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Department of Corrosion Constituyentes Atomic Centre National Atomic Energy Commission
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CURRENT POSITION

2012- present National Atomic Energy Commission, Argentina

Researcher

EDUCATION

2012 University of Buenos Aires, Argentina

Ph.D in Chemistry Dissertation: Studies of microbiologically induced corrosion at a nuclear facility

2005 University of Buenos Aires

MSc in Biology Dissertation: Development and biotechnological applications of electrochemical sensors

RESEARCH EXPERIENCE

2017-present National Atomic Energy Commission

Research Staff at the Department of Radiobiology. Microbiological Induced Corrosion in nuclear facilities and applications of photodynamic therapy to industrial systems. Our research project focuses on the application of molecular biology, microbiology and materials science techniques to the development of monitoring programs and strategies of mitigation of microbiological induced corrosion in nuclear waste pools and power plants 2012-2017 National Atomic Energy Commission

Research Staff at the Department of Corrosion. Microbiological Induced Corrosion in nuclear facilities. 2006 -2012 National Atomic Energy Commission

Research Assistant. Department of Materials.

Advisors: Lic. Arturo Burkart and Dr. Ramón Pizarro. Microbiological Induced Corrosion in nuclear alloys.

2005- 2006 Max Volmer Institut TU- Berlin, Germany

Research Assistant. Advisor: Dr. Peter Hildebrandt. Analysis of structural changes in cytochrome C oxidase using Time- resolved Surface-enhanced Raman spectroscopy

2003-2005 University of Buenos Aires

Undergraduate Research Assistant. Department of Inorganic Chemistry, Analytical and Physical Chemistry. Advisor: Dr. Fernando Battaglini Development of aniline-based electrochemical biosensors

2002-2003 University of Buenos Aires

Fellow Fresenius Medical Care. Department of Inorganic Chemistry, Analytical and Physical Chemistry. Advisor: Dr. Fernando Battaglini

Synthesis, characterization and purification of LPS-Peroxidase conjugates.

TEACHING EXPERIENCE

2014- present National University of Tres de Febrero.

Associate Professor. Environmental Microbiology.

2015 MAG laboratory

Course: Microbiological Induced Corrosion for the oil industry

2013 Buenos Aires Institute of Technology

Advisor of undergraduate students

2012 National Atomic Energy Commission

Advisor of exchange student from Calgary University

2011 Embalse Nuclear Power Plant.

Course : Corrosion. Data collection in MIC test cells

2004 University of Buenos Aires

Teaching Assistant. Department of Inorganic Chemistry, Analytical and Physical Chemistry.

LANGUAGE PROFICIENCY Spanish: Native Language English: Fluent (speaking, reading, writing) French: Intermediate (reading), Limited (speaking, writing) German: Limited

RELATED PROFESSIONAL EXPERIENCE

Mujeres que trabajamos en CNEA (Working women at CNEA) Co-Founder . Organization of meetings dedicated to discussing and promoting the challenges of women working in CNEA, development and distribution of leaflets, organization of running days open to the community with the aim of promoting a different vision of women in science.

Argentina Association of Nuclear Technology (AATN) Chair at the session of the National Program for Radioactive Waste Management at the XLIV Annual meeting of the AATN.

Women in Science (WIN) Technical Track Manager at the IYNC 2018- 26th WiN Annual Conference.

Reviewer of the following publications:

Scientific Reports World Journal of Microbiology and Biotechnology Innovations in Corrosion and Materials Science Environmental science and pollution research Journal of Cultural Heritage Journal of Dairy Science Biofouling 6th meeting of young researchers in materials science and technology

External reviewer for proposals submitted to the 2017 FONDECYT Regular Competition

PROFESSIONAL ASSOCIATIONS

Argentine Association of Materials (SAM) Women in Nuclear (WIN)

PEER-REVIEWED PUBLICATIONS

2018 Oppezzo, O. J. and Forte Giacobone, A. F. (2018), Lethal Effect of Photodynamic Treatment on

Persister Bacteria. Photochem Photobiol, 94: 186–189. doi:10.1111/php.12843

2016 Forte Giacobone, A. F., Ruiz Gale, M. F., Hogert, E. N. and Oppezzo, O. J. (2016), A Possible

Phenom of Persistence in Pseudomonas aeruginosa Treated With Methylene Blue and Red Light. Photochem Photobiol. V. 92 (5), p702-707.

2015 Forte Giacobone, A. F. and Oppezzo, O. J. (2015), Survival of *Pseudomonas aeruginosa* exposed

to sunlight resembles the phenom of persistence. *Journal Photochem. Photobiol. B-Biology* V. 142, p232 - 236.

2014 Forte Giacobone, A. F., Burkart, A. L., Pizarro, R. A., Rodríguez, S. A., Belloni, M., Croatto, F. J., Ferrari, F., Herrera, C., Mendizábal, M. I., Montes, J., Rodríguez Aliciardi, M., Saucedo, R., Ovando, L. E. (2014), Biocorrosion at Embalse Nuclear Power Plant. Analysis of the effect of a biocide product". *Revista Procedia Materials Science*. Vol.8, p 101-107

2011 Forte Giacobone, A.F.; Rodríguez, S. A., Burkart, A.L., Pizarro, R. A. (2011), Microbiological induced corrosion of AA 6061 nuclear alloy in high diluted media by *Bacillus cereus* RE 10. *Int. Biodeterior Biodegradation*. V 65 (8) p. 1161-1168

2007 Yáñez Heras, J., Forte Giacobone, A. F., Battaglini, F. (2007), Ascorbate amperometric determination using conducting copolymers from aniline and N-(3-propane sulfonic acid) aniline. *Talanta* . V. 71(4) pp. 1684-1689

TECHNICAL REPORTS

2017 Forte Giacobone, A. F., Oppezzo, O. J., Linardi, E. M., Flores, M., Ratner, M.,

PU-ATN-01/17 Assessment of Biofouling and Biocorrosion of Aluminum Spent Nuclear Fuel from Research Reactors, at Storage Pools.

2016 Forte Giacobone, A. F., Oppezzo, O. J., Linardi, E. M., Flores, M., Ratner, M., Rossich, L., Haddad, R., Pizarro, R.A., IT-GMAT-34/16 Evaluation of Biofouling and Biocorrosion of Aluminum Spent Nuclear Fuel from Research Reactors, at Storage Pools 2011 Forte Giacobone, A. F., Burkart, A. L., Pizarro, R. A., IT-MAT 42 1/11, Biocorrosion at pipelines and Components of the Process Water System of the Embalse Nuclear Power Plant. Inspection of equipment, taking samples of biofouling and biocorrosion and characterization of the bacterial flora.

Burkart, A. L., Forte Giacobone, A. F., Rodriguez, S., Franco, C., Pizarro, R. A. IT-MAT 42 3/11, Biocorrosion at pipelines and Components of the Process Water System of the Embalse Nuclear Power Plant. Evaluation of a biocide.

CONFERENCES/ MEETINGS

2018 Linardi, E., Oppezzo, O., Flores, M., Ratner, M., Forte Giacobone, A. Tracking microbiologically induced corrosion in an mtr spent fuel elements storage pool. European Research Reactor Conference. Munich. Germany . 11-15 March Accepted

2017 Forte Giacobone A.F. Biocorrosion, where materials science meets microbiology. VIII Seminarium ECAMAT. National Academy of Sciences of Buenos Aires. Argentina. October 2th.

2017.

Oppezzo O.J., Forte Giacobone A. F., Inactivation of *Pseudomonas aeruginosa* by synergistic effects of ofloxacin and photodynamic treatment. XIII Latinoamerican Meeting of Photochemistry and Photobiology. Córdoba, Argentina. 23- 27 October, 2017.

2016 Forte Giacobone A.F. Microbiologically Induced Corrosion in Nuclear Power Plants. Research Seminarium at UNTREF. Buenos Aires. Argentina. 1 July 2016.

Forte Giacobone A.F., Ruiz Gale M. F., Hogert E. N., Oppezzo O. J., The phenomenon of persistence could limit the efficacy of antimicrobial photodynamic therapy. III Meeting of Argentinean Molecular Photobiologist. Tucuman. Argentina. 29-31 August 2016.

2015 Oppezzo O. J., Forte Giacobone A.F., Ruiz Gale M. F., Hogert E. N., Limitations in photodynamic inactivation processes in bacteria. X Meeting of Biologist Network. Mar del Plata. Argentina. 14-15 November

Forte Giacobone A.F., Ruiz Gale M. F., Hogert E. N., Oppezzo O. J., Limitations in the treatment of water for irrigation with methylene blue and visible light. III Argentinean Congress of environmental and agricultural microbiology. CABA. Argentina. 25-27 November.

2014 Forte Giacobone A. F., Microbiologically Induced Corrosion at nuclear facilities. I Biodeterioration and Environment Meeting. La Plata. Argentina. 5 July 2014.

Oppezzo O.J., Forte Giacobone A. F., Persistence in bacterial populations exposed to sunlight. 16th International Congress on Photobiology. International Union of Photobiology .Argentina. Cordoba. 8-12 September 2014.

2013 Forte Giacobone A., Oppezzo O., “Survival and biofilm formation in UVA treated bacteria from a repository” XXXX Annual Meeting of the AATN. CABA. Argentina. 2 -6 December 2013.

Oppezzo O., Forte Giacobone A., Effect of UVA radiation on survival and biofilm formation of an environmental strain of *Pseudomonas*”. XIII Argentine Congress of Microbiology 2013 and II Congress of environmental and agricultural microbiology 2013. CABA. Argentina. 23-26 September 2013.

Forte Giacobone A. F., Burkart A. L., Pizarro R. A., Rodríguez S. A., Belloni M., Croatto F., Ferrari F., Herrera C., Mendizábal M. I., Montes J., Rodríguez Aliciardi M., Saucedo R., Ovando L. E., Biocorrosion at Embalse Nuclear Power Plant. Analysis of the effect of a biocide. 13 International Congress of Materials Science and Technology. SAM CONAMET. Puerto Iguazu, Argentina, 20 -23 August 2013.

2012 Forte Giacobone A.F., Rodriguez S.A., Pezzoni M., Burkart A.L., Corton E., Pizarro R.A., Costa C.S., *Pseudomonas aeruginosa* PAO1-GFP as a biocorrosion model at a nuclear facility. Interdisciplinary Meeting of Biofilms. INIFTA. La Plata. Argentina July 3th 2012.

Forte Giacobone A. F., Burkart A. L., Pizarro R. A., Rodríguez S. A., Belloni M., Croatto F., Ferrari F., Herrera C., Mendizábal M. I., Montes J., Rodríguez Aliciardi M., Saucedo R., Ovando L. E., Evaluation of a biocide product against Biocorrosion at pipelines and process water systems at Embalse Nuclear Power Plant. XXXIX Annual Meeting AATN. CABA. Argentina. 3-7 December 2012.

2011 Forte Giacobone A.F., Rodriguez S.A., Amar A., Pezzoni M., Burkart A.L., Pizarro R.A., Costa C.S., Use of *Pseudomonas aeruginosa* strain PAO1-GFP as a model for microbiologically induced corrosion, XXVIII Annual Meeting AATN . CABA. Argentina. 14 -18 November 2011.

Forte Giacobone, A.F., Pezzoni, M. Rodríguez, S.A., Cortón, E., Burkart, A.L., Pizarro, R.A., Costa, C. S., Microbiological induced corrosion in AA6061 alloy by the genera *Pseudomonas*: PAO1GFP strain as a model for biocorrosion testing. XXXV Symposium “Scientific Bases for Nuclear Waste Management”. Materials Research Society. CABA. Argentina. 2 -7 October 2011.

2010 Forte Giacobone, A., Pezzoni, M., Pizarro, R., Burkart, A., Costa, C., Analysis of bacterial biofilm development relevant for biocorrosion processes. XXVII Annual Meeting AATN. CABA. Argentina. 22-26 November 2010.

Forte Giacobone A.F., Pizarro R., Evaluation of the bacterial population at a spent nuclear fuel elements wet storage facility. XII Argentine Congress of Microbiology. CABA. Argentina. 24-27 October 2010.

Pezzoni M., Forte Giacobone A., Pizarro R., Costa C. Oxidative damage from exposure to UVA in mutants of *Pseudomonas aeruginosa* deficient in quorum sensing. XII Argentine Congress of Microbiology. CABA. Argentina. 24-27 October 2010.

Forte Giacobone A.F., Pizarro R., Evaluation of the bacterial population at a spent nuclear fuel elements wet storage facility. II Interdisciplinary Biofilms Meeting. CABA. Argentina. October 15th. 2010.

2009 Forte Giacobone A. F., Lanzani L. A., Mosquera Rodríguez L. , Oppezzo O. J., Venturini M., Pizarro R. A. Isolation and characterization of a bacterial population from an interim wet storage facility for spent fuels from research reactors: Biocorrosion Studies. XXXVI Meeting AATN. CABA. Argentina. 16-20 November 2009.

2008 Forte Giacobone A. F., Lanzani L.A., Oppezzo O.J., Pizarro R. A., Biocorrosion studies in nuclear industry alloys induced by a strain of *Bacillus cereus*. XLIV Annual Meeting of the Argentinean Society of Biochemistry and Molecular Biology Research. Biocell, 2008, vol. 32 (suppl), p.101, ISSN 0327-9545. Villa Carlos Paz, Córdoba, Argentina. 8-11 November 2008.

2007 Forte Giacobone A.F., Cortón E., Burkart A., Keitelman A., Silva Paulo P. Isolation of a Fe and Mn precipitating bacteria, related to Oxalobacteraceae, near Embalse Nuclear Power Plant and relevant for biocorrosion. IV Argentinean Congress of General Microbiology. SAMIGE.

CABA. Argentina. 27-28 September 2007.

2006 Cassanello M., Yáñez Heras J., Forte Giacobone A. F., Battaglini F., Ascorbate amperometric determination using conducting copolymers electrosynthesised from aniline and N-(3-propane sulfonic acid) aniline, for the amperometric detection of ascorbate. XXII Interamerican Congress of Chemical Engineering. V Argentinean Congress of Chemical Engineering. CABA. Argentina. 2 -3 October 2006.

Yáñez Heras J., Forte Giacobone A.F., Battaglini F., A new sensor based in conducting copolymers electrosynthesised from aniline and N-(3-propane sulfonic acid) aniline. 11th International Conference in Electroanalysis. Bordeaux. France. 11-13 July 2006

2004 Forte Giacobone A.F., Yáñez Heras J., Battaglini F. Determination of Ascorbate using an electrode modified with polianiline and poli(N-propylsulfonate)aniline. 3rd. Argentinean Congress of Analytical Chemistry, Merlo, San Luis, Argentina. 1-4 November 2005.

2003 Forte Giacobone A.F., Cortón E., Raffa D., Battaglini F., Electrochemical sensor for peroxide based on partially sulfonated polianiline. II Argentine Congress of Analytical Chemistry. Córdoba, Argentina. October 2003.

RELEVANT COURSEWORK

2015 “Data analysis in microbial ecology”. Asociacion Argentina de Microbiologia

“Organization and management of Microbial Culture Collections and preservation of microorganisms”. Asociacion Argentina de Microbiologia

2011 “Introduction to ISO 9001 Standard” . IT Sábató- National University of Gral. San Martín.

2008 “Microbial Ecology”.Ing. A. Soriano Graduate School. Facultad de Agronomia. University of Buenos Aires.

2007 “Microbiological Corrosion” CIDEPINT. Facultad de Ingenieria. National University of La Plata.

“Biodeterioration of materials of economic, artistic and historical importance. Methods of prevention and control”. Facultad de Ciencias Naturales y Museo. National University of La Plata.

2006 Degradation of materials. IT Sábató-National University of Gral. San Martín.

2005 “Processes at biological interfaces”. Max Volmer Institut. Technical University of Berlin.

2003 “Polymeric materials applied. Fundamentals and Processing”.INQUIMAE. University of Buenos Aires.