for photovoltaic applications, integrating perovskites and dye sensitizers.

November 2018- May 2021: participation to the Collaborative project 'Tecnologie e processi per l'Abbattimento di inquinanti e la bonifica di siti contaminati con Recupero di materie prime e produzione di energia Totally green (TARANTO)' (ARS01_00637). Scientific Responsible: Prof. Angela Agostiano. Research activity: synthesis and characterization of nanostructured photocatalysts for removal of pollution from water. Development of immobilization techniques procedures of photocatalytic materials on suited solid supports.

November 2017- March 2021: participation to the Collaborative project 'Coherent Optical Parallel Computing (COPAC)' H2020-FETOPEN-1-2016-2017 (n. 766563). Scientific Responsible: Dr. Marinella Striccoli. Research activity: synthesis and characterization of C dots and preparation of dimer structures in solution and solid state. Funding: 341 000,00 Euro.

January 2019-December 2021: participation to the Collaborative Project 'Multi-stacked intercalating hybrid PbS quantum dot film/graphene architectures for enhanced photodetectors' funded by MAECI. Coordinator Prof. M. L. Curri, Università di Bari. Research activity: synthesis and surface functionalization of PbS NCs, surface decoration of CVD-graphene with PbS NCs for photodetector applications. Funding: 20.700,00 Euro.

February 2017- February 2020: Participation to the Collaborative PRIN Project 2015 funded by MIUR 'Towards quantum-photovoltaics: ultrafast energy and charge transport in hybrid nanomaterials' (prot. 2015XBZ5YA). Scientific Responsible: Dr. Marinella Striccoli. Research activity: preparation of hybrid materials based on quantum dots and organic molecules for energy and charge transfer processes. Funding: 40.166,00 Euro.

July 2008- January 2019. Participation to the Collaborative Regional Project 'FOtocalizzatori NanosTrutturati e RAdiazioNe UV per un'Acqua più PULita (FONTANAPULIA)' (WOBV6K5). Scientific Responsible: Dr. Roberto Comparelli. Research activity: Synthesis and characterization of UV-light photoactive nanostructured materials for degradation of pollutants in water. Funding: 140.816,49 Euro.

January 2016-January 2018. Participation to the bilateral project 'Polymer Nanocomposites based on Carbon Dots (CDs): investigations towards energy storage and applications' (Amm. Centrale CNR n. 2447). Scientific Responsible: Dr. Marinella Striccoli. Research activity: preparation and characterization of composites based on C dots and polymers. Funding: 4000,00 Euro.

November 2015-2017: Participation to the regional project 'NANOtocalizzatori per un'Atmosfera più PULita' (NANOAPULIA). Scientific Responsible: Dr. Roberto Comparelli.

Research activity: Synthesis and characterization of UV-light photoactive nanostructured materials based on TiO₂ for degradation of pollutants in air. Funding: 276.095,53 Euro

December 2012-November 2014: participation to 7 FP Collaborative European Project NMP 2012.2.2.2-6 LIMPID (n. 310177) Nanocomposite Materials for Photocatalytic Degradation of Pollutants Coordinator Dr. M.L. Curri (CNR Italy) Research activity: synthesis and characterization of nanocomposite materials based on II-VI semiconducting NCs and ionic liquids, polymeric ionic liquids for preparing a new generation of hybrid materials to integrate in photovoltaic devices, capacitors and lithium batteries. CNR-IPCF Bari funding 539.089,00 Euro.

October 2009-September 2013: participation to FP7 EU ORION Ordered Organic-Inorganic Hybrids Using Ionic Liquids for Emerging Applications EU FP7 NMP-2008-Large-2 NMP-2008-2.4-1 Inorganic-Organic Hybrid Materials. Coordinator Dr. David Mecerreyes (CIDETEC Spain), Scientific Responsible for IPCF-CNR: Dr. Marinella Striccoli. Research activity: design, synthesis and characterization and surface functionalization of II-VI semiconducting colloidal NCs and semiconducting oxide NCs and their incorporation in ionic liquids for fabricating novel hybrid materials for photoconversion. CNR-IPCF Bari funding 416.900,00 Euro.

2009 - 2010: participation to NANOPLATFORM Interfacing single nanoparticles embedded in ultra thin polymers layers Bilateral Program Italy-Spain in the frame of a cooperative agreement between CNR-IPCF e CSIC (Spain). Scientific Responsible for IPCF-CNR: Dott.ssa M. L. Curri. Research Activity: design, synthesis, characterization and incorporation of single colloidal NC oxides and Au nanoparticles in polymer films for their interfacing and creation of electric contacts. CNR-IPCF Bari funding 10.000,00 Euro.

February 2005 - April 2008: participation to FP6 EU STREP NOVOPOLY Novel functional polymer materials for MEMS and NEMS applications (contr. n. STRP 013619) 6 FP EU Coordinator Prof. Francesc Perez-Murano (CNM CSIC Spain). Scientific Responsible for IPCF-CNR: Dott.ssa M. L. Curri. Research Activity: design, synthesis, characterization and surface functionalization of semiconducting oxide NCs and II-VI semiconducting NCs for the modification of functional polymers for the fabrication of microstructured devices. CNR-IPCF Bari funding 262.015,00 Euro.

Present collaborations

Prof. Pierangelo Metrangolo, Dipartimento di Chimica, Materiali e Ingegneria Chimica "Giulio Natta", Politecnico di Milano for the synthesis of a new generation of tracers and theranostic nanosystems based on plasmonic NCs, functionalized by multibranched fluorinated ligands for 19F-Magnetic Resonance Imaging (MRI).

Prof. Fabio Biscarini, Dipartimento di Scienze della Vita, Università degli Studi di Modena e Reggio Emilia, for the investigation of the interactions of tracers and theranostic nanosystems based on plasmonic NCs, functionalized by multibranched fluorinated ligands for 19F-Magnetic Resonance Imaging (MRI) with cell membrane lipids by biosensors.

Prof. Francesco Zerbetto, Dipartimento di Chimica "Giacomo Ciamician", Università di Bologna, for the investigation of the interactions of tracers and theranostic nanosystems based on plasmonic NCs, functionalized by multibranched fluorinated ligands for 19F-Magnetic Resonance Imaging (MRI) with cell membrane lipids by theoretical modelling.

Prof.ssa Lucia Pasquato, Department of Chemical and Pharmaceutical Sciences, Università degli Studi di Trieste, for the synthesis of a new generation of tracers and theranostic

nanosystems based on plasmonic NCs, functionalized by multibranched fluorinated ligands for 19F-Magnetic Resonance Imaging (MRI).

Prof. Tamara Petkova, Solid state electrolytes department Institute of electrochemistry and energy systems Bulgarian Academy of sciences, for the synthesis of photoanodes based on Reduced Graphene Oxide and TiO₂ NCs to integration in fuel cells.

Prof. Oscar Vazquez Mena, Jacobs School of Engineering – NanoEngineering University of California, San Diego, California for the fabrication of photodetectors based on multilayers of CVD graphene and PbS NCs.

Prof. Ilaria Palchetti, Department of Chemistry "Ugo Schiff", Sesto Fiorentino, for the preparation of hybrid materials based on carbon based nanostructures (carbon nanotubes, graphene) and colloidal NCs or biomolecules for the (photo)electrochemical detection of cancer biomarkers.

Prof. Ludovico Valli, Department of Innovation Engineering of University of Salento for the characterization and deposition of phthalocyanine sensitizer molecules.

Prof. Luigi Falciola, University of Milan, Department of Chemistry, for the preparation of hybrid materials based on carbon based nanostructures (carbon nanotubes, graphene) and colloidal NCs or biomolecules for the (photo)electrochemical detection of cancer biomarkers.

Past collaborations

-Prof. Angela Corcelli of University of Bari, Dep. Scienze Mediche di Base, Neuroscienze ed Organi di Senso, for the preparation of hybrid materials made of carbon nanotubes and biomolecules or proteins.

-Prof. Mariaenrica Frigione of Dep. of Innovation Engineering of University of Salento, Lecce for the preparation and characterization of superhydrophobic and photocatalytic coatings based on hybrid photostructurable polymers and colloidal oxide NCs for the preparation of hydrophobic and self-cleaning coatings. The collaboration was carried out within the frame of LIMPID 7 FP EU project.

-Prof. Dr. Klaus Rose of Material Chemistry Hybrid Coatings & Coating Technology Fraunhofer-Institut Silicatforschung of Neunerplatz, Wuerzburg for the preparation of photocatalytic coatings made of ORMOCERS and colloidal oxide NCs. The collaboration was carried out within the frame of LIMPID 7 FP EU project.

-Prof. Francesc Perez-Murano of Barcelona Microelectronics Institute- Centro Nacional de Microelectrónica del Consejo Superior de Investigaciones Científicas (IMB-CNM-CSIC), Campus UAB, Bellaterra, Spain for the preparation of nanocomposites as structural materials for the fabrication of AFM probes and for creation of electric contacts. The collaboration was carried out within the frame of NOVOPOLY FP7 EU project and of NANOPLATFORM Italy Spain Bilateral project.

Prof. Jürgen Brugger of Laboratoire de Microsystèmes, Institute de Microélectronique et Microsystèmes 1 (LMIS1), École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland for inkjet printing of nanocomposites based on polymers and colloidal NCs and UV-lithography fabrication of microcomponets on photostructurable polymers and colloidal NCs. The collaboration was carried out within the frame of NOVOPOLY FP7 EU project.

Prof. Anja Boisen of Department of Micro- and Nanotechnology, Technical University of Denmark (NanoDTU), Denmark for the fabrication of actuators made of nanocomposites based on SU8 and Au nanoparticles and of arrays of microcantilever sensors made of SU8 surface functionalized with colloidal NCs. The collaboration was carried out within the frame of NOVOPOLY FP7 EU project.

Prof. Pietro Favia of Department of Chemistry of University of Bari for the AFM characterization of nanostructured films fabricated by plasma processes.

Dr. Marco Anni of Dep. of Innovation Engineering of University of Salento, Lecce, and with **Dr. M. Lomascolo** of CNR-IMM U.O.S. of Lecce for the synthesis of colloidal NCs to incorporate in semiconducting polymers for photovoltaic applications.

Prof. Valentini of Dep. of Physic of University of Bari for the AFM characterization of thin films applied as photocathods.

Prof. Giovanni Natile of Dip. Di Farmacia-Scienza del Farmaco, of University of Bari, for which she has performed an extensive AFM investigation of the aggregation behavior of the protein Ubiquitin in diverse environmental conditions, since the aggregation of such protein is responsible for the occurrence of several neurodegenerative disorders including Parkinson's, Alzheimer's, amyotrophic lateral sclerosis.

Dr. Pietro Siciliano of CNR Institute of Microelectronic and Microsystems (CNR-IMM) U.O.S of Lecce, for the preparation of a biomimetic systems based on Single Walled Carbon Nanotubes (SWNTs) and a purple cell membrane protein, namely the Bacteriorhodopsin mutant D96N for detection of ammonia and anesthetics and for the design and optimization of an ink-jet printer from Microdrop Technology Company.

Teaching at Facoltà di Scienze MM. FF. NN. University of Bari

Co-rapporteur of Master Thesis in Scienza e Tecnologia dei Materiali, student Alessia Disha (a.a. 2021-2022), title: Preparation and characterization of hybrid nanocomposites based on inorganic nanoparticle decorated graphene for antimicrobial application. Rapporteurs: Prof.ssa M.L. Curri, Dr.ssa Chiara Ingrosso.

Co-rapporteur of Bachelor Thesis in Scienze Chimiche, student Alessio Massaro (a.a. 2019-2020) title: 'Sintesi e Caratterizzazione di Materiali Nanocompositi Ibridi a base di Grafene Ossido Ridotto e Nanocristalli Colloidal di Ossido di Titanio'. Rapporteurs: Dr.ssa Chiara Ingrosso, Prof.ssa Angela Agostiano.

Co-rapporteur of Bachelor Thesis in Chimica, Scuola di Scienze Matematiche Fisiche e Naturali dell'Università degli Studi di Firenze, student Emma Palazzini (a.a. 2019-2020), title: 'Caratterizzazione di eterostrutture TiO₂/Grafene per lo sviluppo di sensori fotoelettrochimici'. Rapporteurs: Dr.ssa Chiara Ingrosso, Dr.ssa Francesca Bettazzi.

Co-rapporteur of Bachelor Thesis in Scienza e Tecnologia dei Materiali, student Alessia Disha (a.a. 2016-2017), title: Sintesi e caratterizzazione di ibridi plasmonici a base di grafene e nanoparticelle colloidali di oro. Rapporteurs: Dr.ssa Chiara Ingrosso, Dr.ssa E. Fanizza.

Co-rapporteur of Bachelor Thesis in Scienze Chimiche, student Benedetta Fanelli (a.a. 2016-2017), title: "Preparazione e caratterizzazione di materiali plasmonici ibridi a base di grafene e nanoparticelle colloidali per applicazioni biomediche". Rapporteur: Dr.ssa Chiara Ingrosso, Dr.ssa Elisabetta Fanizza

Co-rapporteur of Master Thesis in Scienza e Tecnologia dei Materiali, student Vitantonio Valenzano (a.a. 2015-2016), title: Sintesi e Caratterizzazione di Materiali Ibridi a base di Reduced Graphene Oxide e Nanocristalli colloidali di PbS. Rapporteurs: Prof.ssa A. Agostiano, Dr.ssa Chiara Ingrosso.

Co-tutor of the PhD Thesis in Chimica dei Materiali Innovativi of Dr.ssa Marta Garzia Trulli (a.a. 2014-2017), XIX Ciclo, title: Plasma Surface Modifications of powders and porous materials. Rapporteurs: Prof. P. Favia, Dr.ssa E. Sardella.

Co-rapporteur of Bachelor Thesis in Scienza e Tecnologia dei Materiali, student Vitantonio Valenzano, (a.a. 2013-2014), title: "Funzionalizzazione di nanoparticelle di TiO₂ per

incorporazione in polimeri per applicazioni di interesse ambientale". Rapporteur: Dr.ssa Chiara Ingrosso, Prof.ssa Angela Agostiano

Co-rapporteur of Bachelor Thesis in Chimica, student Giulia Siciliano (a.a. 2013-2014) title: "Materiali ibridi a base di nanocristalli colloidali di PbS e grafene per applicazioni optoelettroniche". Rapporteur: Dr.ssa Chiara Ingrosso, Prof.ssa Angela Agostiano

Co-rapporteur of Bachelor Thesis in Chimica, student Vincenzo Villone, (a.a. 2011-2012), title: "Assembly di nanoparticelle colloidali con copolimeri a blocchi: fabbricazione e caratterizzazione". Rapporteurs: Dr.ssa Chiara Ingrosso, Prof.ssa Angela Agostiano

Co-rapporteur of Bachelor Thesis in Chimica, student Alessandro Montrone, (a.a. 2011-2012), title: "Funzionalizzazione Chimica superficiale di nanocristalli colloidali per applicazioni optoelettroniche". Rapporteurs: Dr.ssa Chiara Ingrosso, Prof.ssa Angela Agostiano

Co-tutor of the PhD Thesis in Chimica dei Materiali Innovativi of Dr. Enrico Binetti, title: "Materiale nanostrutturati per la conversione dell'energia, (a.a. 2009-2012), XXIV Ciclo; Rapporteurs: Prof.ssa Angela Agostiano.

Co-rapporteur of Master Thesis in Scienza e Tecnologia dei Materiali, student Enrico Binetti, (a.a. 2007-2008), title: "Nanocompositi ibridi basati su nanocristalli colloidali e polimeri organici per ink-jet printing". Rapporteurs: Dr.ssa Maria Lucia Curri, Dr.ssa Chiara Ingrosso.

Awards and honors

-**Session Chair person to Eurosensors 2016**, September 4-7, Budapest, Hungary. "Colloidal NC modified graphene based hybrid materials for electroanalytical sensing applications".

-The paper "Nanocomposite materials for photocatalytic degradation of pollutants", by Petronella, F., Truppi, A., Ingrosso, C., Placido, T., Striccoli, M., Curri, M.L., Agostiano, A. and Comparelli, R. *Catal. Today*, **2017**, *281, Part 1*, 85-100 has been selected among the most "Highly cited paper" by Web of Science, "as of May/June 2017, this **highly cited paper** received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year.

-**Inside Front Cover Page** of Chemm. Comm. 2013, 49, 6941.

-**Inside Front Cover Page** of Nanoscale 2011, 3, 4632.

-**Cover Page** of Adv. Funct. Mater. 2007, 17, 1999

Invited Talks

-“Colloidal Nanoparticles decorated Graphene based Hybrid Nanocomposites for Applications” **4th International Symposium on Nanoparticles and Nanomaterials and Applications – ISN2A 2020**, January 20– 23, 2020, Costa da Caparica, Portugal.

- ‘Innovative Nanocomposites based on Colloidal Nanoparticles for the detection of CBRN agents’ at **NATO ASI School related to Nanoscience and Nanotechnology in security and protection against CBRN threats**, September 12-20, 2019, Sozopol, Bulgaria.

-“Colloidal NC modified graphene based hybrid materials for electroanalytical sensing applications” (**Session Chair Person**), **Eurosensors**, September 4-7, 2016, Budapest, Hungary.

-“Graphene decorated with colloidal nanoparticles: new opportunities for functional hybrid materials” **Energy Materials and Nanotechnology**, June 21-24, 2016, Prague, Czech Republic.

-“Photoactive hybrid material based on pyrene functionalized colloidal nanocrystals and CVD monolayer graphene”, **Nanotechnology and Materials Science Conference**, April 13-15, 2015 Dubai, UAE.

Other scientific activities

- **President of the Commission** for the public selection of a research fellowship for the activity in the frame of the project “Tessuti in nanocompositi a base di grafene e sensori wireless Indossabili a Supporto del comfort termico” (TRANSISTOR) with theme “Progettazione, sintesi e caratterizzazione di nanocompositi ibridi a base di nanoparticelle colloidali e grafene per applicazioni sensoristiche” (Bando IPCF-BS-001-2020-BA del 18.12.2020 - Prot. AMMCEN n. 0074705 G.U. n.98).

-**President of the Commission** for the public selection of a research fellowship for the activity in the frame of the PRIN2017 project “New-Generation Nanostructured Fluorinated Materials for 19F-MRI and their Biophysicochemical Interactions (NiFTy)” (Prot. 2017MYBTXC) with theme “Ingegnerizzazione superficiale di nanoparticelle colloidali e loro caratterizzazione chimico-fisica per applicazioni di interesse biomedico” (Bando IPCF-AR-001-2020-BA del 15.09.2020 – Prot. AMMCEN n. 0056546).

-**Member of the Commission** for the public selection of a research fellowship for the activity in the frame of the project ‘ENERGIE PER L’AMBIENTE – PON TARANTO’ with theme ‘Sintesi, caratterizzazione e funzionalizzazione di materiali nanostrutturati fotoattivi nell’UV e nel visibile per l’abbattimento di inquinanti organici in matrici acquose e la preparazione di coating autopulenti e idrorepellenti (Bando n. IPCF-380.1)

-**President of the Commission** for the public selection of a research fellowship for the activity in the frame of the PRIN2012 project “Diagnostic nanostructured devices for monitoring of biomarkers in cancer” (prot 20128ZZ52H) with theme “Photocatalytic study of nanocomposite materials based on semiconducting nanoparticles for sensor applications” (Bando n. IPCF-002-2016-BA del 22/02/2016 prot. 675)

-**President of the Commission** for the public selection of a research fellowship for the activity in the frame of the PRIN2012 project “Diagnostic nanostructured devices for monitoring of biomarkers in cancer” (prot 20128ZZ52H) with theme “Study of nanocomposite film based on colloidal nanocrystal semiconductors for sensing applications” (Bando n. IPCF-001-2016-BA del 22/02/2016 prot. 674) +

-**Scientific Committee** of “The First International Meeting on Advanced Dielectric Materials and Applications (IMADMA 2016)” Kenitra - Rabat, Morocco, May 4-6, 2016

-**Scientific Committee** of “Third International Symposium On Dielectric Materials And Applications (ISyDMA’2018)” Beni Mellal, Morocco, 17-20 April, 2018.

Reviewer for Micro & Nano Letters, Nanoscale, The Journal of Physical Chemistry, Journal of Nanomaterials, Journal of Materials Chemistry C, Crystals, Langmuir, RSC Advances, Scientific Reports, Chem. Materials, ACS Applied Materials & Interfaces.

Expert Evaluator and Rapporteur of research proposals submitted to

- **European Commission** for the call H2020-MSCA-IF-2018, H2020-MSCA-IF-2019 and H2020-MSCA-IF-2020.

Topic Editor of Molecules Journal 2021-2022, Impact factor: 4.411

Scientific publications

Publications on peer-reviewed journals

1. S. Lobasso, P. Tanzarella, F. Mannavola, M. Tucci, F. Silvestris, C. Felici, **C. Ingrosso**, A. Corcelli, P. Lopalco, A lipidomic approach to identify potential biomarkers in exosomes from melanoma cells with different metastatic potential, *submitted to Frontiers in Physiology (under revision)*
2. S. Bettini, G. Bosco, S. Pald, R. Pagano, **C. Ingrosso**, L. Valli, G. Giancane, SiO₂ based hybrid nanostructures for simultaneous magnetic separation and SERS detection of aromatic organic contaminants in water, *submitted to ACS Sustainable Chemistry & Engineering Manuscript (under revision)*
3. S. Ahn, C. Ingrosso, A. Panniello, M. Striccoli, G. V. Bianco, A. Agostiano, G. Bruno, M. L. Curri, O. Vazquez Mena, π - π Interactions Mediated Pyrene based Ligands Enhanced Photoresponse in Hybrid Graphene/PbS Quantum Dots Photodetectors, *submitted to Advanced Energy Materials (under revision)*
4. Rosanna Pagano, Zois Syrgiannis, Simona Bettini, **Chiara Ingrosso**, Ludovico Valli, Gabriele Giancane and Maurizio Prato, Localized and surface plasmons coupling for ultra-sensitive dopamine detection by means of SPR based perylene bisimide/Au nanostructures thin film, *submitted to Advanced Materials Interfaces (under revision)*
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Contributions to National and International Conferences

- **Graphene, 26-29 October 2021, Grenoble, France.** 'Thermally Conductive Textiles impregnated with Hybrid Nanocomposites based on Ag Nanoparticles Decorated Reduced Graphene Oxide' (**POSTER**)
- **Micro and Nano Engineering Conference, 20-23 September 2021, Turin, Italy:**
 - π - π Interactions Mediated Pyrene based Ligand Enhanced Photoresponse in Hybrid Graphene/PbS Quantum Dots Photodetectors (**ORAL**)
 - NIR Responsive Capacitive Photocathodes based on PbS Nanocrystals Decorated Reduced Graphene Oxide (**POSTER**)
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- **XXVII Congresso Nazionale della Società Chimica Italiana (SCI) 2021, 14-23 September 2021,** Italy. 'Au nanoparticles densely decorated nanographene oxide hybrid platform for biomedical applications: insights into the synthesis mechanisms and citotoxicity evaluation' (Poster)
- **Graphene 2019, June 25-28, 2019 Rome (Italy).** "Nanocomposite based on reduced graphene oxide decorated with colloidal Au nanoparticles for electrochemical genosensors" (**ORAL**)

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- **Giornate dell'Elettrochimica Italiana (GEI 2016), Gargnano, Italy, 11-14 September 2016.** "(Photo)electrochemical characterization of TiO₂ Nanocrystals Decorated CVD Graphene based Hybrid" (POSTER)
- **21st Topical Meeting of the International Society of Electrochemistry, Szeged, Hungary, 23-26 April 2017.** "CVD graphene decorated with colloidal titanium oxide nanocrystals: (photo)electrochemical characterization and electroanalytical applications" (POSTER)
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- **XXVI Congresso della Società Chimica Italiana, 10-14 Settembre 2017, Paestum (SA).** "New Functional Hybrid Materials Based on Graphene Decorated with Colloidal Nanoparticles for sensor applications" (Selected Oral).
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- **IEEE 12th International Conference on Nano/Micro Engineered and Molecular Systems, NEMS 2017, Los Angeles; United States; 9 April.** "TiO₂ Nanocrystals Decorated CVD Graphene for Electroanalytical Sensing" (Poster).
- **XVI Congresso Nazionale Chimica dell'Ambiente e dei Beni Culturali Società Chimica Italiana Lecce 26-29 Giugno 2016.** "Photopolymerizable Nanocomposite based on Methacrylic siloxane Resin and TiO₂ Nanocrystals for Protection of Carbonate Stones (Selected Oral).
- **First International Symposium on Dielectric Materials and Applications May 4-6, 2016 Kenitra – Rabat Marocco.** "Photocurable Nanocomposite based on Methacrylic-Siloxane Resin and Organo-Functional Silane modified-TiO₂ Nanocrystals" (Selected Oral).
- **Graphita 2015, September 14-18, 2015, Bologna, Italy.** "Photoactive Hybrid Materials based on Colloidal Nanocrystals and CVD Monolayer Graphene" (Selected Oral).
- **Fourth International Conference on Multifunctional, Hybrid and Nanomaterials, March 9-13, 2015, Sitges (Barcelona), Spain.** "Photoactive hybrid material based on pyrene functionalized PbS nanocrystals decorating CVD monolayer graphene" (Selected Oral).
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- **4th IEEE International Workshop on advances in Sensors and Interfaces, June 28-29, 2011, Borgo Egnazia Savelletri di Fasano, Brindisi, Italy.** "Surface chemical functionalization of single walled carbon nanotubes by mutated Bacteriorhodopsin" (Selected Oral)

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- TCM 2010 3rd International Symposium on Transparent Conductive Materials**, October 17-21, 2010, Crete (Greece). "Surface functionalization of SU-8 based microcantilver sensors with oxide nanocrystals" (**Selected Oral**).
- 3rd EUChEMS Chemistry Congress**, Chemistry- the Creative Force, August 29 - September 2, 2010, Nürnberg, Germany. "Colloidal Nanocrystals Based Polymer Nanocomposites: Functional Materials for Microfabrication" (**Selected Oral**)
- MEMS WAVE 2010 & MEMS** in Italy, June 28 - July 2, Otranto (Lecce), Italy. "Chemical surface functionalization of SU-8 based microcantilevers with oxide nanocrystals" (**Selected Oral**).
- Times of Polymers and Composites**, June 20-23, 2010, Ischia, Italy
"Conjugated Polymer and luminescent collidal nanocrystals based nanocomposites for inkjet printing" (**Selected Oral**)
- XXIII Eurosensors Conference**, September 6-9, 2009, Lausanne, Switzerland. "Magnetic Nanocrystals Modified Epoxy Photoresist for Microfabrication of AFM probes" (**Selected Oral**)
- XXIII Eurosensors Conference**, September 6-9, 2009, Lausanne, Switzerland. "Covalent Surface Functionalization of Micro Mechanical Cantilever Sensors by Organic Capped TiO₂ and Fe₂O₃ Nanocrystals" (**Poster**).
- Workshop: Nanomaterials Production, Characterization and Industrial Applications**, December 3, 2008, Milan, Italy. "Nanocomposites based on colloidal nanocrystals: an original class of functional materials" (**Selected Oral**).
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- Micro and Nano Engineering (MNE) Conference**, September 15-18, 2008, Athens, Greece. "Ink-jet printing of highly luminescent nanocrystal/polymer nanocomposites for microstructure fabrication: effect of the ink parameters" (**Poster**).
- Micro and Nano Engineering (MNE) Conference**, September 15-18, 2008, Athens, Greece. "Nanocrystals Modified Epoxy Photoresist for Microfabrication of NEMS and MEMS" (**Poster**).
- Micro and Nano Engineering (MNE) Conference**, September 15-18, 2008, Athens, Greece. "Covalent Surface Functionalization of Micro Mechanical Cantilever by Organic Capped TiO₂ and γ -Fe₂O₃ Nanocrystals" (**Poster**).
- Nanostructures Self-assembly (NANO SEA)**, July 7-10, 2008, Rome, Italy. "Covalent Surface Functionalization of Micro Mechanical Cantilever Sensors by Organic Capped TiO₂ and γ -Fe₂O₃ Nanocrystals" (**Selected Oral**).
- Nanoscience with Nanocrystals NaNaX3**, May 21-23, 2008, Lecce, Italy. "Investigation of the molecular ordering of tetrakis-(isopropoxy-carbonyl)-copperphthalocyanine to target towards advanced technological applications" (**Selected Oral**).
- Nanoscience with Nanocrystals NaNaX3**, May 21-23, 2008, Lecce, Italy. "Colloidal nanocrystal based nanocomposites as novel functional materials" (**Poster**).
- XXXVI Congresso Nazionale di Chimica Fisica**, June 17-22, 2007, Gallipoli, Italy. "Characterization of nanocrystalline semiconductor/metal phthalocyanine hybrid junctions and application as photoconverter and sensor devices" (**Selected Oral**).
- XXXVI Congresso Nazionale di Chimica Fisica**, June 17-22, 2007, Gallipoli, Italy. "Luminescent nanocrystal modified epoxy photoresist for the fabrication of 3-D high aspect-ratio microstructures" (**Selected Oral**).

- 16th International Conference on Photochemical Conversion and Storage of Solar Energy (IPS-16)**, July 2-7, 2006, Uppsala, Sweden. "Spectroscopic and photoelectrochemical study of semiconductor nanocrystal/metal phthalocyanine hybrid junctions" (**Poster**).
- Joint Meeting Bioelectrochemistry**, June 19-24, 2005, Coimbra, Portugal. "Semiconductor Nanocrystals/Metal Phthalocyanines Hybrid Junctions: A Photoelectrochemical and Spectroscopic Investigation" (**Poster**).