

Curriculum Vitae and Publications List of Dr. Francesco Secundo



November, 2019

Personal information

SECUNDO Francesco born in Putignano (Italy) in 1966.

Nationality Italian

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Ph. office: ++39 0228500029
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Gender Male

Education

Dates 13-10-1992

Title of qualification awarded Laurea in Biological Science

Name and type of organisation providing education and training University of the Studies of Milan

Level in national or international classification 107/110

Courses post-laurea attended as student- NATO ASI, Course title: "Engineering of/with Lipases" at Povia de Varzim (Portugal), (22nd May- 2nd June 1995)
- National School of Science of Proteins at Urbino, (13-17th September 1993)

Actual working position

Research scientist with a permanent position at the National Council of Research (CNR) in Milano, Italy

Work experience

Since November 1994 to now.

Research scientist at the Italian National Research Council (CNR)

During these years Dr. Secundo has conducted research activity in the following biotechnological and chemical fields

- *Biocatalysis*. He has dealt with fermentation of bacteria, extraction of enzymes, purification, characterisation and application of enzymes (hydrolases and oxidoreductases) to organic synthesis. Particular attention was devoted to the study of region- and enantioselectivity of the enzymes. Protein purification was carried by chromatographic methods (DEAE, Gel filtration, electrophoresis). The analyses of reactions were carried by GC, GC/MS, HPLC.
- *Enzyme immobilization*. He has been using different kind of materials as support for enzyme immobilization for different applications (biosensors, biocatalysis, prevention of biofilm).
- *Protein conformation*. He conducted conformational studies of proteins on different kinds of proteins, peptides and enzymes. Studying enzymes he devoted particular attention to the enzyme formulation (freeze-dried) employed in non-aqueous media (ionic liquids and organic solvents). Most of these studies were carried out by means of spectroscopic techniques (circular dichroism, fluorescence and FT-IR).
- *Assembly of proteins on electrodes* for photocurrent generation or biosensing purposes .
- *Analysis of food samples*. He carried out these studies by means of gas chromatography to

analyse lipids in milk and by means of immunochemical methods, to detect the presence of pesticides in fat from milk.

December 1993-November 1994.

Post-doc at the Department of Chemistry and Biochemistry of the University of Georgia, Athens, USA

As post doc Dr. Secundo worked in the biocatalysis area employing dehydrogenases and lyases. He obtained the enzymes by fermentation and extraction and used them in synthetic applications.

April 1986-November 1993.

Technician for the laboratory of chemistry and biochemistry at CNR

In a context of scientific research, Dr. Secundo was responsible for the use and maintenance of several scientific instruments. In particular GC, GC/MS, HPLC, circular dichroism, UV-Vis, fluorimeter, electrophoresis.

Editorial Board Membership and editorial activity

- March 2011-now, he has accomplished the role of Associate Editor for Biocatalysis and Biotransformation journal

- May 2018-now Guest Editor for open access journal Catalyst MDPI; Special Issue "Biomacromolecules in Non-Conventional Media: Biotransformations and Beyond"

- July 2018- now Advisory Board of Sci — Open Access Journal of Scientific Research

- November 2018- now Editorial Board member Catalyst MDPI (section Bioatalysis)

- June 2014-February 2015 Guest Reviewer Editor for Biotechnology Journal, special issue "Protein Stability"

- November 2013 - 2015 Guest Editor for the open access journal Frontiers in Chemistry (Chemical Biology) for the research topic "Proteins and nanoscale materials"

- January 2011- now, he is member of the editorial board of the Journal of Bioscience and Bioengineering

- October 2011-2016, member of the editorial board of the Journal of Molecular Catalysis B: Enzymatic

- 2011, member of the editorial board of ISRN Chemical Engineering open access journal

Chair/Member of Scientific Committee

- Chair of the Scientific Committee of the 10th International Conference on Protein Stabilisation, 7-9 May 2014, Stresa (Lake Maggiore, Italy)

- Member of the of the Scientific Committee of the 11th International Conference on Protein Stabilisation, 9-11 May 2016, Istanbul (Turkey)

- Member of the of the Scientific Committee of the 12th International Conference on Protein Stabilisation, Vilnius (Lithuania) 16-18 May 2018.

Organization of scientific events

- Principal organizer of the Italian-Egyptian meeting on the ongoing research, development and industrial activities in the textile field. Biella, Milano, Busto Arsizio - 11th, 12th, 13th February 2015

Member of Organization Committee

- Member of of Organization Committee Committee of the 10th International Conference on Protein Stabilisation, 7-9 May 2014, Stresa (Lake Maggiore, Italy)

- Member of Organization Committee, Giardini Naxos – Taormina, 2-6/10/2011Biotrans2011, 10th International Symposium on Biocatalysis and Biotransformations".

Project Evaluator

- 2016-2017 Evaluator of Industrial Research Projects in the Area of Biotechnology in the contest of the calls of Ministry of Economic Development (MiSE-FCS_H2020-PON -2016) as an expert of National

research Council of Italy. Prot. N. 0000911; Data: 11/01/2017

- 2016, Evaluator of Italian research assessment (VQR).

- 2015, Evaluator for Netherlands Organisation for Scientific Research (NWO), Division for Chemical Sciences (CW), TOP/ECHO 2015.

- October 2014, Evaluator of "FCT Investigator" (2nd stage) for the Portuguese Fundação para a Ciência e a Tecnologia (Foundation for Science and Technology).

- 2013 - Evaluator of research proposal for MIUR.

Main responsibilities- Participation and coordination of research projects

Dr. Secundo has accomplished the following roles:

-2018-now, scientific coordinator of international research project between Italy and Egypt (Prof. Nabil Abd El-Basset Ibrahim, Preparation and Finishing of Cellulosic Fibers, National Research Center, National Research Centre, Il Cairo) entitled: "Proteolytic Enzymes from Locally Isolated Microorganisms and Their Potential Applications in Textile, Detergent, and Degradation of Proteinaceous Waste Fields". Research project financed by CNR and Academy of Scientific Research and Technology of Egypt.

- 2015-2017 scientific coordinator of an international research project between Italy and Russia (Prof. Vladimir Tishkov, Department of Chemical Enzymology, Faculty of Chemistry, M.V.Lomonosov Moscow State University) entitled "Ionic liquids as reaction media and enzymatic stabilizers of formate dehydrogenases catalyzed reactions for biocatalytic purposes and CO₂ fixation". The project is in the contest of the agreement between the Italian National Research Council (CNR) and the Russian Foundation for Basic Research

- 2013-2015 scientific coordinator of an international research project between Italy and Poland (Prof. Marcin Lukaszewicz, University of Wroclaw, Faculty of Biotechnology) entitled " Biocoatings for the development of materials with antifouling properties". Research project financed from the Ministry of Foreigner Affairs.

- 2013-2014 scientific coordinator of an international research project between Italy and Portugal (Prof. Joana Azeredo, Dep. Biological Engineering, University of Minho) entitled "Immobilization of enzymes and phages on biomedical polymers for developing innovative materials with antimicrobial properties ". The project was in the contest of the agreement between the Italian National Research Council (CNR) and Fundação para a Ciência e a Tecnologia (FCT).

- 2012-2014 Group Leader of research project entitled "Novel materials for medical devices based on biofunctionalized surfaces with antifouling properties" financed by Fondazione Cariplo, Milano, Italy.

- 2011-2012, scientific coordinator of international research project between Italy and Egypt (Prof. Ali M.Elshafei, Dept. of Microbial Chemistry. Genetic Eng.& Biotechnology, National Research Centre, Il Cairo) entitled: "Development of antimicrobial cotton fabrics by immobilized enzyme". Research project financed by CNR and Academy of Scientific Research and Technology of Egypt.

- 2010- 2011, scientific coordinator of an international research project between Italy and Turkey (Prof. Nevin Gul Karaguler, Istanbul Technique Universites Genetik, Istanbul) entitled: "Development of coating based on enzymes and/or Furanone derivates for bacterial biofilm inhibition". Research project financed by CNR and TUBITAK.

- Since 2005 to now, participation in a research project entitled "Biocatalysts" for the preparation and study of enzyme formulations employed in biocatalysis in organic solvents. Research project financed by the Italian National Research Council (CNR).

- June 2006-2009, participation in a research project entitled "Integrated approach to the problem of allergens, included those from food: Development of new anti-allergenic vaccines and innovative diagnostic methods" in collaboration with Lofarma S.p.A. as expert in the conformational analysis of proteins and their chemical modification. The topic of research was the analysis and modification of proteins. Research project financed by Regione Lombardia.

- December 2005 - 2009, participation in a research project as researcher scientist responsible for the

characterization of the lipid fraction in milk. Project financed by the Ministry of Agriculture and Forestry

- 2006 - 2008, scientific coordinator of an international research project between Italy and Romania (Prof. Emil Dumitriu, University of Iasi) entitled: "Hybrid enzyme-inorganic nanocomposites based on highly ordered nanoporous materials and their applications for fine chemicals". Research project financed from the Ministry of Foreign Affairs.

- From December 2005 to December 2007, scientific coordinator of an international research project between Italy and Turkey (Prof. Altan Erarslan, TUBITAK) entitled: "Stability and biochemical characterization of alkaline protease from Bacillus strains". Research project financed by CNR.

- 2004-2006. Consultant of research project conducted at the University of Puerto Rico (Humacao, Puerto Rico, USA) by Prof. Gabriel Barletta. The research project concerned the study of the activity and stability of enzymes in organic solvents.

- 2003-2006. Participation as scientist responsible for the research unit group in Milano, in the working-group "Solving the problems enzymes encounter in organic solvents" within the COST action D25 entitled "Applied Biocatalysis: Stereoselective and Environmentally-friendly Reactions Catalysed by Enzymes" financed by the European Community.

- 2005-2006. Scientific coordinator of a research project of curiosity on the biochemical characterization of Baeyer-Villiger monooxygenases FAD-dependent. Research project financed by CNR.

- Since 1994 to now, participation in several research projects related to biocatalysis and to conformational analyses of proteins (see annex list of publications).

Working periods spent as visiting scientist in foreigner laboratories

- November 2017, March 2018, June 2018, November 2018, March 2019 visiting scientist at Ocean University of China, Food Science Department, Qingdao, PRC. He supervised in collaboration with Prof. Xiangzhao Mao, several Master students during research activity on enzyme characterization and application.

- From 2nd July 2017- to 12 July 2017, visiting scientist at Beijing University of Chemical Technology, Beijing, PRC. He supervised in collaboration with Prof. Pengcheng Fu research activity on microalgae and cyanobacteria (photobiocatalysis, pigment extraction).

- From June 18th to July 1st, 2017, visiting scientist at Key State Laboratory of Virology of the Chinese Academy of Science, WuHan, PRC. He supervised in collaboration with Prof. Li Feng the research activity on enzyme immobilization on gold nanoparticles.

- From 14th June 2015- to 11 July 2015, visiting scientist at Beijing University of Chemical Technology, Beijing, PRC. He supervised in collaboration with Prof. Pengcheng Fu research activity on microalgae and cyanobacteria (photobiocatalysis, pigment extraction).

- From April 15th to April 22nd 2010 he attended the laboratory of Prof. Itamar Willner, at the Institute of Chemistry and the Center for Nanoscience, The Hebrew University of Jerusalem (Israel) to learn about preparation of integrated oligoaniline-cross-linked composites of Au nanoparticles/enzymes electrodes.

- From September 30th to October 21st 2008 at the Nagoya Institute of Technology in the contest of a joint project entitled "Photosynthetic complexes from plants and bacteria. Development and optimization of methods for applications as photocurrent generators" (laboratory of Prof. Mamoru Nango).

- From July 5th to July 20th 2008 at the University of Bielefeld, Department of Biophysics, Bielefeld, Germany, in the contest of a joint project entitled "Monooxygenase Monolayer on a Gold Electrode Monitored by Surface Enhanced Infrared Absorption Spectroscopy" (laboratory of Prof. Joachim Heberle).

- From June 22nd to July 13th 2006 at University of Georgia, Department of Chemistry, Athens, GA, USA, in the contest of a joint project entitled "Conformational studies of enzymes as a function of the hydrostatic pressure" (laboratory of Dr. Robert Phillips).

- From 14th September to 4th October 2003 at University of Colorado, Health Sciences Center, School of

Pharmacy in Denver, CO, USA in the contest of a joint project entitled "Study of catalytic activity and conformation of dehydrated hydrolases for applications in biocatalysis" (laboratory of Prof. John Carpenter).

- From 25th to 29th of November 2002 he attended the laboratory of Prof. Yves Marechal to learn about infrared spectroscopy of hydrogen bond in proteins, at the Department de Recherche Fondamentale sur la Matiere Condensee,.

- From 24th to 29th of May 1999 at the Department of Chemical Engineering at Rensselaer Polytechnic Institute in Troy, NY, U.S.A, in the contest of a research project on combinatorial biocatalysis techniques (laboratory of Prof. Jonathan Dordick).

Teaching activity

-2014, June. Dr. Secundo received from the Italian Ministry of Education, Universities and Research the habilitation as full professor in Biochemistry and Medical Biochemistry.

- In November 2017 (4 weeks), March 2018 (4 weeks) June/July 2018 (4 weeks) visiting scientist at Ocean University of China, Food Science Department, Qingdao, PRC. He supervised in collaboration with Prof. Xiangzhao Mao, several Master students during research activity on enzyme characterization and application.

-2017, June 28th. In the contest of GE-Hong Colloquium held at the Key State laboratory of Virology at the Chinese Academy of Science, held a lecture entitled: "Enzymes as tools for biocatalysis. An Overview"

-2014, June. In the contest of "The KRICT Lecture of Outstanding Scientist" held a lecture entitled: "Enzymes, organic solvents and supports for biocatalytic purposes", at Korea Research Institute of Chemical Technology (KRICT)

- 2013, July. Held a group of lectures (15 hours) on the subjects: Biocatalysis, Biosensors, Protein stability. Beijing University of Chemical Technology. Beijing, PRC.

-2011, May. Held a course (eight hours) on Biosensors at the University of Milano-Bicocca, Laurea (Master) in Industrial Biotechnonology.

-2010, 18th November, on invitation held a Seminar entitled: "Role of additives and organic solvents on the activity and conformation of hydrolases and Baeyer-Villiger monooxygenases" at Materials & Surface Science Institute, University of Limerick, Ireland. Research Forum 2010.

-2010, on invitation held lecture at the summer school "Biocatalysis in Using Non-Conventional Media" 15-17 September, RWTH Aachen University, Germany.

-2002, 13th May, lecture entitled "FT-IR and fluorescence for the study of protein chemistry" School of Biotechnological Applications at Department of Biotechnology and Bioscience, University of Milano-Bicocca.

-2002, 6th May, lecture entitled "Circular Dichroism: principles and applications". School of Biotechnological Applications at Department of Biotechnology and Bioscience, University of Milano-Bicocca.

-2002, January 25th. Invited by Prof. Patrick Adlercreutz (Dept. of Biotechnology, Center of Chemistry and Chemical Engineering, Lund University), as opponent to the Ph.D. thesis of entitled "Lipases as Biocatalyst in Organic Media".

1995, 13-17 March, lecture entitled "Enantioselective reduction of prochiral carbonylic compounds" at the school of "Biocatalysis in Organic Synthesis" at Politecnico di Milano.

In the contest of his research activity Dr. Secundo had the role of tutor/supervisor for the following thesis of Laurea:

- 2017 Laurea in Industrial Biotechnology. "Effect of ionic liquids on the activity of the wt and mutant SM4

NAD-dependent formate dehydrogenase from *Pseudomonas* sp. 101 lyophilized with lyoprotectants".

- 2017 Laurea in Industrial Biotechnology. "Effect of Ionic liquids on the stability and activity of NAD-dependent formate dehydrogenases from *Pseudomonas* sp. 101".
- 2016 Laurea in Industrial Biotechnology. "Hydrolase formulations: preparation, test of activity, evaluation of enzyme release and applications".
- 2012 Laurea in Industrial Biotechnology. " Immobilization of glucose oxidase for the preparation of biosensors "
- 2011 Laurea in Chimica e Tecnologie Farmaceutiche. " Effect of alpha-chymotrypsin immobilized on surfaces in polyethylene on the development of biofilm of *Escherichia coli* ".
- 2011 Laurea in Industrial Biotechnology. "Immobilization of flavoenzymes on gold surfaces".
- 2010 Supervisor of a 3-months stage (from January 14th to April 16th 2010) of a Ph.D student from Istanbul Technique Universites Genetik, Istanbul (Turkey) awarded with an EMBO fellowship (ASTF 369-2009), for carrying out research on a project entitled "Structural characterization of D195S, N187E, N147R, H13E, Q105R mutants of *Candida methylica* FDH by using circular dichroism and Fourier Transform Infrared Spectroscopy".
- 2010 Laurea in Ingegneria dei Materiali. Deposition of gold for the development of hybrid materials in biosensors.
- 2009 Laurea in Industrial Biotechnology. Preparation of chemical modified FAD and employment in the reconstitution of holoenzyme of phenyl acetone monooxygenase from da *Thermobifida fusca*.
- 2008 Laurea in Industrial Biotechnology. Preparation and study of enzymes immobilized by formation of cross-linked enzyme aggregates
- 2007 Laurea in Industrial Biotechnology. Study of the activity and stability of Baeyer-Villiger monooxygenase in water-organic solvent mixtures.
- 2006 Laurea in Industrial Biotechnology. Study on the hydration of hydrolases for the optimization of the catalytic activity in organic solvents.
- 2002, Laurea in Industrial Biotechnology. Study on the activity and enantioselectivity of wild type and mutated lipases from *Candida rugosa*.
- 2000, Laurea in Chemical and Pharmaceutical Sciences. Use of biocatalytic methods for the preparation of a library of cholic acid derivatives.
- 1999, Laurea in Biology. Study of the activity of different preparations of lipase B from *Candida antarctica* in organic solvent.
- 1998, Laurea in Biology. Study on the enantioselectivity of several lipases in the kinetic resolution of 3-butene-1,2-diol in organic solvent.
- 1997, Laurea in Biology. Comparison of the activity of different formulations of lipase from *Pseudomonas cepacia* in organic solvents at different water activity values.

Oral communications and lectures at conferences

Keynote speaker: "Enzyme formulations for biocatalysis in non-aqueous media" at the World Congress & Expo on Chemical Engineering & Catalysis Theme: Exploring the advancements in Chemical Engineering & Catalysis Scientific Federation held on July 23-25, 2018 at Osaka, Japan.

Keynote speaker "Lipids and lipases for lipids modification" at the 4th International Conference on Agricultural and Biological Sciences (ABS 2018) held from June 26th to 29th, 2018 in Hangzhou, Zhejiang Province, China.

Oral communication entitled held "Enzyme formulations for biocatalysis in non-aqueous media" at BNCM | Biocatalysis in Non-Conventional Media, 9th – 11th May, 2017, Rostock Germany

Oral communication entitled "Immobilized hydrolytic enzymes for antibiofilm applications" at the ESMB Meeting Combatting Biofilms, 30 September 2015. Gothenburg (Sweden)

25 March 2015. Egyptian-Italian Science day, National Research Centre, Dokki, Cairo. Egypt
Invited to present an oral communication Entitled: Enzyme Technologies and Innovative applications in Textile.

12-13 July 2013. *Plenary lecture* entitled "Enzyme formulation as a tool for improving performances of biocatalysts in non-aqueous media", "BUCT International Forum", Beijing University of Chemical Technology, PRC.

Oral communication entitled "Nanostructured materials for enzyme immobilization" - Meeting on Nanoparticles "Nanoparticles: angels or demons". 30 January 2013, Varese, Italy : Centro di Ricerca "The

Protein Factory”.

16 April 2009. *Oral communication* entitled “Role of methoxypolyethylene glycol on the hydration, activity, conformation and dynamic properties of a lipase in a dry film” at the meeting Prostab2009, 14-17 April 2009 at the TU of Graz, Austria.

7-12 July 2002. *Plenary lecture* entitled “Optimization of enzyme efficiency in organic solvents” presented at the Gordon conferences in Biocatalysis, Meriden, NH, USA

6 September 2001. *Oral communication* entitled “Activity and conformational study of different forms of *Pseudomonas cepacia* lipase in organic solvents” at the meeting BioTrans 2001, September, 2-7 at the TU of Darmstadt, Germany.

30 April 1999. *Oral communication* entitled “Activity and conformational study of different forms of *Pseudomonas cepacia* lipase in organic solvents” at the meeting “From Biotechnology to Bioindustry” Como, 28-30 April 1999.

Presentation of seminars

14 October 2008 seminar entitled “Importance of the enzyme formulation for the use of hydrolases in organic solvents” at the Nagoya Institute of Technology, Nagoya, Japan

3 December 2007, seminar entitled “Importance of the enzyme formulation for the use of hydrolases in organic solvents” at the Research Institute for Genetic Engineering and Biotechnology-TUBITAK, Kocaeli, Gebze, Turkey

27 October 2006, seminar entitled “Optimization of Hydrolases for catalysis in organic solvent” at the Department of Organic and Biochemical Engineering, Faculty of Chemical Engineering, Technical University of Iasi, Iasi, Romania

22 November 2005 seminar entitled “1. A Combinatorial Biocatalysis Approach to an Array of Cholic Acid Derivatives. 2. Optimization of Hydrolase Efficiency in Organic Solvents”. At the University of Coimbra, Portugal.

8 April 2005 seminar entitled “Dry hydrolase preparation for catalysis in organic solvents” at the University of Puerto Rico, Humacao, Puerto Rico (USA).

10 February 2004 seminar entitled “Optimization of enzyme efficiency in organic solvents” at the University of Puerto Rico, Humacao, Puerto Rico (USA).

14 February 2001 seminar entitled “Biocatalisi: un valido strumento per la sintesi chimica” Department of Pharmaceutical Science, University of Verona, Verona, Italy

20 October 1999 seminar entitled “Activity and conformational study of different forms of *Pseudomonas cepacia* lipase and *Candida antarctica* lipase B in organic solvents” at the Department of Chemical Engineering at the Technical University of Istanbul, Istanbul, Turkey.

20 April 1999 seminar entitled “Purification and applications of a phospholipase D from a new strain of *Streptomyces*” at the institute Defence and valorisation of the animal germoplasm, in Milano, Italy

Personal skills: coordination of people

Accomplishing the role of scientific coordinator of research projects Dr. Secundo had to act as supervisor of people hired to implement the financed research projects indicated above. In particular he had to lead and organize three post-docs for a period of one year (two of them in 2006 and one of them from the beginning of 2008 to now).

Mother tongue **Italian**

Other language **English**

Self-assessment Understanding: Good Speaking: Good Writing: Good

French: Basic level

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List of publications

111) I. Bayout, N. Bouzemi, N. Guo, X. Mao, S. Serra, S. Riva, F. SECUNDO

“Natural flavor esters synthesis catalyzed by lipases”.

Flavour and Fragrance Journal. (2019). Article DOI: 10.1002/ffj.3554 Accepted for publication

110) X. Gao, X. Mao, P. Lu, F. SECUNDO, C. Xue, J. Sun

“Cloning, Expression, and Characterization of a Novel Thermostable and Alkaline-stable Esterase from *Stenotrophomonas maltophilia* OUC_Est10 Catalytically Active in Organic Solvents”

Catalysts (2019), 9, 401; doi:10.3390/catal9050401

109) L. Li, C. Xu, W. Zhang, F. SECUNDO, C. Li, Z.-P. Zhang, X.-E. Zhang, F. Li

“Cargo-Compatible Encapsulation in Virus-Based Nanoparticles”

Nano Lett. (2019), 19, 2700–2706, DOI: 10.1021/acs.nanolett.9b00679

108) X. Gao, J. Sun, Z. Liu, W.-C. Huang, F. SECUNDO, Y. Zhao, C. Xue, X. Mao

“Highly efficient preparation of free all-trans-astaxanthin from *Haematococcus pluvialis* extract by a rapid biocatalytic method based on crude extracellular enzyme extract”.

International Journal of Food Science and Technology (2019), 54, 376–386; <https://doi.org/10.1111/ijfs.13947>

107) C. Cattò, F. SECUNDO, G. James, F. Villa, F. Cappitelli

α -Chymotrypsin immobilised on a low density polyethylene surface successfully weakens *Escherichia coli* biofilm formation

International Journal of Molecular Sciences. (Int. J. Mol. Sci. 2018, 19, 4003); doi:10.3390/ijms19124003

106) Win TT, Barone GD, SECUNDO F, Fu P. Algal Biofertilizers and Plant Growth Stimulants for Sustainable Agriculture

(2018), Industrial Biotechnology VOL. 14, NO. 4, Industrial Biotechnology | Mary Ann Liebert, Inc. publishers.

105) E. D'Oronzo, F. SECUNDO, B. Minofar, N. Kulik, A. A. Pometun, V. I. Tishkov

“Activation/inactivation role of ionic liquids on formate dehydrogenase from *Pseudomonas* sp. 101 and its mutated thermostable form”

ChemCatChem, (2018), 10, 3247–3259, 10.1002/cctc.201800145

104) L. Gao, J. Sun, F. SECUNDO, X. Gao, C. Xue, X. Mao

“Cloning, characterization and substrate degradation mode of a novel chitinase from *Streptomyces albolongus* ATCC 27414”

Food Chemistry (2018), 261, 329–336. doi.org/10.1016/j.foodchem.2018.04.068

103) P. Lu, X. Gao, H. Dong, Z. Liu, F. SECUNDO, C. Xue, and X. Mao

“Identification of a novel esterase from marine environmental genomic DNA libraries and its application in production of free all-trans-astaxanthin”

J. Agric. Food Chem. (2018), 66, 2812–2821, DOI: 10.1021/acs.jafc.7b06062

102) Tishkov V.I., Pometun A.A., Stepashkina A.V., Fedorchuk V.V., Zarubina S.A., Kargov I.S., Atroshenko D.L., Parshin P.D., Kovalevski R.P., Boiko K.M., Eldarov M.A., D'Oronzo E., Facheris S., SECUNDO F., Savin S.S.

“Rational design of practically important enzymes”

Moscow University Chemistry Bulletin, 2018, Vol. 73, No. 2.

101) Hala A. Amin, Francesco SECUNDO, Hassan Amara, Faten A. Mostafa, Wafaa A. Helmya.

"Improvement of *Aspergillus flavus* saponin hydrolase thermal stability and productivity via immobilization on a novel carrier based on sugarcane bagasse"

Biotechnology Reports. 2018, 17, 55-62. <https://doi.org/10.1016/j.btre.2017.12.007>

100) Olga Luisa Tavano, Angel Berenguer-Murcia, Francesco SECUNDO, Roberto Fernandez-Lafuente,

"Biotechnological Applications of Proteases in Food Technology"

Comprehensive Reviews in Food Science and Food Safety, 2018, 17, 412–436. doi: 10.1111/1541-4337.12326

99) F. Ghisleri, P. Fu, F. SECUNDO.

Water-Retaining Polymers in Organic Solvent Increase Lipase Activity for Biodiesel Synthesis,

Insights Enzyme Res 2017, 1:8 (8)

98) H. Dong, F. SECUNDO, C. Xue, and X. Mao

"Whole-cell biocatalytic synthesis of cinnamyl acetate with a novel esterase from the DNA library of *Acinetobacter haemolyticus*".

J. Agric. Food Chem., (2017), 65, 2120–2128. DOI: 10.1021/acs.jafc.6b05799.

97) A. Belafriekh, F. SECUNDO, S. Serra, Z. Djeghaba.

"Enantioselective enzymatic resolution of racemic alcohols by lipases in green organic solvents"

Tetrahedron: Asymmetry (2017), 28, 473–478 [dx.doi.org/10.1016/j.tetasy.2017.02.004](https://doi.org/10.1016/j.tetasy.2017.02.004)

96) E. Spadoni Andreani, F. Villa, F. Cappitelli, A. Krasowska, P. Biniarz, M. Łukaszewicz, F. SECUNDO

"Coating polypropylene surfaces with protease weakens the adhesion and increases the dispersion of *Candida albicans* cells"

Biotechnol Lett (2017) 39, 423–428, DOI 10.1007/s10529-016-2262-5

95) Fu P., SECUNDO F., "Algae and their bacterial consortia for soil bioremediation", Chemical Engineering

Transactions, (2016) 49, 427-432. DOI: 10.3303/CET1649072

94) E. Spadoni Andreani, L. Magagnin, F. SECUNDO

"Preparation and Comparison of Hydrolase-Coated Plastics"

ChemistrySelect (2016), 1, 1490 – 1495. DOI: 10.1002/slct.201600377

93) H.Oliveira, D.Vilas Boas, S. Mesnage, L.D.Kluskens, R.Lavigne, S.Sillankorva, F.SECUNDO and J. Azeredo

Structural and enzymatic characterization of ABgp46, a novel phage endolysin with broad anti-Gram-negative bacterial activity.

Front. Microbiol. (2016). 7:208. doi: 10.3389/fmicb.2016.00208

92) S. Wang, X. Meng, H. Zhou, Y. Liu, F. SECUNDO, Y. Liu

"Enzyme stability and activity in non-aqueous reaction systems: a mini review"

Catalysts 6, 32, (2016); doi:10.3390/catal6020032

91) F. Sasso, T. Kulschewski, F. SECUNDO, M. Lotti, J. Pleiss

"The effect of thermodynamic properties of solvent mixtures explains the difference between methanol and ethanol in *C.antarctica* lipase B catalyzed alcoholysis"

Journal of Biotechnology 214, 1–8 (2015).

- 90) P. Biniarz, E. Spadoni Andreani, A. Krasowska, M. Łukaszewicz, F. SECUNDO
"Effect of Immobilized Proteases on Bacterial Growth and Cell Adhesion on Polypropylene Surfaces"
J Clin Microbiol Biochem Technol 1(1): 007-009 (2015). <http://www.peertechz.com/Clinical-Microbiology-Biochemical-Technology/>
- 89) G. Roda, S. Fialà, M. Vittorini, F. SECUNDO.
"Fatty acid composition and fat content in milk from cows grazing in the Alpine region"
Eur. Food. Res. Technol. 241:413–418 (2015). DOI 10.1007/s00217-015-2473-3
- 88) F. Villa, F. SECUNDO, A. Polo, F. Cappitelli
"Immobilized hydrolytic enzymes exhibit antibiofilm activity against Escherichia coli at sub-lethal concentrations"
Current Microbiology 71(1):106-14 (2015). DOI 10.1007/s00284-015-0834-6
- 87) M. Lotti and F. SECUNDO.
Editorial: Protein stabilization – crossroad for protein-based processes and products.
Biotechnol. J. 10, 341–342 (2015), DOI 10.1002/biot.201500064
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