CURRICULUM VITAE

From 2015 Elisa Fasoli is Associate Professor (CHIM/07) in Politecnico di Milano, Department of Chemistry, Materials and Engineering Chemistry. She has gained experience in Proteomics, Analytical Chemistry, Biochemistry and Mass Spectrometry. In March 2013, Elisa Fasoli has obtained Italian National scientific habilitation for associate professorship in scientific sector 05/E1. In November 2018, Elisa Fasoli has obtained Italian National scientific habilitation for full professorship in scientific sectors 03/B2 and 03/D1.

Education

- 2016: visiting Professor (3 months) in the laboratory of Prof. Ernesto Simò-Alfonso in the Department of Analytical Chemistry of University of Valencia.
- 2015-present: Associate Professor (CHIM/07) in Politecnico di Milano, Department of Chemistry, Materials and Engineering Chemistry.
- 2011-2015: Assistant Professor in Politecnico di Milano.
- 2010: Researcher in a project funded by Regione Lombardia.
- 2009: visiting researcher at Laboratory of proteomics estructural, Institute of Biomedicine de Valencia, advisor Prof. J. Calvete, funded by FEBS (Federation of European Biochemical Societies) in the project: "Venomics: discovery of the hidden proteome".
- 2008-2010: Post-doctoral fellow in Politecnico di Milano. Supervisor Prof. Pier Giorgio Righetti.
- 2005-2008 University of Verona: Ph.D in Neuroscience in May 2008. Supervisor Prof. Salvatore Monaco.
- 1998-2004 University of Padova: Master Degree in Pharmaceutical Chemistry and Technology, 10th June 2004. Supervisor: Prof. Nicola Realdon. Grade: 110/110.

Research activity

Principal investigator of Proteomics Lab and Mass Spectrometry: since 2011, E.Fasoli directs the Laboratory of Proteomics and Mass Spectrometry in the Department of Chemistry, Materials and Engineering Chemistry in Politecnico di Milano.

Major research interests:

(1) Investigation of biocompatibility of nanostructures, like carbon nanotubes, with biological fluids, cell cultures and tissue samples, useful as drug delivery systems in nanomedicine.
(2) Development of new analytical tools and techniques for proteome detection: combinatorial peptide ligand libraries (CPLLs) for "deep proteome" investigations and nano-analytical methods for protein determination in food science.
(3) Analysis of the whole proteome by gel-based proteomics through the one- and two-dimensional gel electrophoresis, western blot assay, mass spectrometry analyses and bioinformatics.
(4)Top-down proteomics approach by the selection of target proteins sequences available from the main databases (NCBI, Swiss-Prot etc..) to built a customized local database for selected proteins Expertise in performing bioinformatics for proteomics by means of MASCOT search engine, that enhances efficiency of the bioinformatics and protein identification.

Teaching activities

From 2015: *"Proteomics Laboratory"* course (5CFU) at the School of Industrial Engeneering

and Information (Biomedical Engeneering, English language).
From 2014: *"Biomolecules: structure and functions"* course (7CFU) at the School of Industrial Engeneering and Information (Biomedical Engeneering, English language).
2013-2014: "Chemistry" course (3CFU) at the School of Construction Engineering-Architecture.
2012-2013: Chemistry laboratory for engineering students during General Chemistry course of Industrial Engineering and Information.
2008-2012: Proteomic laboratory for biomedical engineering students during Proteomic Course of Biomedical Engineering.
Elisa Fasoli was also supervisor of:

- Bachelor students: in Biomedical Engineering of Politecnico di Milano and in Pharmaceutical Chemistry of University of Milan.
- Master at foreign Ph.D. students from Department of Analytical Chemistry, (University of Alcalà, Madrid) and Department of Analytical Chemistry (Faculty of Chemistry, University of VALENCIA)

Participation to research projects

- Coordinator of the Italian project PRIN 2008 prot. 20087ATS57_003 "Use of combinatorial peptide ligand libraries for capturing and amplifying food allergens".
- Scientific responsible for a research contract concluded with Dr. B. Cuccia, chief of Swiss company BioApi SA. The title of research contract was "Analisi e caratterizzazione del principio attivo Urochinasi".
- Scientific responsible for a research contract concluded with Dr. B. Cuccia, chief of Swiss company BioApi SA. The title of research contract was "Caratterizzazione di Urochinasi durante le diverse fasi di stoccaggio del principio attivo".

Dissemination
Starting her research activity in 2001, Elisa Fasoli is co-author of more than *50 original peer-reviewed ISI papers* (Hindex = 19, Web of Science source, November 2018), which have collected more than 800 citations. She has received invitations for lectures at International Conferences, presenting also several oral and poster communications.
External Reviewer for several international journals (Journal of Chromatography A, Journal of Agricultural Food Chemistry, Electrophoresis, Food Chemistry, Journal of Proteomics, BBA Proteomics, Proteomics, Analytical and Bioanalytical Chemistry, Analytical Methods, Journal of functional Food, Proteome Science).
Conference organization: organization committee of VII Workshop AICIng "Smart materials for technology: preparation, self-assembly, characterization, modeling" ISBN: 978-88-6584-960-3, 12-13 June 2017, Politecnico di Milano.

Honors and awards

- Invited speaker in young scientists session during 20th International Symposium on Electro- and Liquid Phase-Separation Techniques in Canary Islands (Spain), October 6-9 2013
- Third prize winner as best poster during COST 3rd ANNUAL MEETING at University of Veterinary Medicine and Pharmacy in Kosice (Slovakia), 25-26 April 2013
- Invited speaker during V ICAP (International Congress on Analytical Proteomics) 2017, Caparica (Portugal), 3-6 July 2017

Technical skills and competences:

- Good knowledge of the following laboratory techniques:
  - Protein separation by reverse phase HPLC
  - Mass spectrometry analysis by MALDI-TOF and ESI-MS/MS and
  - Protein identification by using MASCOT (www.matrixscience.com) and BLAST(www.ncbi.nlm.nih.gov)
  - Use of combinatorial peptide libraries for protein enrichment of the sample
  - Method of IEF, Western-Blot, in 1D/2D electrophoresis
  - Immunohistochemistry and immunoelectron Microscopy
- Instrumentation:
  - Gas chromatography-mass spectrometry – Nano chromatographic system, UltiMate 3000 RSLCnano System (Thermo Scientific)
  - LTQ-XL mass spectrometer (Thermo Scientific) equipped with a nano spray ion source
  - Ultramicrotome (Reichert Ultracut S, Leica) microtome
  - Microscope (Olympus BH-2, Sony) and electron microscope (Zeiss EM 109)

Participation to more than 20 international congresses:

XIV ItPA Congress
Catanzaro, Italy, June 25th-27th 2019
E. Fasoli, M. Boreggio, E. Rosini, C. Gambarotti
"PROTEOMIC INVESTIGATION OF PROTEIN-CORONA ON FUNCTIONALIZED CARBON NANOTUBES"

V ICAP 2017 "V International Congress on Analytical Proteomics 2017"
Caparica, Lisbon (Portugal), July 3-6 2017
Invited speaker:
E. Fasoli, C. Capodanno, M. Nicoletti, C. Gambarotti
"PROTEOMICS APPROACHES FOR INVESTIGATION OF INTERACTION BETWEEN PROTEINS AND CARBON NANOTUBES"

Organization committee of VII Workshop AICIng "Smart materials for technology: preparation, self-assembly, characterization, mideling" ISBN: 978-88-6584-960-3
Milano (Italy), June 12-13 2017

IX Annual Congress-EUPA "European Proteomics Association"
Milano (Italy), June 23-28 2015
Poster:
E. Fasoli, M. J. Lerma-García, A. D'Amato, E. F. Simó-Alfonso and P. G. Righetti
"ORANGE PROTEOMIC FINGERPRINTING:FROM FRUIT TO COMMERCIAL JUICES"

HUPO 2014 Madrid, 13th Human Proteome Organization World Congress
Madrid (Spain), October 5-8 2014
Posters:
E. Fasoli, A. D'Amato, M. Colzani, G. Aldini, M. J. Lerma-García E. F. Simó-Alfonso and P. G. Righetti
"PROTEOMIC FINGERPRINTING OF ITALIAN APERITIFS"
E. Fasoli, A. D'Amato and P. G. Righetti
"CHARACTERIZATION OF UROKINASE VIA ELECTROPHORESIS AND MASS SPECTROMETRY ANALYSES"
D'Amato A, Esteve C,Marina ML, Garcia MC, Righetti PG, Fasoli E.
"THE PROTEOME OF OLIVE AND THE INVISIBLE PROTEOME OF OLIVE OILS"

ItPA Annual Congress
Padova, Italy, June 18-21 2013
ITP2013-20th International Symposium on Electro- and Liquid Phase-Separation Tecniques
Tenerife, Canary Islands (Spain), October 6-9 2013
Oral comunication: E. Fasoli, A. D'Amato C. Esteve, A. Citterio and P. G. Righetti
"A TRIO OF TROPICAL FRIUTS FOR A PROTEOMIC SAMBA"

COST 3rd ANNUAL MEETING
University of Veterinary Medicine and Pharmacy, Kosice, Slovakia, 25-26 April 2013
Poster: E. Fasoli, A. D'Amato, V. Cunsolo, A. Citterio, P. G. Righetti
The "hidden" proteome of cow's and donkey's milk as revealed by combinatorial peptide ligand libraries

19TH INTERNATIONAL SYMPOSIUM, EXHIBIT ON ELECTRO- AND LIQUID PHASE-SEPARATION TECHNIQUES.
Baltimore, Maryland,30 September- 3 October 2012
7° CONGRESSO NAZIONALE di ITALIAN PROTEOMICS ASSOCIATION
Viterbo, Italy, 12-15 June 2012
Oral comunication: Fasoli E, Shahali Y, Sutra JP, D'Amato A, Righetti PG, Futamura N, Boschetti E, Sénéchal H, Poncet P.
"Allergomic study of cypress pollen via combinatorial peptide ligand libraries."

18th International Symposium on Electro- and Liquid Phase-separation Techniques, ITP 2011
Tbilisi, Georgia, 28 August- 02 September 2011
Oral communication: E. Fasoli, A. D'Amato, A. and P. G. Righetti
"COMBINATORIAL PEPTIDE LIGAND LIBRARIES:AN INNOVATIVE TECHNOLOGY FOR INVESTIGATING THE PROTEOMIC FINGERPRINT OF NON-ALCOHOLIC BEVERAGES"

4th Congress of the Spanish Proteomics Society
Segovia, Madrid, Spain, 8-11 February 2011

16th International Symposium on Separation Sciences – Recent Advancements in Chromatography and Capillary Electromigration Techniques
Rome, Italy, 6-10 September 2010

4th EuPA Meeting, Proteomic Odyssey
Estoril, Portugal, 23-27 October 2010

17th International Symposium and Exhibit on Capillary Electroseparation Techniques
Baltimore, Maryland, U.S.A, 29 August-1 September 2010

25th International Symposium on Microscale BioSeparations MSB 2010
Prague, Czech Republic, 21-25 March 2010, Oral comunication

5th AOHUPO Congress, 14th ADNAT Convention and 1st PSI Conference
Hyderabad India, 21-25 February 2010, poster

BPV - Blood and Proteomics in Viterbo
Viterbo, Italia, 12-14 October 2009

Meeting EuroKUP e 3° Congresso della Società Ellenistica di Proteomica
Nafplion, Greece 28 March-1 April 2009

16th International Symposium in Capillary Elettromigration Techniques (ITP 2008),
Catania 31 August- 4 September 2008

"XLIII Congresso AINP", Verona 30 September -3 October 2007

"Prion 2007", Edinburgh 25-28 September 2007

"2nd Conference of Hellenic Proteomic Society", Crete, Greece 23-25 May 2007
"Prion 2006", Turin 3-6 October 2006
Second IPSo Congress Proteomic and Genomic, Viterbo 29 May-1 June 2005
International Conference Prion 2005, Dusseldorf, Germany, 19-21 April 2005

Publications in international scientific journals

1. Lerma-García MJ, Nicoletti M, Simó-Alfonso EF, Righetti PG, Fasoli E.
   "Proteomic fingerprinting of apple fruit, juice, and cider via combinatorial peptide ligand libraries and MS analysis." Electrophoresis. 2019; 40(2): 266-271.
2. Nicoletti M, Capodanno C, Gambarotti C, Fasoli E.
   "Proteomic investigation on bio-corona of functionalized multi-walled carbon nanotubes." Biochim Biophys Acta Gen Subj. 2018; 1862(10):2293-2303.
3. Candiani G, Fasoli E.
   "A stepwise approach for the isolation and the identification of chemically reactive exofacial protein thiols", Protein Pept Lett. 2017; 24(7): 633-642.
4. Vergara-Barberán M, Lerma-García MJ, Nicoletti M, Simó-Alfonso EF, Herrero-Martínez JM, Fasoli E, Righetti PG.
   "Proteomic fingerprinting of mistletoe (Viscum album L.) via combinatorial peptide ligand libraries and mass spectrometry analysis", J Proteomics. 2017; 164: 52-58.
5. Casciello C, Tonin F, Berini F, Fasoli E, Marinelli F, Pollegioni L, Rosini E.
   "A valuable peroxidase activity from the novel species *Nonomuraea gerenzanensis* growing on alkali lignin", Biotechnol Rep (Amst). 2017; 13: 49-57.
6. Cunsolo V, Fasoli E, Di Francesco A, Saletti R, Muccilli V, Gallina S, Righetti PG, Foti S.
   "Polyphemus, Odysseus and the ovine milk proteome", J Proteomics. 2017; 152: 58-74.
7. González-García E, Marina ML, García MC, Righetti PG, Fasoli E.
   "Identification of plum and peach seed proteins by nLC-MS/MS via combinatorial peptide ligand libraries", J Proteomics. 2016; 148: 105-12.
8. Aiello G, Fasoli E, Boschin G, Lammi C, Zanoni C, Citterio A, Arnoldi A.
   "Proteomic characterization of hempseed (Cannabis sativa L.)", J Proteomics. 2016; 147: 187-96.
9. Altomare A, Fasoli E, Colzani M, Parra XM, Ferrari M, Cilurzo F, Rumio C, Cannizzaro L, Carini M, Righetti PG, Aldini G.
   "An in depth proteomic analysis based on ProteoMiner, affinity chromatography and nano-HPLC-MS/MS to explain the potential health benefits of bovine colostrum", J Pharm Biomed Anal. 2016; 121: 297-306.
10. Lerma-García MJ, D'Amato A, Simó-Alfonso EF, Righetti PG, Fasoli E.
    "Orange proteomic fingerprinting: From fruit to commercial juices", Food Chem. 2016; 196: 739-49.
11. Colzani M, Altomare A, Caliendo M, Aldini G, Righetti PG, Fasoli E.
    "The secrets of Oriental panacea: Panax ginseng", J Proteomics. 2016; 130: 150-9.
12. Cunsolo V, Fasoli E, Saletti R, Muccilli V, Gallina S, Righetti PG, Foti S.
    "Zeus, Aesculapius, Amalthea and the proteome of goat milk", J Proteomics. 2015; 128: 69-82.
13. Fasoli E, Righetti PG, Moltrasio D, D'Amato A.
    "Extensive heterogeneity of human urokinase, as detected by two-dimensional mapping", Anal Chem. 2015; 87(3): 1509-13.
14. Righetti PG, Esteve C, D'Amato A, Fasoli E, Luisa Marina M, Concepción García M.
    "A sarabande of tropical fruit proteomics: Avocado, banana, and mango" Proteomics. 2014; 15(10):1639-45.
15. Lerma-Garcìa MJ, D'Amato A., Fasoli E:, Simò-Alfonso EF, Righetti PG
    "According to the CPLL proteome sheriffs, not all aperitifs are created equal!" Biochim. Biophys Acta. 2014; 1844 (9): 1493-1499.
16. Cilindre C., Fasoli E., D'Amatao A., Liger-Belair G., Righetti P.G.
    "It's time to pop a cork on Champagne's proteome!" J. Proteomics 2014; 105: 351-362.
17. D'Amato A., Esteve C., Fasoli E., Citterio A., Righetti PG

"Proteomic analysis of Lycium barbarum (Goji) fruit via combinatorial peptide ligand libraries" Electroph.2013; 00:1-8

18. Fasoli E, Righetti PG.
    "The peel and pulp of mango fruit: A proteomic samba" Biochim Biophys Acta. 2013;1834(12):2539-45.
19. Fasoli E, Colzani M, Aldini G, Citterio A, Righetti PG
    "Lemon peel and Limoncello liqueur: a proteomic duet" Biochim Biophys Acta. 2013;1834(8):1484-91.
20. Saez V, Fasoli E, D'Amato A, Simó-Alfonso E, Righetti PG.
    "Artichoke and Cynar liqueur: Two (not quite) entangled proteomes." Biochim Biophys Acta. 2012; 1834(1):119-126.
21. Shahali Y, Sutra JP, Fasoli E, D'Amato A, Righetti PG, Futamura N, Boschetti E, Sénéchal H, Poncet P.
    "Allergomic study of cypress pollen via combinatorial peptide ligand libraries." J Proteomics. 2012; 77:101-110.
22. Fasoli E, D'Amato A, Righetti PG, Barbieri R, Bellavia D.
    "Exploration of the sea urchin coelomic fluid via combinatorial peptide ligand libraries." Biol Bull. 2012;222(2):93-104.
23. Fasoli E, D'Amato A, Citterio A, Righetti PG.
    "Anyone for an aperitif? Yes, but only a Braulio DOC with its certified proteome." J Proteomics. 2012 18;75(11):3374-9.
24. Fasoli E, D'Amato A, Citterio A, Righetti PG.
    "Ginger Rogers? No, Ginger Ale and its invisible proteome." J Proteomics. 2012; 16;75(6):1960-5.
25. D'Amato A, Fasoli E, Righetti PG.
    "Harry Belafonte and the secret proteome of coconut milk." J Proteomics. 2012;75(3):914-20.
26. Righetti PG, Fasoli E, Righetti SC.
    "Conventional isoelectric focusing. In gel slabs and capillaries and immobilized pH gradients." Methods Biochem Anal. 2011;54:379-409. Review.
27. D'Amato A, Fasoli E, Kravchuk AV, Righetti PG.
    "Mehercules, adhuc Bacchus! The debate on wine proteomics continues." J Proteome Res. 2011;10(8):3789-801.
28. Cunsolo V, Muccilli V, Fasoli E, Saletti R, Righetti PG, Foti S.
    "Poppea's bath liquor: the secret proteome of she-donkey's milk." J Proteomics. 2011;74(10):2083-99.
29. Righetti PG, Boschetti E, Fasoli E.
    "Capturing and amplifying impurities from recombinant therapeutic proteins via combinatorial peptide libraries: a proteomic approach." Curr Pharm Biotechnol. 2011;12(10):1537-47. Review
30. D'Amato A, Fasoli E, Kravchuk AV, Righetti PG.
    "Going nuts for nuts? The trace proteome of a Cola drink, as detected via combinatorial peptide ligand libraries." J Proteome Res. 2011;10(5):2684-6.
31. Righetti PG, Fasoli E, Boschetti E.
    "Combinatorial peptide ligand libraries: the conquest of the 'hidden proteome' advances at great strides." Electrophoresis. 2011;32(9):960-6. Review.
32. Fasoli E, D'Amato A, Kravchuk AV, Citterio A, Righetti PG.
    "In-depth proteomic analysis of non-alcoholic beverages with peptide ligand libraries. I: Almond milk and orgeat syrup." J Proteomics. 2011;74(7):1080-90.
33. Fasoli E, D'Amato A, Kravchuk AV, Boschetti E, Bachi A, Righetti PG.

"Popeye strikes again: The deep proteome of spinach leaves" J Proteomics. 2011;74(1):127-36.

34. Fasoli E, Aldini G, Regazzoni L, Kravchuk AV, Citterio A, Righetti PG.
"Les Maîtres de l'Orge: the proteome content of your beer mug"
J Proteome Res. 2010;9(10):5262-9.
35. Righetti PG, Boschetti E, Kravchuk AV, Fasoli E.
"The proteome buccaneers: how to unearth your treasure chest via combinatorial peptide ligand libraries"
Expert Rev Proteomics. 2010;7(3):373-85.
36. A. D'Amato, A. Bachi, E. Fasoli, E. Boschetti, G. Peltre, H. Sénéchal, A. Citterio, P. G. Righetti
"In-depth exploration of Hevea brasiliensis latex proteome and "hidden allergens" via combinatorial peptide ligand libraries"
Journal of Proteomics, 2010; 73(7): 1368-80.
37. Zilberstein G, Shlar I, Korol L, Baskin E, Fasoli E, Righetti PG, Torri G, Bisio A, Bukshpan S
"Focusing of low-molecular-mass heparins in polycationic polyacrylamide matrices"
Anal Chem. 2009; 81(16): 6966-71.
38. D'Alessandro A, Righetti PG, Fasoli E, Zolla L.
"The egg white and yolk interactomes as gleaned from extensive proteomic data"
Journal of Proteomics, 2010;73(5):1028-42.
39. E. Fasoli, L. Sanz, S. C Wagstaff, R. A Harrison, P. G. Righetti, J. J. Calvete.
"Exploring the venom proteome of the African puff adder, Bitis arietans, using a combinatorial peptide ligand library approach at different pHs"
Journal of Proteomics, 2010;73(5):932-42.
40. Fasoli E, Farinazzo A, Sun CJ, Kravchuk AV, Guerrier L, Fortis F, Boschetti E, Righetti PG.
"Interaction among proteins and peptide libraries in proteome analysis: pH involvement for a larger capture of species"
Journal of Proteomics, 73 (2010), 733-742.
41. Righetti PG, Boschetti E, Zanella A, Fasoli E, Citterio A.
"Plucking, pillaging and plundering proteomes with combinatorial peptide ligand libraries"
J. Chromatogr. A 1217 (2010) 893-900.
42. G. Zilberstein, I. Shlar, L. Korol, E. Baskin, E. Fasoli, P. G. Righetti, G. Torri, A. Bisio, S. Bukshpan
"Focusing of Low-Molecular-Mass Heparins in Polycationic Polyacrylamide Matrices"
Analytical Chemistry 2009**,** 81*,* 6966–6971A.
43. D'Amato A, Bachi A, Fasoli E, Boschetti E, Peltre G, Sénéchal H, Righetti PG.
"In-depth exploration of cow's whey proteome via combinatorial peptide ligand libraries"
J Proteome Res. 2009;8(8):3925-36.
44. U. Restuccia, E. Boschetti, E.Fasoli, F. Fortis, L. Guerrier, A. Bachi, AV. Kravchuk, P.G. Righetti
"pI-based fractionation of serum proteomes versus anion exchange after enhancement of low-abundance proteins by means of peptide libraries"
J Proteomics. 2009;72(6):1061-70.
45. JJ. Calvete, E. Fasoli, L. Sanz, E. Boschetti, P.G. Righetti
"Exploring the venom proteome of the western diamondback rattlesnake, Crotalus atrox, via snake venomics and combinatorial peptide ligand library approaches"
Journal Proteome Research, 2009;8(9);3055-67.
46. A. Farinazzo, E. Fasoli, A. Kravchuk, G. Candiano, G. Aldini, L. Regazzoni, P.G. Righetti
"En bloc elution of protomes from combinatorial peptide ligand libraries"

Journal of Proteomics, 72 (2009), 725-730.
47. E. Fasoli, E.A. Pastorello, L. Farioli, J. Scibilia, G. Aldini, M. Carini, A. Marocco, E. Boschetti,
P.G. Righetti
"Searching for allergens in maize kernels via proteomic tools"
Journal of Proteomics, 72 (2009), 501-510.
48. Egisto Boschetti; Laurence Bindschedler; Chaorong Tang; E. Fasoli; P.G. Righetti
"Combinatorial peptide ligand libraries and plant proteomics: a winning strategy at a price"
Journal of Chromatography A, 1216 (2009) 1215-1222.
49. P. Antonioli; A. Bachi; E. Fasoli; P.G. Righetti
"Efficient removal of DNA from proteomic samples prior to two-dimensional map analysis"
Journal of Chromatography A, 1216 (2009), 3606-3612.
50. A. Farinazzo, U. Restuccia, A. Bachi, L. Guerrier, E. Boschetti, E. Fasoli, A. Citterio, P.G. Righetti
"Chicken egg yolk cytoplasmic proteome, mined via combinatorial peptide ligand libraries"
Journal of Chromatography A, 1216 (2009) 1241-1252.