

CURRICULUM VITAE

FORMATO EUROPEO/EUROPEAN FORMAT

INFORMAZIONI PERSONALI/ PERSONAL INFORMATION

Nome, Cognome/Name, Surname	Massimo Onor
Indirizzo/Address Via, numero civico, c.a.p., città, nazione/ House number, street name, postcode, city, country	Italian National Research Council (CNR)-Institute for Chemistry of Organo-Metallic Compounds (ICCOM, Pisa)-Laboratory of Instrumental Analytical Chemistry, Via G. Moruzzi 1, 56124- Pisa, ITALY.
Telefono/Telephone	39-050-315.2560
Fax	39-050-315.2555
E-mail	onor@pi.iccom.cnr.it
Nazionalità/Nationality	Italian
Luogo e data di nascita/ Place and Date of birth	Livorno (Italy), 21-01-1963

ESPERIENZA PROFESSIONALE/ WORK EXPERIENCE

Se dipendente CNR indicare:	MATRICOLA N. 83977 QUALIFICA CTER LIVELLO IV
In ordine di data /Dates (from – to)	July 2001 - present
Nome e indirizzo del datore di lavoro / Name and address of employer	Italian National Research Council (CNR)- Institute for Chemistry of Organo-Metallic Compounds (ICCOM, Pisa) Via G. Moruzzi 1, 56124- Pisa, ITALY
Tipo o settore di attività / Type of business or sector	Laboratory of Instrumental Analytical Chemistry
Funzione o posto occupato / Occupation or position held	Technician with full support to research activity
Principali mansioni e responsabilità / Main activities and responsibilities	New highlights in vapor generation were recently given by the application of trialkyloxonium tetrafluoroborate (TAOTF) salts as alkylating agent can form volatile or semi-volatile alkyl derivatives of anionic and nucleophilic species - Development a new vapor generation method to quantified nitrite and nitrate in complex matrix by GC-MS isotope dilution. Analytical determination of trace and ultra-trace elements by atomic spectrometry techniques (Atomic Absorption Spectrometry, Atomic Fluorescence Spectrometry) and hyphenated techniques (LC-AFS). Development of analytical methods for elements speciation. Study of mechanism of reaction of tetrahydroborate decomposition and its derivatives and elements which form volatile hydrides. Development of a prototype of non dispersive atomic fluorescence spectrometer for the characterization of atomic spectra of elements which form volatile hydrides. Technical support to students and visiting scientists. Responsible of Gas-Chromatography -Mass-Spectrometry, Atomic Fluorescence and HPLC laboratories
In ordine di data /Dates (from – to)	April 1990-July 2001
Nome e indirizzo del datore di lavoro	University of Pisa, Department of Chemistry (Pisa, Italy) – Via Risorgimento Pisa ITALY

<p>/ Name and address of employer Tipo o settore di attività / Type of business or sector Funzione o posto occupato / Occupation or position held Principali mansion e responsabilità / Main activities and responsibilities</p>	<p>Laboratory of Analytical Chemistry Technician Optimization of analytical methodologies and development of instrumentation for the determination and certification of organic compounds in natural matrices by hyphenated techniques (GC/MS, GC/MS/MS, SFE/GC/MS and HPLC/SFE/GC/MS); Optimization of analytical methods and development of instrumentation for trace and ultra-trace elements (metals and anions) in aqueous samples by liquid chromatography (HPLC, IC and RPC coupled to on-line preconcentration systems. Technical support to students and visiting scientists. Technical management of laboratories.</p>
<p>In ordine di data /Dates (from – to) Nome e indirizzo del datore di lavoro / Name and address of employer Tipo o settore di attività / Type of business or sector Funzione o posto occupato / Occupation or position held Principali mansion e responsabilità / Main activities and responsibilities</p>	<p>1988-April 1990 MONTEDIPE, Mantova, ITALY Research center Technician Qualitative and Quantitative characterization of polymeric organic products, intermediates, additives and by-products, by mass spectrometry (MS), gas chromatography coupled to FTIR-MS, liquid chromatography (HPLC) with various detectors (electrochemical, spectrophotometric and refractive index detector).</p>
<p>In ordine di data /Dates (from – to) Nome e indirizzo del datore di lavoro / Name and address of employer Tipo o settore di attività / Type of business or sector Funzione o posto occupato / Occupation or position held Principali mansion e responsabilità / Main activities and responsibilities</p>	<p>1987-1988 Army Medical Center (Livorno, Italy) Clinical Chemistry Laboratory Medical Center Technician (army service) Development of analytical method for determination of drugs in biological samples by immunological and chromatographic techniques.</p>

**ISTRUZIONE E FORMAZIONE /
EDUCATION AND TRAINING**

<p>In ordine di data /Dates (from – to) Nome e tipo d'istituto di istruzione o formazione / Name and type of organisation providing education and training Principali materie e competenze professionali apprese / Principal subjects occupational skills covered Certificato o diploma ottenuto /Title of qualification awarded Livello nella classificazione nazionale o internazionale / Level in National classification</p>	<p>1976-1981 Technical College G. Galilei Via Galilei 1 Livorno ITALY General Chemistry, Analytical Chemistry, Industrial Chemistry Industrial chemical technician Diploma (rating 55/60)</p>
--	--

**ATTIVITA' DI RICERCA /
RESEARCH ACTIVITIES**

Attuali campi di ricerca / Research
sectors

Research Interests:

Gas Chromatography-Mass Spectrometry, Liquid Chromatography with UV/Vis, electrochemical, fluorescence detectors, Atomic Spectrometry (AAS and AFS).

Recenti attività scientifiche/ Recent
Scientific Activities.

Development and optimization of a hyphenated system LC coupled to non dispersive atomic fluorescence detector for the study of arsenic in wines and thiolic proteins. Development of a cell for pressure measurements equipped by a fast data acquisition system for the study of mechanism of reaction of tetrahydroborate decomposition and its derivatives. Development and optimization of an analytical methodology (TD-GCMS) for the study of the composition and determination of compounds in human breath condensate as specific markers of several pathologies and development of portable instruments equipped with specific sensors for patient screening. Development and optimization of an analytical methodology for saliva and sweat analysis. Co-author of 40 publications in international journals and about 20 abstract presentations in international meetings.

**ULTERIORI INFORMAZIONI /
ADDITIONAL INFORMATION**

Cooperation with PMI and Thermo Electron for personnel training and support to mass spectrometry management.

Cooperation with public departments (University of Pisa, Institute of Clinical Physiology, CNR) in development and optimization of an analytical methodology (TD-GCMS) for the determination of compounds in human breath condensate, the development of portable instruments equipped with specific sensors for patient screening and optimization of an analytical methodology for saliva and sweat analysis.

Publicazioni/ Books and Articles

- Betti, M.; Giovannoni, G.; Onor, M.; Papoff, P.,
Optimization of the procedure for the determination of alkali and alkaline-earth elements in sea-water by suppressed Ion-Chromatography.
Journal of Chromatography 1991, 546 (1-2), 259-271.
- Papoff, P.; Betti, M.; Onor, M.; Giovannoni, G.,
Individual spread of concentrations of alkali and alkaline-earth elements in sea water samples from Terranova bay Ross sea (Antarctica)2.
Annali Di Chimica 1991, 81 (7-8), 297-315.
- Papoff, P.; Giacomelli, A.; Onor, M.,
Ion chromatography- A powerful and versatile analytical technique for environmental chemical characterization.
Microchemical Journal 1992, 46 (3), 385-398.
- Papoff, P.; Onor, M.; Betti, M.,
Ammonium, alkaline and alkaline-earth elements determination in Antarctic lake waters, flowing melt waters and snow.
International Journal of Environmental Analytical Chemistry 1994, 55 (1-4), 149-164.
- Papoff, P.; Bocci, F.; Onor, M.,
Distribution of macro- and microcomponents in the water column of the Antarctic Ross Sea and in surface Antarctic snow.
International Journal of Environmental Analytical Chemistry 1996, 63 (1), 1-13.
- Betti, M.; Giannarelli, S.; Onor, M.,
Investigations of the behavior of tellurium(IV) and selenium(IV) in ion-exchange chromatography.
Journal of Chromatography A 1997, 779 (1-2), 147-154.
- Fuoco, R.; Ceccarini, A.; Onor, M.; Lottici, S.,
Supercritical fluid extraction combined on-line with cold-trap gas chromatography mass spectrometry.
Analytica Chimica Acta 1997, 346 (1), 81-86.
- Fuoco, R.; Ceccarini, A.; Onor, M.; Marrara, L.,
Analysis of priority pollutants in environmental samples by on-line supercritical fluid chromatography cleanup-cryo-trap-gas chromatography-mass spectrometry.
Journal of Chromatography A 1999, 846 (1-2), 387-393.
- Fuoco, R.; Giannarelli, S.; Abete, C.; Onor, M.; Termine, M.,
The effect of seasonal pack ice melting on the sea water polychlorobiphenyl contents at Gerlache Inlet and Wood Bay (Ross Sea- Antarctica).
International Journal of Environmental Analytical Chemistry 1999, 75 (4), 367-375.
- Colombini, M. P.; Modugno, F.; Silvano, F.; Onor, M.,
Characterization of the balm of an Egyptian mummy from the 7th century B.C.
Studies in Conservation 2000, 45 (1), 19-29.
- Malatesta, F.; Trombella, S.; Giacomelli, A.; Onor, M.,
Activity coefficients of 3 : 3 electrolytes in aqueous solutions. *Polyhedron* 2000, 19 (24-25), 2493-2500.
- Bramanti, E.; Sortino, C.; Onor, M.; Beni, F.; Raspi, G.,
Separation and determination of denatured alpha(s1)-, alpha(s2)-, beta- and kappa-caseins by hydrophobic interaction chromatography in cows', ewes' and goats' milk, milk mixtures and cheeses.
Journal of Chromatography A 2003, 994 (1-2), 59-74.
- D'Ulivo, A.; Loreti, V.; Onor, M.; Pitzalis, E.; Zamboni, R.,
Chemical vapor generation atomic spectrometry using amineboranes and cyanotrihydroborate(III) reagents.
Analytical Chemistry 2003, 75 (11), 2591-2600.

- Bramanti, E.; Lomonte, C.; Galli, A.; Onor, M.; Zamboni, R.; Raspi, G.; D'Ulivo, A., Characterization of denatured metallothioneins by reversed phase coupled with on-line chemical vapour generation and atomic fluorescence spectrometric detection. *Journal of Chromatography A* **2004**, *1054* (1-2), 285-291.
- Bramanti, E.; Lomonte, C.; Onor, M.; Zamboni, R.; Raspi, G.; D'Ulivo, A., Study of the disulfide reduction of denatured proteins by liquid chromatography coupled with on-line cold-vapor-generation atomic-fluorescence spectrometry (LC-CVGAFS). *Analytical and Bioanalytical Chemistry* **2004**, *380* (2), 310-318.
- Bramanti, E.; Quigley, W. W. C.; Sortino, C.; Beni, F.; Onor, M.; Raspi, G.; Synovec, R. E., Multidimensional analysis of denatured milk proteins by hydrophobic interaction chromatography coupled to a dynamic surface tension detector. *Journal of Chromatography A* **2004**, *1023* (1), 79-91.
- Bramanti, E.; Sortino, C.; Lomonte, C.; Onor, M.; Zamboni, R.; Raspi, G.; D'Ulivo, A., Hydrophobic interaction chromatography coupled with atomic fluorescence spectrometric detection - Effect of the denaturation on the determination of thiolic proteins. *Talanta* **2004**, *63* (2), 383-389.
- D'Ulivo, A.; Baiocchi, C.; Pitzalis, E.; Onor, M.; Zamboni, R., Chemical vapor generation for atomic spectrometry. A contribution to the comprehension of reaction mechanisms in the generation of volatile hydrides using borane complexes. *Spectrochimica Acta Part B-Atomic Spectroscopy* **2004**, *59* (4), 471-486.
- D'Ulivo, A.; Onor, M.; Pitzalis, E., Role of hydroboron intermediates in the mechanism of chemical vapor generation in strongly acidic media. *Analytical Chemistry* **2004**, *76* (21), 6342-6352.
- Bramanti, E.; Lomonte, C.; Onor, M.; Zamboni, R.; D'Ulivo, A.; Raspi, G., Mercury speciation by liquid chromatography coupled with on-line chemical vapour generation and atomic fluorescence spectrometric detection (LC-CVGAFS). *Talanta* **2005**, *66* (3), 762-768.
- Fuoco, R.; Giannarelli, S.; Onor, M.; Ceccarini, A.; Carli, V., Optimized cleanup methods of organic extracts for the determination of organic pollutants in biological samples. *Microchemical Journal* **2005**, *79* (1-2), 69-76.
- Karadjova, I. B.; Lampugnani, L.; Onor, M.; D'Ulivo, A.; Tsalev, D. L., Continuous flow hydride generation-atomic fluorescence spectrometric determination and speciation of arsenic in wine. *Spectrochimica Acta Part B-Atomic Spectroscopy* **2005**, *60* (6), 816-823.
- Bramanti, E.; Allegrini, C.; Onor, M.; Raspi, G.; Skogerboe, K. J.; Synovec, R. E., Flow injection analysis with diode array absorbance detection and dynamic surface tension detection for studying denaturation and surface activity of globular proteins. *Analytical Biochemistry* **2006**, *351* (1), 100-113.
- Bramanti, E.; D'Ulivo, L.; Lomonte, C.; Onor, M.; Zamboni, R.; Raspi, G.; D'Ulivo, A., Determination of hydrogen sulfide and volatile thiols in air samples by mercury probe derivatization coupled with liquid chromatography-atomic fluorescence spectrometry. *Analytica Chimica Acta* **2006**, *579* (1), 38-46.
- D'Ulivo, A.; Onor, M.; Pitzalis, E.; Spiniello, R.; Lampugnani, L.; Cristoforetti, G.; Legnaioli, S.; Palleschi, V.; Salvetti, A.; Tognoni, E., Determination of the deuterium/hydrogen ratio in gas reaction products by laser-induced breakdown spectroscopy. *Spectrochimica Acta Part B-Atomic Spectroscopy* **2006**, *61* (7), 797-802.
- Karadjova, I. B.; Lampugnani, L.; Dedina, J.; D'Ulivo, A.; Onor, M.; Tsalev, D. L., Organic solvents as interferents in arsenic determination by hydride generation atomic absorption spectrometry with flame atomization. *Spectrochimica Acta Part B-Atomic Spectroscopy* **2006**, *61* (5), 525-531.

- Karadjova, I. B.; Lampugnani, L.; D'Ulivo, A.; Onor, M.; Tsalev, D. L., Determination of lead in wine by hydride generation atomic fluorescence spectrometry in the presence of hexacyanoferrate(III). *Analytical and Bioanalytical Chemistry* **2007**, *388* (4), 801-807.
- Pitzalis, E.; Ajala, D.; Onor, M.; Zamboni, R.; D'Ulivo, A., Chemical vapor generation of arsane in the presence of L-cysteine. Mechanistic studies and their analytical feedback. *Analytical Chemistry* **2007**, *79* (16), 6324-6333.
- Bramanti, E.; Cavallaro, R.; Onor, M.; Zamboni, R.; D'Ulivo, A., Determination of thiolic compounds as mercury complexes by cold vapor atomic absorption spectrometry and its application to wines. *Talanta* **2008**, *74* (4), 936-943.
- Di Francesco, F.; Loccioni, C.; Fioravanti, M.; Russo, A.; Pioggia, G.; Ferro, M.; Roehrer, I.; Tabucchi, S.; Onor, M., Implementation of Fowler's method for end-tidal air sampling. *Journal of Breath Research* **2008**, *2* (3).
- D'Ulivo, A.; Onor, M.; Spiniello, R.; Pitzalis, E., Mechanisms involved in chemical vapor generation by aqueous tetra hydroborate(III) derivatization - Role of hexacyanoferrate(III) in plumbane generation. *Spectrochimica Acta Part B-Atomic Spectroscopy* **2008**, *63* (8), 835-842.
- D'Ulivo, A.; Pagliano, E.; Onor, M.; Pitzalis, E.; Zamboni, R., Vapor Generation of Inorganic Anionic Species After Aqueous phase Alkylation with Trialkyloxonium Tetrafluoroborates. *Analytical Chemistry* **2009**, *81* (15), 6399-6406.
- D'Ulivo, A.; Paolicchi, I.; Onor, M.; Zamboni, R.; Lampugnani, L., Flame-in-gas-shield miniature flame hydride atomizers for ultra trace element determination by chemical vapor generation atomic fluorescence spectrometry. *Spectrochimica Acta Part B-Atomic Spectroscopy* **2009**, *64* (1), 48-55.
- Neri, G.; Micali, G.; Ipsale, S.; Donato, N.; Di Francesco, F.; Loccioni, C.; Pioggia, G.; Ferro, M.; Tabucchi, S.; Onor, M., *Development of solid state analyzer for breath analysis*. 2009; p 243-248.
- Pitzalis, E.; Mascherpa, M. C.; Onor, M.; D'Ulivo, A., Mechanisms involved in stannane generation by aqueous tetrahydroborate(III) Role of acidity and L-cysteine. *Spectrochimica Acta Part B-Atomic Spectroscopy* **2009**, *64* (4), 309-314.
- Pierce, K. M.; Bramanti, E.; Onor, M.; Spiniello, R.; Kangas, A.; Skogerboe, K. J.; Synovec, R. E., Analysis of commercial beverage products by size exclusion chromatography coupled with UV-vis absorbance detection and dynamic surface tension detection. *Talanta* **2010**, *80* (3), 1445-1451.
- Angeli, V.; Ferrari, C.; Longo, I.; Onor, M.; D'Ulivo, A.; Bramanti, E., Microwave-Assisted Photochemical Reactor for the Online Oxidative Decomposition and Determination of p-hydroxymercurybenzoate and Its Thiolic Complexes by Cold Vapor Generation Atomic Fluorescence Detection. *Analytical Chemistry* **2011**, *83* (1), 338-343.
- Bramanti, E.; Ferrari, C.; Angeli, V.; Onor, M.; Synovec, R. E., Characterization of BSA unfolding and aggregation using a single-capillary viscometer and dynamic surface tension detector. *Talanta* **2011**, *85* (5), 2553-2561.
- Chen, H. L.; Bramanti, E.; Longo, I.; Onor, M.; Ferrari, C., Oxidative decomposition of atrazine in water in the presence of hydrogen peroxide using an innovative microwave photochemical reactor. *Journal of Hazardous Materials* **2011**, *186* (2-3), 1808-1815.

Pagliano, E.; Onor, M.; Pitzalis, E.; Mester, Z.; Sturgeon, R. E.; D'Ulivo, A.,
Quantification of nitrite and nitrate in seawater by triethyloxonium tetrafluoroborate derivatization-
Headspace SPME GC-MS.

Talanta **2011**, *85* (5), 2511-2516

E. Pagliano, M. Onor, J. Meija, Z. Mester, R. E. Sturgeon, A. D'Ulivo Mechanism of Hydrogen
Transfer in Arsane Generation by Aqueous Tetrahydridoborate: Interference Effects of AuIII and
other noble metals

Spectrochimica Acta Part B: Atomic Spectroscopy, In Press, Corrected Proof, Available online 2
October 2011

V. Angeli, S. Biagi, S. Ghimenti, M. Onor, A. D'Ulivo, E. Bramanti

Flow injection-chemical vapor generation atomic fluorescence spectrometry hyphenated system for
organic mercury determination: A step forward

Spectrochimica Acta Part B: Atomic Spectroscopy, In Press, Accepted Manuscript, Available online
28 October 2011

S. Ghimenti, T. Lomonaco, M. Onor, L. Murgia, A. Paolicchi, R. Fuoco, L. Ruocco, G. Pellegrini, M.
G. Trivella, F. Di Francesco

Measurement of Warfarin in the Oral Fluid of Patients Undergoing Anticoagulant Oral Therapy
accepted for publication in PLoS ONE

Di Francesco F., Tabucchi S., Murgia L., Onor M.,

"L'analisi della composizione del sudore come strumento d'indagine medica".

In: Sistemi indossabili per la salute e la protezione dell'uomo, Eds. Bonfiglio A., Cerutti S., De Rossi
D., Magenes G., Patron Editore, Bologna,(2008),pp.259-289..

A. Ceccarini, F. Di Francesco, R. Fuoco, S. Ghimenti, M. Onor, S. Tabucchi, and M. G. Trivella
Breath Analysis: Analytical Methodologies and Clinical Applications

Analytical Techniques for Clinical Chemistry: Methods and Applications (S. Caroli and Gy. Záray,
Eds., J. Wiley & Sons, Publisher), Chapter 23.

in the forthcoming book