

Elisa Robotti

Curriculum vitae

PERSONAL DATA

Born in Alessandria on 01.12.1976

BIO AND EDUCATION

She graduated in Chemistry in 2001 with full marks at the University of Piemonte Orientale. She gained her PhD in Chemical Sciences in 2005 at the same University, with a thesis titled: "Strategies and chemometric methods of multivariate analysis for the solution of analytical problems". She is co-author of more than 66 papers on national and international magazines (total IF 194, average IF 3.47, citations: 899; h-index Scopus: 20 – May 2016) and 11 book chapters. She is editor of a volume on the analysis of 2D-PAGE maps. She participated to more than 47 national and International Congresses. She was tutor of more than 10 Degree and master degree Theses in Chemistry and Chemical Sciences. She participated and now participates to several national and international projects (PRIN 2000, PRIN 2003, MEMIP-09, Focused research 2009, Israel Antiquity Authority 2011, CARIPLO 2012, CRT 2014, CARIPLO 2015, IZSPV 2015).

UNIVERSITY CAREER

2015 - now	Adjunct Professor of Analytical Chemistry, Università del Piemonte Orientale
2011 - 2015	Researcher of Analytical Chemistry, Università del Piemonte Orientale
2007 – 2011	Contract Professor of Analytical Chemistry, Università del Piemonte Orientale
2005 – 2011	Grant or Scholarship Holder, Università del Piemonte Orientale

UNIVERSITY POSITIONS

2015 - now	Member of the Group of Re-examination for the Degree Courses in Chemistry and Chemical Sciences
2015 - now	Supervisor of the website for the Degree Courses in Chemistry and Chemical Sciences

SCIENTIFIC POSITIONS

2001 - now	Member of the Division of Analytical Chemistry of the Italian Chemical Society (SCI)
2009 - now	Reviewer for several scientific magazines

MAIN FIELDS OF INTEREST

1. Analytical Chemistry
2. Biomarkers identification
3. Chemometrics and application of artificial neural networks
4. Characterization of typical food, traceability and authentication studies
5. Elemental analysis
6. Development, optimization and validation of analytical methods
7. Proteomics
8. Cultural Heritage
9. Control and optimization of processes and products
10. Experimental design

CURRENT ISSUES OF RESEARCH

1. Proteomic studies for the identification of biomarkers

Proteomic studies by 2D-PAGE or shotgun proteomics (or genomics) and application of multivariate chemometric methods for the identification of biomarkers of pathologies or for the study of the mechanism of action of different pathologies (cancer, nicotine effect, heart attack, diabetes etc), environmental effects (heavy metals and pesticides on mitili, plants and bacteria) and for food characterization (grapes, meat etc).

2. Chemical characterization of food and traceability and authentication studies

Chemical characterization of food (cheese, wine, salami, tomato sauce, olive oil, vegetal milk, grana, balsamic vinegars, honey etc) by liquid chromatography (HPLC, HPLC-MS, UPLC-MS/MS, ionic chromatography), elemental analysis (ICP-MS and ICP-OES), analysis of the volatile fraction (GC-MS), devoted to perform traceability and authentication studies.

3. Development and application of chemometric methods

Development and application of chemometric methods for the solution of analytical and industrial problems: multivariate calibration also by means of artificial neural networks, optimization of analytical methods and industrial processes7products, experimental design, classification methods, biomarker identification, industrial quality control.

4. Development, optimization and validation of analytical methods

Development, optimization and validation of analytical methods for the determination of emerging contaminants and pollutants by HPLC-MS, GC-MS, ICP-MS.

5. Monitoring of the preservation state of cultural heritage goods

Development of innovative strategies for monitoring the preservation status of cultural heritage goods (e.g. Dead Sea Scrolls in Israel etc.) based on spectroscopic techniques and LED Imaging systems and the use of chemometric methods.

CURRENT FUNDED PROJECTS

PROGRAMME	PROGRAMME
Bando Cariplo 2015	<u>"Molecular linkage between translation, epigenetic changes, metabolism and the development of insulin resistance"</u>

TOP FIVE PAPERS

1. E. Robotti, M. Demartini, F. Gosetti, G. Calabrese, E. Marengo, "Development of a classification and ranking method for the identification of possible biomarkers in proteomics based on Principal Component Analysis and variable selection procedures", *Molecular Biosystems* 7(3), 677-686, 2011
2. E. Robotti, F. Gosetti, E. Mazzucco, D. Zampieri, E. Marengo, "Iterative optimisation of an ESI IT mass spectrometer by the use of a multivariate function representing the S/N ratio and regular simplex", *Journal of the American Society for Mass Spectrometry* 22, 118-129, 2011
3. U. Chiuminatto, F. Gosetti, P. Dossetto, E. Mazzucco, D. Zampieri, E. Robotti, M.C. Gennaro, E. Marengo, "An innovative on-line solid phase extraction ultra performance liquid chromatography coupled with tandem mass spectrometry detection method for simultaneous identification and quantitation of forty-two therapeutic and abuse drugs in human urines", *Analytical Chemistry* 82, 5636-5645, 2010
4. E. Marengo, M. Manfredi, O. Zerbinati, E. Robotti, P. Shor, G. Bearman, F. France, "A new technique based on LED Multispectral Imaging and multivariate analysis for monitoring the conservation and preservation of the Dead Sea Scrolls", *Analytical Chemistry*, 83(17), 6609-6618, 2011
5. Rita Polati, Michele Menini, Elisa Robotti, Renato Millionsi, Emilio Marengo, Enrico Novelli, Stefania Balzan, Daniela Cecconi, "Proteomic changes involved in tenderization of bovine Longissimus dorsi muscle during prolonged aging", *Food Chemistry* 135, 2052-2069, 2012

AWARDS

1. 1st prize for the best poster presentation at Congress Euroanalysis XV, Innsbruck (Austria), 6-10 September 2009
2. 2005 Young Researcher Prize from the Division of Analytical Chemistry of the Italian Chemical Society
3. GRANT for the participation to the Congresses Euroanalysis XIII, XIV, XV

4. Fellowship from the Division of Analytical Chemistry of the Italian Chemical Society for the participation to the Congresses Euroanalysis XIII and XIV
5. 4th prize for the best poster presentation at ITPA2010 Congress, Firenze (Italy), 9-12 June 2010
6. Prize for the best presentation of the Theme "Environment" by a Young Researcher at CMA4CH 2006 Congress
7. Third prize for the most download work from the website of CMA4CH Congress (<http://w3.uniroma1.it/cma4ch>).