



Curriculum Dr. **SIMONE CAPPELLO**

PERSONAL DATA:

Name: **Simone Cappello**

Place & date of birth: ----- - Code: -----

Nationality: **Italian**

Researcher unique identifier(s): <https://orcid.org/0000-0002-5593-6004>

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EMPLOYMENT CURRENT POSITION:

1. Full Researcher Scientist, Consiglio Nazionale delle Ricerche (CNR) - **Institute for Biological Resources and Marine Biotechnology (IRBIM)-CNR of Messina** (Messina, Italy);
2. Position 2: **Technical & Marketing Director of ATHENA Green Solutions S.r.L.** of Messina (Italy)

EDUCATION:

- 2006 – **Awarded Ph.D. in “Science and Engineering of Sea”** (XVII cycle) of University “Federico II” of Naples (Naples, Italy) whit Thesis entitled: “Analysis on medium scale of the evolution of hydrocarbons in marine environment: role and optimization of biodegradative potentiality of natural bacterial population”. Ph.D in co-tutele with University of Montpellier II (Montpellier, France) for PhD School in “Ecologie des Systemes Aquatiques Continentaux”;
- 2000 – **Qualified as Biology**, Faculty of Sciences of University of Messina, Messina (Italy);
- 1999 - **Awarded B.Sc in Biology**, Faculty of Sciences of University of Messina (Messina, Italy), whit Thesis entitled: “Variation of adhesion of Pseudomonas aeruginosa ATCC 27853 under stress and starvation conditions and in mutants generated”.

SCIENTIFIC ACTIVITY:

Dr. Simone Cappello **graduated in “Biological Science”** at the University of Messina (Italy) and he got the **PhD** in **“Science and Engineering of the Sea”** (XVII cycle) at the University of Naples “Federico II” (Italy) in collaboration with University of Montpellier II (Montpellier, France).

Dr. Simone Cappello is a **Full Researcher at the Italian National Research Council (CNR)**, in the service of the Institute for Biological Resources and Marine Biotechnology (IRBIM)-CNR of Messina (Italy).

Principal research topics of Dr. Cappello include:

- i) Ecology and physiology of marine prokaryotes;
- ii) Molecular microbiology, ecology and biotechnology in natural environment;
- iii) Development of scale systems (micro- and/or mesocosms) for study of polluted environments;
- iv) Macroorganism-microorganism relationships;
- v) Development and optimization of bioremediation treatments for the recovery of terrestrial and marine area polluted by organic pollutants / hydrocarbons and heavy metals;
- vi) Treatment of pollutants/chemicals originated from industrial activity and marine transportation.

The scientific activity of Dr. Simone Cappello is attested by more than **70 publications, 15 chapters in different books and/or volumes, more than 100 poster and/or oral communications** in National and International conferences with a total **H index equal to 33** (in November 2021; <https://scholar.google.com/citations?user=kmWbDi0AAAAJ&hl=it&oi=ao>). However, Dr. Cappello is also author of **4 Italian Patent and 3 International Patent**.

PARTICIPATION AND ACTIVITY IN NATIONAL AND INTERNATIONAL PROJECTS:

MIUR Italian Ministry of Education University and Research

- 2014-2020 – Local Coordinator for IRBIM-CNR of PO-FESR 2014-2020 “Soluzioni Innovative per Mezzi navali ad Alto Risparmio Energetico” (*SI-MARE*);
- 2014-2010 - Local Coordinator for IRBIM-CNR of Operative National Project (PON) - Technology And materials for safe Low consumption And low life cycle cost vessels And crafts (*THALASSA* Project)
- 2018-2020 - Local Coordinator for IAMC-CNR of Project PRIN/MIUR (Cod. PNRA2016_00075) - Polymeric nanoparticle in marine environment and in antarctic organisms (*nanoPANTA* Project);
- 2016-2018 - Local Coordinator for IAMC-CNR of Project PRIN/MIUR (cod. PNRA2015_00090) - Plastic in Antarctic Environment (*PLANET* Project);
- 2015-2017 - Coordinator for Project MIUR/PNRA2013 (PdR 2013_B4.01) “Integrated physical-biological-mechanical systems for recovery in of the "Oil Spill" in Antarctic Environment” (*STRANG*E Project);
- 2012-2015 – Local Coordinator for IAMC-CNR of Project PRIN/MIUR 2010-2011 (prot. 2010ARBLT7_001/008) “System Biology” the study of xenobiotic effects on marine organisms Consiglio Nazionale delle Ricerche – IRBIM – Istituto per le Risorse Biologiche e le Biotecnologie Marine for evaluation of the environmental health status: Biotechnological applications for potential recovery strategies (*SYSTEM BIOLOGY* Project);
- 2012-2015 – Local Coordinator for IAMC-CNR of Operative National Project (PON; cod. PON02_00153_2849085) “Sviluppo di Tecnologie Innovative per il trattamento dei rifiuti liquidi della navigazione finalizzate alla Tutela dell’Ambiente Marino” (*STI-TAM* Project);
- 2012-2015 – Local Coordinator for IAMC-CNR of Operative National Project (PON; cod. PON02_00153_2939551) "Sviluppo di tecnologie innovative per la Sostenibilità Energetica ed Ambientale di cantieri navali ed aree PORTuali" (*SEAPORT* Project);
- 2002-2005 – Co-Principal Investigator of Operative National Project (PON measure 1.3 “Analisi dell’efficacia di surfattanti in attivita' di bioremediation in-situ ed ex-situ (reattori) mediante studio su media scala” (PON-SABIE Project).

Research Contract

- 2018-2010 - Coordinator/Responsible for Research Contract "Studi di Biodegradabilità Acqua di Produzione" (*ACQUA DI FALDA*) funded by SYNDIAL-EBI S.p.A
- 2017-2018 - Coordinator/Responsible for Research Contract "Studio di sistemi sperimentali (microcosmi) per l'applicazione di strategie di biodegradazione naturale e/o accelerata dei contaminanti presenti nelle acque di falda" (*FALDA*) funded by ENI S.p.A
- 2016-2017 - Coordinator/Responsible for Research Contract "Bioremediation" funded by BIO-ON S.p.A (Prot. IAMC num. 00066643 del 25 maggio 2016);
- 2008-2009 - Coordinator/Responsible for Research Contract “Long term weathering of oil in marine environment” (*LOW-MARE*) funded by ENI S.p.A. (Contract ENI 4900169904 of 21/10/2007);
- 2006-2007 - Principal Investigator or IAMC-CNR Research Unit for Research Contract “Microbial Oil Weathering” (*MOW-SIM*) funded by ENI S.p.A. (Contract IAMC 0000504 of 24/5/2006);
- 2009-2010 - Principal Investigator or IAMC-CNR Research Unit for Research Contract “Valutazione eco tossicologica di sedimenti marini sottoposti ad inquinamento simulato da idrocarburi petroliferi” (*DE-SED*) funded by ENI S.p.A. (Contract IAMC 00014860 date 8/06/2009).

PATENTS

1. M.R. Plutino, S. Cappello (2018) Patent CNR-ID#2139 ;
2. M.R. Plutino, S. Cappello, G. Rando, G. Sabatino (2018) Patent CNR-ID#2234
3. S. Cappello, L. Genovese, S. Begotti (2017) IT- 11021382
4. MM Yakimov, S. Cappello, et al. (2010) IT- PN2012A000012

SCIENTIFIC PRODUCTION (principal articles last 5 Yers):

- 2019 - S. Cappello, et al., Combining electrokinetic transport and bioremediation for enhanced removal of crude oil from

- contaminated marine sediments: Results of a long-term, mesocosm-scale experiment. *Water research* 157: 381-395;
- 2019 - S. Santisi, et al., Biodegradation ability of two selected microbial autochthonous consortia from a chronically polluted marine coastal area (Priolo Gargallo, Italy). *Journal of applied microbiology* DOI: <https://doi.org/10.1111/jam.14246>
- 2019 - N. Djahnit, et al., Isolation, characterization and determination of biotechnological potential of oil-degrading bacteria from Algerian centre coast. *Journal of applied microbiology* 126(3): 780-795;
- 2019 - S. Cappello, G. Mancini (2019) Use of Nanomaterials for Marine Bioremediation: A Perspective. *Annals of Materials Science & Engineering* 4:1
- 2018 - P. Lagana, et al., Do plastics serve as a possible vector for the spread of antibiotic resistance? First insights from bacteria associated to a polystyrene piece from King George Island (Antarctica). *International journal of hygiene and environmental health* 222(1): 89-100
- 2018 - G. Caruso, et al., Effects of microplastics on trophic parameters, abundance and metabolic activities of seawater and fish gut bacteria in mesocosm conditions. *Environmental Science and Pollution Research* 25(30): 30067-30083;
- 2018 - A. Giacoletti, et al., Predicting the effectiveness of oil recovery strategies in the marine polluted environment. *Journal Environmental Management* 223: 749-757;
- 2018 - V. Catania, et al., Microbial communities of polluted sub-surface marine sediments. *Marine Pollution Bulletin* 131: 396-406;
- 2018 - C. Pirrone, et al., Evaluation of biomarkers in *Mytilus galloprovincialis* as an integrated measure of biofilm-membrane bioreactor (BF-MBR) system efficiency in mitigating the impact of oily wastewater discharge to marine environment: a microcosm approach. *Aquatic Toxicology* 198:49-62;
- 2018 - M.S. Zoccali, et al., Multilevel characterization of marine microbial biodegradation potentiality by means of flow-modulated comprehensive two-dimensional gas chromatography combined with a triple quadrupole mass spectrometer. *Journal of Chromatography A* 1547: 99-106;
- 2018 - Mahjoubi, S. Cappello, Y. Souissi, A. Jaouani, A. Cherif (2018) Microbial Bioremediation of Petroleum Hydrocarbon-Contaminated Marine Environments. *Recent Insights in Petroleum Science and Engineering*, 325-359;
- 2017 - M. Maisano, T. Cappello, N. Natalotto, V. Vitale, V. Parrino, A. Giannetto, S. Oliva, G. Mancini, S. Cappello, A. Mauceri, S. Fasulo (2017). Effects of petrochemical contamination on caged marine mussels using a multi-biomarker approach: Histological changes, neurotoxicity and hypoxic stress. *Marine Environmental Research* 114-123;
- 2017 - G. Mancini, M. Panzica, D. Fino, S. Cappello, M.M. Yakimov, A. Luciano (2017). Feasibility of treating emulsified oily and salty wastewaters through coagulation and bio-regenerated GAC filtration. *Journal of Environmental Management*, 203:817-824;
- 2017 - R. Scaffaro, F. Lopresti, V. Catania, S. Santisi, S. Cappello, L. Botta, P. Quatrini (2017). Polycaprolactone-based scaffold for oil-selective sorption and improvement of bacteria activity for bioremediation of polluted water: Porous PCL system obtained by leaching melt mixed PCL/PEG/NaCl composites: Oil uptake performance and bioremediation efficiency. *European Polymer Journal* 91: 260-273 doi: 10.1016/j.eurpolymj.2017.04.015;
- 2017 - M. Scalici, L. Traversetti, F. Spani, V. Malafoglia M. Colamartino, T. Persichini, S. Cappello, G. Mancini, G. Guerriero, M. Colasanti (2017). Shell fluctuating asymmetry in the sea-dwelling benthic bivalve *Mytilus galloprovincialis* (Lamarck, 1819) as morphological markers to detect environmental chemical contamination. *Ecotoxicology* 26: 396-404 (ISSN: 0963-9292).

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