

Maria Cristina Salvatici, Ph.D.

**Technologist Scientist at the National Research Council - CNR
Manager of the Electron Microscopy Facility of the Florence Research Area**

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EDUCATION

University of Siena (Italy) - Master Degree in Biology
(1999)

University of Siena (Italy) - Ph.D. in Morphological Science
(2005)

CURRENT POSITION

2019 Research/ Technologist
 Institute of Chemistry of Organometallic Compounds (ICCOM)-
 ElectronMicroscopy Centre (Ce.M.E.), National Research Council (CNR)

PREVIOUS POSITION

- 2007 Staff Researcher of the Electron Microscopy Facility of the Florence Research Area of the National Research Council (CNR) - Florence - Italy.

FELLOWSHIPS

2014 - 2018 Institute of Chemistry of Organometallic Compounds (ICCOM)- National Research Council (CNR)
 Italy- Professional research grant

2014 - 2010 Research grant- Institute of Chemistry of Organometallic Compounds (ICCOM)-National Research Council (CNR) Italy

2007-2010 Institute of Chemistry of Organometallic Compounds (ICCOM)- National Research Council (CNR)
 Italy- Professional research t

2000-2004 PhD Scholarship

TEACHING ACTIVITIES

2006-2008 Tutor for the course of "Methods of structural investigation", Master Degree in Environmental and Industrial Biotechnology; University of Florence.

2013-2022 Tutor for the exercises of the course of Nanosystems for Biotechnology (B016935), of the

Bachelor of Science in Biotechnology (School of Human Health Sciences, University of Florence).

ORGANIZATION OF SCIENTIFIC MEETINGS

- 2019 Organization of the Tescan Gaia 3 Electron Microscope Presentation/ Florence Research Area of the National Research Council (CNR) - Florence - Italy.
- 2016 Staff organization: The International Workshop on Ethanol Electro-oxidation-Decore. Florence- Italy
- 2009 Organization of Theoretical Seminar - The support of Electron Microscopy in the study of plant-environment relations. Florence - Italy.
- 2008 Organization of a Theoretical-Application Seminar entitled: CE.M.E.: Frontier electronmicroscopy at the service of industry. Florence - Italy.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- 2009 EMS (European Microscopy Society)
- 2009 SISM (Italian Society of Microscopic Sciences)

MAJOR COLLABORATIONS

- Department of Experimental and Clinical Medicine and ³Department of Health Sciences, University of Catanzaro "Magna Græcia", Campus Universitario "S. Venuta", Catanzaro, Italy.
- Department of Chemistry, University of Florence, Via Ugo Schiff 6, 50019 Sesto Fiorentino, Florence, Italy.
- Institute of BioEconomy, National Research Council (CNR), via Madonna del Piano 10, Sesto Fiorentino, 50019 Florence, Italy.
- Eye Clinic, Department of Neurosciences, Psychology, Pharmacology, and Child Health, University of Florence.

TEN YEAR TRACK RECORD

I am currently employed as a technologist at the Institute of Organometallic Chemistry (ICCOM) of the National research Council where my activity is mainly focused on the use of electron microscopes for imaging and microanalysis.

I have been working at ICCOM since 2007 in the last decade for the development of electron microscopy imaging techniques of samples from Life Science and Materials science, with a particular focus on the use of ultramicrotomy and cryoultramicrotomy for the preparation of ultrathin lamellas of polymer samples and biological samples.

I have developed a sound expertise in the use of scanning electron microscopy and environmental scanning electron microscopy for the characterization of samples in humid environment and for studying the evolution of the morphology of materials under heating up to 1500 C.

Meantime I have also worked with transmission electron microscopy, performing imaging, diffraction and microanalysis at the nanoscale. My expertises in TEM analysis covers the analysis of biological tissues and the characterization of nanostructured catalysts, with particular reference to catalysts for “Green Chemistry” and sustainability as well as on the characterization of electrocatalysts for the electrochemical energy conversion and storage.

Beside of the experimental activity, I have developed an expertise in the management of microscopes, with particular reference to scanning electron microscopes, transmission electron microscopes and focused ion beam systems. Beside of microscope management I have also been following the activities of the labs devoted to the preparation of the samples for the electron microscopy investigation. I have developed over the years, numerous collaborations with CNR researchers, Italian Universities and companies.

PUBLICATION

Total n. Publication: > 40

H-index 15

PRINCIPAL PAPERS

- Characterization and refinement of zein-based gels. Agnese Gagliardia , Francesca Froiio, Maria Cristina Salvatici , Donatella Paolino, Massimo Fresta, Donato Cosco . Food Hydrocolloids, 2019. 101(2):105555. IF 9,14.

-When Sustainable Nanochemistry Meets Agriculture: Lignin Nanocapsules for Bioactive Compound Delivery to Plantlets. Sara Falsini, Ilaria Clemente, Alessio Papini, Corrado Tani, Silvia Schiff, Maria Cristina Salvatici, Raffaella Petruccelli, Carla Benelli, Cristiana Giordano, Cristina Gonnelli, Sandra Ristori. ACS Sustainable Chemistry & Engineering 2019- 7, 24, 19935–19942. IF 7,63.

-Phospholipid/zein hybrid nanoparticles as promising carriers for the protection and delivery of all-trans retinoic acid. Agnese Gagliardi, Silvia Voci, Elena Giuliano, Maria C Salvatici, Marilena Celano, Massimo Fresta, Donato Cosco,. Materials Science & Engineering C 2021 in press. IF 7,32.

-Green and cost-effective synthesis of copper nanoparticles by extracts of non-edible and waste plant materials from Vaccinium species: Characterization and antimicrobial activity. Emilia Benassai, Massimo Del Bubba, Claudia Ancillotti, Ilaria Colzi, Cristina Gonnelli , Nicola Calisi, Maria Cristina Salvatici, Enrico Casalone . Materials Science and Engineering: C Volume 119, February 2021, 111453-IF 7,32.

-Brij-stabilized zein nanoparticles as potential drug carriers. Agnese Gagliardia, Silvia Voci, Maria Cristina Salvatici , Massimo Fresta, Donato Cosco. Colloids and Surfaces B: Biointerfaces. Volume 201, May 2021, 111647. IF- 5,26.

- Sclareol-loaded hyaluronan-coated PLGA nanoparticles: Physico-chemical properties and in vitro anticancer features. Cosco Donato; Mare Rosario; Paolino Donatella; Salvatici Maria Cristina; Cilurzo Felisa; Fresta Massimo. International Journal of Biological Macromolecules, 2019 -Volume 132, 1 July 2019, Pages 550-557. IF 5,16.

- Development of polyoxyethylene (2) oleyl ether-gliadin nanoparticles: Characterization and in vitro

cytotoxicity. Silvia Voci, Agnese Gagliardi , Maria Cristina Salvatici , Massimo Fresta, Donato Cosco. *European Journal of Pharmaceutical Sciences*, 2021. Volume 162, 1 July 2021, 105849. IF 4,38.

- Development and Percutaneous Permeation Study of Escinosomes, Escin-Based Nanovesicles Loaded with Berberine Chloride. Giulia Vanti, Daniele Bani, Maria Cristina Salvatici, Maria Camilla Bergonzi, Anna Rita Bilia. *Pharmaceutics*, 2019. IF 4.42

- Comparison of Chitosan Nanoparticles and Soluplus Micelles to Optimize the Bioactivity of *Posidonia oceanica* Extract on Human Neuroblastoma Cell Migration. Piazzini Vieri; Vasarri Marzia; Degl'Innocenti Donatella; Guastini Asia; Barletta Emanuela; Salvatici Maria Cristina; Bergonzi Maria Camilla. *Pharmaceutics*, 2019. IF 4.42.

- Evidence of Phytotoxicity and Genotoxicity in *Hordeum vulgare* L. Exposed to CeO₂ and TiO₂ Nanoparticles. Alessandro Mattiello, Antonio Filippi, Filip Pošćić, Rita Musetti, Maria C. Salvatici · Cristiana Giordano, Massimo Vischi, Alberto Bertolini , Luca Marchiol. *Frontiers in Plant Science*, 2015. IF 3.67.

- *Cucurbita pepo* L. Extracts as a versatile hydrotropic source for the synthesis of gold nanoparticles with different shapes . Cristina Gonnelli, Federica Cacioppo, Cristiana Giordano, Laura Capozzoli, Maria Cristina Salvatici, Ilaria Colzi , Massimo Del Bubba, Claudia Ancillotti, Sandra Ristori. *Green Chemistry Letters and Reviews*, 2015. IF 3,28.

- Effect of Quercetin-loaded liposomes on induced oxidative stress in human spermatozoa. Elena Moretti , Lucia Mazzi , Claudia Bonechi , Maria Cristina Salvatici , Francesca Iacoponi , Claudio Rossi , Giulia Collodel. *Reproductive Toxicology*, 2018. IF 2,58.

- Magnetically Driven Nanoparticles: ¹⁸F-FDG-radiolabeling and Positron Emission Tomography biodistribution study. M. De Simone, D. Panetta, E. Bramanti, C. Giordano, M. C. Salvatici, L. Gherardini, A. Menciassi, S. Burchielli, C. Cinti, P. A. Salvadori. *Contrast Media and Molecular Imaging*, 2016. IF 2,93.

- Functionalization of a nanostructured hydroxyapatite with copper(II) compounds as pesticide: in situ TEM and ESEM observations of treated *Vitis vinifera* leaves . E. Battiston, M.C. Salvatici, A. Lavacchi, A. Gatti, S. Di Marco , L. Mugnai. *Pest Management Science*, 2018. 3,308.

- Silver nanoparticles enter the tree stem faster through leaves than through roots. Coccozza, C.; Perone, A.; Giordano, C.; Salvatici, M. C.; Pignattelli, S.; Raio, A.; Schaub, M.; Sever, K.; Innes, J. L.; Tognetti, R.; Cherubini, P. *Tree Physiology*, 2019. IF 3,655.