



Piera Ielpo was born in Maratea (Pz), Italy on December 17<sup>th</sup>, 1969.

She has Italian Citizen, married with Ferdinando De Tomasi and has two children, Marcella and Dario.

### **Current position**

Research scientist (with permanent position) at Water Research Institute (IRSA) of Italian National Research Council (CNR), Bari division.

### **Professional Preparation**

*March 2004: Ph.D. in “Environmental Sciences”, University of Bari, Italy*

*May 1999: M.S. in Chemistry (110/110), University of Bari, Italy*

### **Professional Interests**

Sampling and chemical characterization of fine fractions of particulate matter.

Atmospheric pollutants analytical methods development and validation.

Particulate matter transport processes.

Application of multivariate statistical methods (PCA, DFA, CA, APCS, TTFA, CMB) to atmospheric and groundwater pollutants for the source apportionment.

Black carbon, Organic carbon and Water Soluble Organic Carbon studies both in PM segregated samples and PM<sub>10</sub>, PM<sub>2,5</sub> and PM<sub>1</sub> samples, collected in urban and remote areas.

Degradation of organic pollutants in water samples with AOP processes (Advanced Oxidation Processes).

### **Affiliations:**

Italian Aerosol Society

Chemists Provincial Association of Bari

## **Appointments**

*December 2010 - current:* [External Staff Scientist Researcher](#)

Institute of Atmospheric Sciences and Climate (ISAC) of the Italian National Research Council (CNR), Lecce division (Italy).

*December 15<sup>th</sup>, 2008 - current:* [Staff Scientist Researcher](#)

Water Research Institute (IRSA) of the Italian National Research Council (CNR), Bari division (Italy);

*October 2009 - current:* [Councillor of the Chemists Provincial Association of Bari](#)

*April 2005-December 2008:* [Research Assistant in an Analytical and Environmental Chemistry Laboratory](#). Department of Chemistry of Bari University, Bari (Italy); research program 03.01 del D.R. n 13442 of Bari University, entitled: *Study and characterization of inorganic compounds of particulate matter*.

*June 2004 - April 2005:* [Head of Research and Development](#)

Ecosud s.r.l. (laboratory of environmental analysis and characterization and remediation of polluted sites) - Pisticci scalo Val Basento (Mt), Italy.

November 2000 –October 2003: [Ph.D. program \(Italian Fellowship\)](#)

Department of Chemistry of Bari University, Italy. Research group of Professor M. Caselli *Chromatographic analyses, scanning electron microscopy, remote sensing and source apportionment techniques for studying of heavy metals and atmospheric particulate*.

*May – October 2003:* [Visiting Scholar \(Italian Fellowship\)](#)

University “Claude Bernarde” of Lyon1, France. LASIM: Laboratory of Molecular and Ionic Spectroscopy with the research group of professor P. Rairoux.

February 2002-February 2003: [External Collaborator](#) at national project "SIMAGE" run by Environmental Ministry for monitoring areas exposed to environmental risk in the cities of Taranto and Brindisi", under the supervision of CCR of the European Commission.

July 1999-December 2000: [External Collaborator](#) at national project "POP (progetto operativo plurifondo94-99):" Air Quality of Puglia region" funded by Puglia region

September-December 1999: [Attendance of advanced course](#) on Scanning and Transmission Electronic Microscopy run by CARSO (Scientific Foundation)-Bari

September 1998-May 1999: [Internship in an Analytical and Environmental Chemistry Laboratory](#)

University of Bari, Italy, Research group of Professor Maurizio Caselli (undergraduate program): *Development of chromatographic methods for determination of heavy metals in particulate matter.*

### **Teaching activities:**

a.y. 2010/2011: tenured at Medicine and Surgery department of Bari University for the course of Food Chemistry;

a.y. 2008/2009: tenured at Medicine and Surgery department of Bari University for the course of Food Chemistry;

a.y. 2008/2009: Teaching activities at Medicine and Surgery department of Bari University for the course: Chemical fundamentals for the technologies

a.y. 2007/2008: Teaching activities at department of chemistry of Bari University for the courses: Analytical chemistry III mod A; Statistical data analysis mod. A and Environmental impact assessment.

Teaching activities at Medicine and Surgery department of Bari University for the course: Chemical fundamentals for the technologies

a.y. 2006/2007: Teaching activities at department of chemistry of Bari University for the courses: Analytical chemistry III mod A; Statistical data analysis mod. A; Environmental impact assessment.

Teaching activities at Medicine and surgery department of Bari University for the course: Chemical fundamentals for the technologies

a.y. 2005-2006: Teaching activities at department of chemistry of Bari University

Analitical Chemistry mod.A

*February – May 2004*: Teaching activity at secondary school “I.T.C.” in Bitonto (Bari, Italy).

*March 2000 - February 2003* : Tutor activity for Engineering students (Chemistry I) at Politecnico of Bari.

*June-July 2000*: Teaching activity for course in “Expert of Environmental Ecolabel and Audit ” run by Mater: Advice-Education-Research.

### **Organization of conference/symposia**

*May 2011*: National Conference “La cultura dello sviluppo sostenibile: la chimica che ripara”, Bari 13-14, in the frame of the International Year of the Chemistry, 2011;

*October 2008*: National School: “Aerosol School 2008: monitoring problems and interpretative instruments”, Molfetta (Ba) 9 - 11 October;

*October 2008*: PM2008: 3° National Congress on Atmospheric Particulate, Bari, 1-3;

*December 2007*: National School: “Aerosol School 2007: sources, monitoring techniques and characterization”, Lecce, 3 - 7;

*October 2001*: National Convention “Il Convention ARG: environment, research, youngs”, research center of ENEA TRISAIA Rotondella – Matera, 23-26;

### **List of publications in peer-reviewed journals:**

P.Bruno, M.Caselli, G.de Gennaro, [P.Ielpo](#), A.Traini.

“Analysis of heavy metals in atmospheric particulate by ion chromatography”, *Journal of Chromatography A*, 888 (2000) 145-150;

M.Caselli, G. de Gennaro and [P. Ielpo](#)

“Application of a fast deconvolution method to hpic peaks”, *LCGC Europe* February 2002

P. Bruno, M. Caselli, G. de Gennaro, M. de Rienzo, [P. Ielpo](#), D. Manigrassi

“Collection and analytical characterisation of the atmospheric particulate in the city of Bari.”, *Annali di chimica*, settembre 2002

M. Caselli, G. de Gennaro, M. de Rienzo, E. Filippo, [P. Ielpo](#), T. Ladisa e D. Manno. “The particulate matter and heavy metals in the atmosphere of Bari” *La chimica e l'industria Richmac magazine\_ Maggio2003*.

M. Caselli, G. de Gennaro, M. de Rienzo, E. Filippo, [P. Ielpo](#), T. Ladisa e D. Manno. “Ion chromatography analisys of preconcentrated metals”; *La chimica e l'industria Richmac magazine\_ Maggio2003*.

M. Caselli, [P. Ielpo](#), G. de Gennaro, M. de Rienzo, E. Filippo\*, and D. Manno\*; "Heavy metals and particulate matter in the atmosphere of Bari-Italy" *Journal de Physique IV*, Proceedings Heavy Metals in the Environment - Grenoble, France, May 2003;

P. Bruno, M. Caselli, G. de Gennaro, [P. Ielpo](#), T. Ladisa, A. Mangone, A. Traini, M. Tutino "I modelli a recettore per l'attribuzione delle sorgenti di inquinamento nel particolato atmosferico: confronto tra APCS e TTFA"; Atti di ECOMONDO-Fiera Internazionale di Materia ed Energia e dello sviluppo sostenibile- Proceedings - 22/25 ottobre 2003 Rimini – Italy

Maurizio Caselli, [Pierina Ielpo](#), Gianluigi de Gennaro, Paolo Bruno Daniela Manno, Emanuela Filippo, Antonio Serra. "Caratterizzazione morfologica e composizionale di particolato atmosferico raccolto in aree urbane", proceedings *Atti di Ecomondo* Rimini settembre 2005

Maurizio Caselli, Gianluigi de Gennaro and [Pierina Ielpo](#) "A comparison between two receptor models to determine the source apportionment of atmospheric pollutants." *Environmetrics* - Volume 17, Issue 5 (August 2006) (p 507-516)

P. Bruno, M. Caselli, G. de Gennaro, [P. Ielpo](#), T. Ladisa and C.M. Placentino "Ion Chromatography Determination of Heavy Metals in Airborne Particulate with Preconcentration and Large Volume Direct Injection". *Chromatographia* 2006, 64, November (N°9/10), 537-542.

G. de Gennaro, [P. Ielpo](#), P. Bruno, M. Caselli, V. Paolillo, B. E. Daresta, C. M. Placentino, P. R. Dambruoso, L. Trizio. Application of Receptor Models to PM10 and PM2.5 Samples. Proceedings CMA4CH. 1th International Meeting on Chemometric and Multivariate Analysis Applied to Cultural Heritage and Environment. Giovanni Visco ed. (anno 2006). Isbn: 88-548-0765-6 Aracne Editrice.

M. Caselli, [P. Ielpo](#), G. de Gennaro, P. Bruno, E. Filippo, D. Manno and A.Serra "Morphology, chemical composition and particle size distribution of aerosol particulate collected in the town of Bari, Italy"; *Environmental Sciences: an Indian Journal* - January 2007 Vol 2 (1).

P. Bruno, M. Caselli, G. de Gennaro, [P. Ielpo](#), V. de Pinto, B.E. Daresta and C.M. Placentino "A method for the determination of Cu (II), Ni(II), Co(II), Fe(II) and Pd(II) at ppb/subppb levels by ion chromatography". *Journal of Liquid Chromatography & Related Technologies*, 30 477-487, 2007

M. Amodio, P. Bruno, M.Caselli, G. de Gennaro, [P. Ielpo](#), B.E. Daresta, P.R. Dambruoso, C.M. Placentino, M. Tutino. Fine Particulate Matter In Apulia ( South Italy ): Chemical Characterization. Nucleation and Atmospheric Aerosols. Proceedings 17th International Conference on Nucleation and Atmospheric Aerosols, August 13th - 17th, 2007, Galway, Ireland. Colin D. O'Dowd, Paul Wagner Editors ISBN: 978-1-4020-6474-6.

M. Amodio, P. Bruno, M. Caselli, G. de Gennaro P.R. Dambruoso, B.E. Daresta, F. Gungolo, [P. Ielpo](#), V. Paolillo, C.M. Placentino, M. Tutino. "Impatto delle emissioni industriali sulla qualità dell'aria nella città di Taranto". proceedings *Atti di Ecomondo 2007*, 7-10 Novembre 07; Rimini (Italy)

P. Bruno, M. Caselli, G. de Gennaro, [P. Ielpo](#), B. E. Daresta, P. R. Dambruoso, V. Paolillo, C. M. Placentino, , L. Trizio . “Application of Receptor Models to Airborne Particulate Matter”. *Microchemical Journal* 88 (2008) 121-129.

F. Baldassarre, P. Bruno, M. Caselli, [P. Ielpo](#), G. Cornacchia, A. Canonico, G. Chita “Recovery of zinc from ashes of automobile tire wastes by pH controlled solutions of ammonium chloride” *Environmental Sciences: an Indian Journal*, ESAIJ, 3(2), 2008 [206-211]

Martino Amodio, Isa Cafagna, Maurizio Caselli, Gianluigi de Gennaro, Barbara Elisabetta Daresta, [Pierina Ielpo](#), Alessio De Gilio, Claudia Marcella Placentino, Maria Tutino. Caratterizzazione urbana del particolato urbano a Bari e Provincia. Rilevanza del fondo regionale. proceedings *Atti di Ecomondo 2008*, 5-8 Novembre 08; Rimini (Italy)

Martino Amodio, Maurizio Caselli, Gianluigi de Gennaro, Barbara Elisabetta Daresta, [Pierina Ielpo](#), Claudia Marcella Placentino, Maria Tutino “Air quality impact for industrial area of Taranto city (South Italy): a multivariate statistical analysis application”, published on *Chemical Engineering Transactions*, volume 16, 2008 [193-200] ISSN: 1974-9791

M. Amodio, P. Bruno, M. Caselli, G. de Gennaro, P.R. Dambruoso, B.E. Daresta, [P. Ielpo](#), F. Gungolo, C.M. Placentino, V. Paolillo, M. Tutino. "Chemical characterization of fine particulate matter during peak PM episodes in Apulia ( South Italy )". *Atmospheric Research*, Volume: 90, Issue: 2-4, November - December, 2008, pp. 313-325.

M. Caselli. G. de Gennaro, L. Trizio, [P. Ielpo](#) “A simple feed forward neural network for the PM<sub>10</sub> forecasting: comparison with multivariate linear regression model”. *Water Air Soil Pollut* (2009) 201:365–377

E. Andriani, M. Caselli, [P. Ielpo](#), G. de Gennaro, B. E. Daresta, P. Fermo, A. Piazzalunga, M. C. Placentino. Application of CMB model to PM<sub>10</sub> data collected in a site of South Italy: results and comparison with APCS model. *Current Analytical Chemistry - Volume 6, Number 1*, January 2010

E. Andriani, M. Amodio, M. Caselli, P. R. Dambruoso, B. E. Daresta, G. de Gennaro, [P. Ielpo](#), C. M. Piacentino, M. Tutino. Characterization of particulate matter in the Apulia Region (South of Italy): features and critical episodes. *J. Atmos Chem*, Volume: 63 Issue: 3 Pages: 203-220

R. Buccolieri, S.M. Salim, L.S. Leo, S. Di Sabatino, A. Chan, [P. Ielpo](#), G. de Gennaro, C.M. Placentino, M. Caselli, C. Gromke. Study of tree-atmosphere interaction and assessment of air quality in real city neighbourhoods Proceedings HARMO13. 1-4 June 2010: 13th conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes. Paris

D. Cassano, S. Diomede, [P. Ielpo](#), G. Laera, A. Lopez, G. Mascolo, N. Michel, I. Pariente, A. Pinto, A. Pollice. Integrated MBR-ozonation system for pharmaceutical wastewater treatment. Proceedings: IWA World Water Congress, Montreal, 19-24 September 2010.

R. Buccolieri, S.M. Salim, L.S. Leo, S. Di Sabatino, A. Chan, [P. Ielpo](#), G. de Gennaro, C. Gromke. The role of vegetation on street level pollutant concentrations. *Atmospheric Environment* 45 (2011) 1702-1713

P. Ielpo, D. Cassano, A. Lopez, P. Abbruzzese De Napoli, G. Pappagallo, V. Uricchio. Source Apportionment of Ground Waters Pollutants in Apulian Agricultural Sites Using Multivariate Statistical Analyses. *Chemical Central Journal* accepted for publication

## Book Chapters

“*Impatto ambientale di attività antropiche*”, M. Aresta, pag.57-80 Ed. Nowatech N6 – 2004. “L’inquinamento atmosferico: cause e possibili rimedi. Reti urbane di monitoraggio” (*Atmospheric pollution: reasons and possible remedies. Monitoring urban networks*) M. Caselli, G. de Gennaro, P. Ielpo e A. Mangone

Seminario Scientifico “*Il particolato atmosferico: il monitoraggio, le tecniche*”. (*Atmospheric particulate: monitoring and techniques*). Molfetta (Bari) 21 marzo 2005. Il particolato atmosferico: distribuzione dimensionale, morfologia e composizione chimica. (*Atmospheric particulate: size distribution, morphology and chimica composition*) Maurizio Caselli, Pierina Ielpo

Seminario Scientifico “*Il particolato atmosferico: il monitoraggio, le tecniche*”. (*Atmospheric particulate: monitoring and techniques*). Molfetta (Bari) 21 marzo 2005. Proprietà chimico fisiche del particolato atmosferico. (*Chemical-physical properties of particulate matter*) B.E. Daresta, P.R. Dambruoso, G. de Gennaro, P. Ielpo, C.M. Piacentino, M. Solito, M. Turino

Book “*Innovative and Integrated Technologies for the Treatment of Industrial Wastewater INNOWATECH*”

Chapter 2: *Integrated processes, par 2.3 MBR/AOP treatment of pharmaceutical wastewater*. D. Cassano, S. Diomede, P. Ielpo, G. Laera, G. Mascolo, A. Pinto, A. Police, C. Salerno. Ed. IWA . In publication

*Air Quality/Book 2*, ISBN 978-953-307-569-3, InTech, on line publication. *Role of the ionic component and carbon fractions in the fine and coarse fractions of particulate matter for the identification of pollution sources: application of receptor models*. Pierina Ielpo, Claudia Marcella Placentino, Isabella Cafagna, Gianluigi de Gennaro, Martino Amodio, Barbara Elisabetta Daresta, Alessia Di Gilio. In publication

## Thesis

P. Ielpo, “Una nuova metodica analitica per la determinazione dei metalli pesanti nel particolato atmosferico, tramite cromatografia ionica (*A new analytical method for determination of heavy metals in particulate matter by ion chromatography*)” degree thesis, Bari University’, 1999;

P. Ielpo, Heavy metals and atmospheric particulate: chromatographic analysis, scanning electron microscopy and source apportionment, *Ph.D. Thesis*, Bari University (2004), stored at National Libraries of Roma and Firenze (**BNI0013860**).

In the publications list deliverables and reports projects and conference communications are excluded.

She is referee for the following international scientific journals: Journal of Chromatography A, Journal of Chemometrics, Journal of Environmental Management, Science of the Total Environment and International Journal of Environmental Analytical Chemistry.

From June 2011 she is a volunteer peer reviewer of Libertas Academica journals:

Analytical Chemistry Insights

Environmental Health Insights

## Projects

She is (or has been) involved in the research activities of the following national and international projects:

- Convention between Chemistry Department of Bari University and Bari Municipality (1999 – 2008): *Research and quantitative analysis of pollutants with hard impact on health and environment;*

- SITECOS PRIN Project (2004-2006) funded by Italian MIUR: *Integrated Study on national Territory for the characterization and CONTROL of atmospheric pollutants;*

- PCOST PRIN Project (2005-2007) funded by Bari University: *Study of the Coastal Particulate.*

- Convention between Apulia Region, ARPA Puglia, Bari University, Lecce University, CNR-ISAC: action line b) *Emission inventory;*

- Convention between Chemistry Department of Bari University and ARPA Basilicata (2007-2009): *Study of atmospheric monitoring in the Region for the atmospheric protection.*

- Convention between Chemistry Department of Bari University and Bari Province (2006-2009): *Technical scientific collaboration for operation and management of the air quality in Bari Province.*

- - *INNOWATECH Innovative and Integrated Technologies for the Treatment of Industrial Wastewater Project* \_ funded by European Commission - VI pq (2002-2008)

STRATEGIC Project (2006-2010) PS\_122: *Integrated system for the Monitoring of Atmospheric Particulate (SIMPA)*, funded by Apulia Region.



- *Climate Change on Quantity, Quality & Biodiversity of water resources in mountain area;*  
SHARE- EvK2CNR; *under evaluation*

Lecce, September 2011