

# Emilio Marengo

## *Curriculum vitae*

### PERSONAL DATA

Born in Turin on 17.03.1959

### BIO AND EDUCATION

He graduated in Chemistry in 1983 with full marks at the University of Torino. He is co-author of more than 130 papers on national and international magazines (Total I.F. 390; average I.F. 3) and more than 9 book chapters. He is editor of a scientific volume on the analysis of 2D-PAGE maps. The sum of the citations of his publications is 2404, with an h-index equal to 28 (from Scopus). He participated to more than 100 National and International Congresses with three plenary lectures. He now is Responsible of the Group of Analytical Chemistry and Chemometrics. He was tutor of more than 50 Degree Thesis for the Degree Courses of chemistry and Chemical Sciences. He is supervisor of more than 8 PhD Students.

### UNIVERSITY CAREER

2008 – oggi	Full Professor of Analytical Chemistry, University of Piemonte Orientale
1998 - 2008	Adjunct Professor of Analytical Chemistry, University of Piemonte Orientale
1994 – 1998	Contract Professor, Polytechnic of Torino

### UNIVERSITY POSITIONS

2015 - oggi	President of the Council of the Degree Courses of Chemistry and Chemical Sciences
2015 - oggi	Member of the Council of the Department
2015 – oggi	Member of the Strategy Commission
2015 – oggi	President of the Teaching Commission of the Degree Courses of Chemistry and Chemical Sciences
2015 – oggi	Department Responsible for the development of the project of the center of Autoimmune Diseases

### SCIENTIFIC POSITIONS

2001 - now	Member of the Division of Analytical Chemistry of the Italian Chemical Society (SCI)
1998 - now	Reviewer for several scientific magazines
2001 – 2004	Active member of the Interuniversity Consortium CIMACQ (Analytical Methodologies and Quality Control, PR)

## MAIN FIELDS OF INTEREST

1. Analytical Chemistry
2. Development, optimization and validation of analytical methods
3. Proteomics and metabolomics
4. Identification of biomarkers
5. Food and environmental safety
6. Characterization of typical food
7. Cultural Heritage
8. Elemental Analysis
9. Chemometrics
10. Artificial Neural networks

## CURRENT ISSUES OF RESEARCH

### 1. 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.

### 2. Proteomic studies for the identification of biomarkers

Proteomic studies by mean of SDS 2D-PAGE or shotgun proteomics and the application of multivariate chemometric methods, to identify biomarkers for various diseases or for studying the diseases development mechanism (different type of cancer, self-immune diseases, heart struck, viruses, leukemia, etc.), environmental effects (effects of heavy metals and pesticides on shells, plants, bacteria) and food characterization.

### 3. 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, paintings and manuscripts at the Library of the Congress in Washington and Getty Museum, etc.) based on LED Imaging systems and the use of chemometric methods.

### 4. Chemical characterization of dietary and typical food products

Characterization of dietary and typical food products (cheese, wines, salami, olive oil, tomato sause etc.) by mean of liquid chromatography (HPLC, UPLC-MS/MS, UPLC-High Res MS/MS, ionic chromatography), elemental analysis (ICP-MS and ICP-OES), volatile fraction analysis (GC-MS).

### 5. Metabolomics

Study of the degradation pathways of food preservatives, colorants and additives, of pesticides and chemicals in the environment or in plants and animals.

## 6. Development and application of chemometric methods also based on artificial neural networks

Development and application of chemometric methods for the identification of biomarkers, process and product control, experimental design, also applied to industrial processes.

### CURRENT FUNDED PROJECTS

PROGRAMME	FUNDED PROJECT
CRT 2014	<u>IMMUNO-MARK - "Development of new diagnostic methods by High Resolution HPLC-MS for the identification of biomarkers in autoimmune diseases"</u>
CARIPLO 2014	<u>WATPAD - "Water Impacts of Paddy Environment"</u>
IZSLER 2015	<u>"Chemometrics for the traceability of agro-food excellences"</u>
Regione Piemonte 2015	<u>"Development of new diagnostic approaches for the use of the biomarker IFI16 in autoimmune diseases"</u>

### TOP FIVE PAPERS

1. Gosetti F, Bolfi B, Marengo E, "Identification of sulforhodamine B photodegradation products present in nonpermanent tattoos by micro liquid chromatography coupled with tandem high-resolution mass spectrometry", *Analytical and Bioanalytical Chemistry* 407(16), 4649-4659, 2015
2. Gosetti F, Mazzucco E, Gennaro MC, Marengo E, "Simultaneous determination of sixteen underivatized biogenic amines in human urine by HPLC-MS/MS", *Analytical and Bioanalytical Chemistry* 405(2-3), 907-916, 2013
3. Marengo E, Manfredi M, Zerbinati O, Robotti E, Mazzucco E, Gosetti F, Bearman G, France F, Shor P, "Technique based on LED multispectral imaging and multivariate analysis for monitoring the conservation state of the dead sea scrolls", *Analytical Chemistry* 83(17), 6609-6618, 2011
4. Marengo E, Robotti E, Bobba M, Gosetti F, "The principle of exhaustiveness versus the principle of parsimony: A new approach for the identification of biomarkers from proteomic spot volume datasets based on principal component analysis, *Analytical and Bioanalytical Chemistry* 397(1), 25-41, 2010
5. Marchetti C, Clericuzio M, Borghesi B, Cornara L, Ribulla S, Gosetti F, Marengo E, Burlando B, "Oleuropein-Enriched Olive Leaf Extract Affects Calcium Dynamics and Impairs Viability of Malignant Mesothelioma Cells", *Evidence-based Complementary and Alternative Medicine* 2015, n°908493