

# Curriculum Vitae

## Personal Information

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**Name** Konstantinos  
**Surname** Koukoulakis  
**Date of Birth** 22/09/1988  
**Place of Residence** Agias Sophias 104, Nea Smyrni, 17123, Athens, Greece  
**E-mail** [kkoukoulakis@chem.uoa.gr](mailto:kkoukoulakis@chem.uoa.gr)



## Education

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- 2015- 2020** **PhD in Chemistry**, Chemistry Department, School of Physical Sciences, National and Kapodistrian University of Athens  
PhD Thesis Title: "Study on the transformation of anthropogenic atmospheric pollutants in atmosphere and biological fluids"  
Degree: "Excellent"  
*PhD research work was supported by the Hellenic Foundation for Research and Innovation (HFRI) and the General Secretariat for Research and Technology (GSRT), under the HFRI PhD Fellowship grant (GA no.1102)*
- 2012-2014** **MSc in Environmental Chemistry and Technology**, Chemistry Department, School of Physical Sciences, National and Kapodistrian University of Athens  
Master Thesis title: "Development and validation of multivariate method for the determination of heavy metals in airborne particulate matter"  
Degree: "Excellent"
- 2006-2012** **BSc in Chemistry**, Chemistry Department, School of Physical Sciences, National and Kapodistrian University of Athens  
Degree: "Very Good"
- 2006** **Apolytirion**, General High School, Velo Corinth  
Degree: "Excellent"

## Working Experience- Research Projects

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- 2021-Today** **Institute of Environmental Research and Sustainable Development (IERSD) of the National Observatory of Athens (NOA)**
- "Measurements and analysis of data from organic compounds in gas phase" under the project PANhellenic infrastructure for Atmospheric Composition and climatE chAnge (PANACEA)
  - Post- doctoral researcher studying levels, source apportionment and health impacts of volatile organic compounds (VOCs) and other pollutants in atmosphere of Greece and Eastern Mediterranean
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- 2021-2022** **Academic fellowship under the project "Acquisition of academic teaching experience for new PhD scientists, 2021-2022 in National and Kapodistrian University of Athens"**
- Teaching undergraduate lessons in the field "Analytical Chemistry" (NKUA)

2014 - 2021	<b>Laboratory of Analytical Chemistry - NKUA</b>
	<ul style="list-style-type: none"> <li>▪ Management of the system documentation and practices referred to the accreditation of the laboratory according to ISO 17025</li> <li>▪ Participation and evaluation in the following chemical tests: <ul style="list-style-type: none"> <li>• Sampling and determination of PM10 or PM2.5 fraction of suspended particulates in ambient air (ELOT EN 12341:2014)</li> <li>• Determination of polynuclear aromatic hydrocarbons (PAHs, 12 compounds) in atmospheric airborne particulates (In house method based on ELOT EN 15549:2008)</li> <li>• Determination of volatile organic compounds [benzene, toluene, ethylbenzene, m+p-xylene, o-xylene] in atmospheric air after active and passive sampling (In house method based on ELOT EN 14662-2:2005)</li> </ul> </li> </ul>
09/2020-12/2021	<p data-bbox="419 685 1399 779"><b>The Census Bureau Opportunity Project (TOP): “Develop a digital tool for monitoring and analyzing traffic patterns, air pollution and weather in the D.C. area”(In collaboration with American University)</b></p> <ul style="list-style-type: none"> <li>▪ Expert Consultant: Suggestions and advice to the team from American University in terms of air quality monitoring</li> <li>▪ Participation in the preparation of deliverables and in the final product (AirMotionDC)</li> </ul>
2018-2019	<p data-bbox="419 954 1399 1048"><b>“Atmospheric pollution and human health in Aspropirgos: Determination of pollutants, source apportionment and investigation of the coverage of legislated requirements” (Municipality of Aspropirgos)</b></p> <ul style="list-style-type: none"> <li>▪ Participation in the design and implementation of the study</li> <li>▪ Participation in sampling procedure, samples’ analysis, statistical analysis</li> <li>▪ Study of the related legislation and participation in the preparation of deliverables and reports</li> <li>▪ Further research with the outcomes of the study</li> </ul>
27-29/06/2018	<p data-bbox="419 1245 1399 1346"><b>Expert Consultant in the framework of the 2<sup>nd</sup> Training on laboratory analyses of water samples with emphasis on priority pollutants (MIO-ECSDE, GWP-Med), Tirana, Albania</b></p> <ul style="list-style-type: none"> <li>▪ Expert Consultant: Training of the participants in development and validation of analytical methods for the determination of emerging pollutants in water using GC/ECD</li> </ul>
04-07/12/2017	<p data-bbox="419 1469 1399 1536"><b>Training on laboratory analyses of water samples with emphasis on priority substances (MIO-ECSDE, GWP-Med)</b></p> <ul style="list-style-type: none"> <li>▪ Organization board and laboratory training during the program</li> </ul>
10/2015 - Today	<p data-bbox="419 1592 1182 1621"><b>Laboratory Assistant in undergraduate practical lessons</b></p> <ul style="list-style-type: none"> <li>▪ Atmospheric Chemistry, Laboratory of Environmental Chemistry, NKUA</li> <li>▪ Instrumental Analytical Chemistry I, Laboratory of Analytical Chemistry, NKUA</li> </ul>
10/2014-11/2015	<p data-bbox="419 1749 1399 1843"><b>“Update of the air quality mapping through the development of an emissions inventory and of an appropriate computational tool” (HPC PASECO-DRAXIS-AEQN funded by Ministry of Environment and Energy)</b></p> <ul style="list-style-type: none"> <li>▪ Participation in sampling procedure, samples’ analysis, statistical analysis</li> <li>▪ Study of the related legislation and participation in the preparation of deliverables and reports</li> <li>▪ Further research with the outcomes of the study</li> </ul>

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**05/2013-06/2014 Study on the Health Impact of air- Pollution in Ships (S.H.I.P.S.) (Laboratory of Analytical Chemistry and Medical School, NKUA funded by “Maria Tsakos Foundation” and “ClassNK”)**

- Participation in sampling procedure, samples' analysis, statistical analysis
- Study of the related legislation and participation in the preparation of deliverables and reports
- Further research with the outcomes of the study

**2/2012-5/2012 Internship as an undergraduate student**

- Pesticide Residues Laboratory, General Chemical State Laboratory

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## **Research Publications**

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E. Chrysochou\*, **K. Koukoulakis\***, P.G. Kanellopoulos A. Sakellari, S. Karavoltos, M. Dassenakis, M. Minaidis, G. Maropoulos, E. Bakeas (2021) Human serum elements' levels and leukemia: A first pilot study from an adult Greek cohort, *J Trace Elem Med Biol* 68:126833 (\*equal contribution)

E. Chrysochou, P.G. Kanellopoulos, **K. Koukoulakis**, A. Sakellari, S. Karavoltos, M. Minaidis, E. Bakeas (2021) Heart failure and PAHs, OHPAHs, and trace elements levels in human serum: Results from a preliminary pilot study in Greek population and the possible impact of air pollution, *Molecules* 26(11):3207

P.G. Kanellopoulos, E. Chrysochou, **K. Koukoulakis**, E. Bakeas, (2021) Secondary organic aerosols markers and related polar organic compounds in summer aerosols from a sub-urban site in Athens: Size distributions, diurnal trends and source apportionment. *Atm Pol Res* 12(4):1-13

**K.G. Koukoulakis**, P.G. Kanellopoulos, E. Chrysochou, D. Costopoulou, I. Vassiliadou, L. Leondiadis, E. Bakeas (2020). Atmospheric concentrations and health implications of PAHs, PCBs and PCDD/Fs in the vicinity of a heavily industrialized site in Greece. *Appl. Sci* 10(24):1-24, 9023

**K.G. Koukoulakis**, P.G. Kanellopoulos, E. Chrysochou, V. Koukoulas, M. Minaidis, G. Maropoulos, G.P. Nikoleli, E. Bakeas (2020). Leukemia and PAHs levels in human blood serum: Preliminary results from an adult cohort in Greece. *Atm Pollut Res* 11(9):1552-1565

P.G. Kanellopoulos, E. Verouti, E. Chrysochou, **K. Koukoulakis**, E. Bakeas (2021). Primary and secondary organic aerosol in an urban/industrial site: Sources, health implications and the role of plastic enriched waste burning. *J Environ Sci*, 99:22-238

P.G. Kanellopoulos, E. Chrysochou, **K. Koukoulakis**, E. Vasileiadou, C. Kizas, C. Savvides, E. Bakeas (2020). Polar organic compounds in PM10 and PM2.5 atmospheric aerosols from a background Eastern Mediterranean site during the winter period: Secondary formation, distribution and source apportionment. *Atmos Environ* 237 :117622

P.G. Kanellopoulos, E. Chrysochou, **K. Koukoulakis**, E. Vasileiadou, C. Kizas, C. Savvides, E. Bakeas (2020). Secondary organic aerosol tracers and related polar organic compounds between urban and rural areas in the Eastern Mediterranean region: Source apportionment and the influence of atmospheric oxidants. *Environ Sci-Proc Imp* 22(11) :2212-2229

S. Karavoltos, A. Sakellari, E. Bakeas, G. Bekiaris, M. Plavšić, Ch. Proestos, Sp. Zinelis, **K. Koukoulakis**, I. Diakos, M. Dassenakis, N. Kalogeropoulos (2020). Trace Elements, Polycyclic Aromatic Hydrocarbons, Mineral Composition, and FT-IR Characterization of Unrefined Sea and Rock Salts. *Environ Sci Pollut Res Int.* Apr;27(10):10857-10868

**K.G. Koukoulakis**, E. Chrysochou, P.G. Kanellopoulos, S. Karavoltos, G. Katsouras, M. Dassenakis, D. Nikolelis, E. Bakeas (2019). Trace elements bound to airborne PM10 in a heavily industrialized site nearby Athens: Seasonal patterns, emission sources, health implications. *Atm Pollut Res* 10 (4):1347-1356

E. Kolovou, A. Peppas, N. Zacharopoulos, **K. Koukoulakis**, E. Bakeas, G. Schnakenburg, A. I.

- Philippopoulos (2018). Facile synthesis of a 2-(2'-pyridyl)-4-(methylcarboxy) quinoline ruthenium (II) based catalyst precursor for transfer hydrogenation of aromatic ketones. *Inorg Chem Commun* 92:64-68
- C. Moustani, E. Anagnostopoulou, K. Krommyda, C. Panopoulou, **K. G. Koukoulakis**, E. B. Bakeas, G. Papadogianakis (2018). Novel aqueous-phase hydrogenation reaction of the key biorefinery platform chemical levulinic acid into  $\gamma$ -valerolactone employing highly active, selective and stable water-soluble ruthenium catalysts modified with nitrogen-containing ligands. *Appl Catal B-Environ.* (238):82-92
- N. Zacharopoulos, E. Kolovou, A. Peppas, **K. Koukoulakis**, E. Bakeas, G. Schnakenburg, A. I. Philippopoulos (2018). Pyridyl based ruthenium (II) catalyst precursors and their dihydride analogues as the catalytically active species for the transfer hydrogenation of ketones. *Polyhedron* 154(1):27-38
- N. Zacharopoulos, **K. Koukoulakis**, E. Bakeas, A. I. Philippopoulos (2016). A 2-(2'-pyridyl) quinoline ruthenium (II) complex as an active catalyst for transfer hydrogenation of ketones. *Open Chem* 14: 308-315
- I.N. Pasiyas, **K.G. Koukoulakis**, G.I. Bartzis, A.I. Mologousi, E.V. Bakeas (2014). Determination of As in particulate matter using Se as an internal standard by multi-element electrothermal atomic absorption spectrometry. *Anal Methods*, 6:7848-7853

### **Conferences (Oral and Poster Presentations)**

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- Kanellopoulos P.G., Chrysochou E., **Koukoulakis K.**, Kotsaki S.P., Zacharopoulos N. Philippopoulos A.I., Bakeas E., Determination of PM-bound organosulfates in the atmosphere of Athens: seasonal cycles and source apportionment, **ACAC**, oral presentation, 10-14 March 2021, held online
- Kanellopoulos P.G., Chrisohou E., **Koukoulakis K.**, Papadakis I., Bakeas E., Validation of a multistep derivatization method for the determination of polar species in organic aerosol, **16th International Conference on Environmental Science and Technology**, poster presentation, 4-7 September 2019, Rhodes, Greece
- Koukoulakis K.G.**, Kanellopoulos P.G., Chrysochou E., Katseli V., Koukoulas V., Minaidis M., Maropoulos G, Nikolelis D., E. Bakeas Exposure to Polycyclic Aromatic Hydrocarbons and the risk of adult Leukemia in Greece, **17th ICCE, oral presentation**, 16-20 June 2019, Thessaloniki, Greece
- Koukoulas V., Tatsiou P., **Koukoulakis K.**, Kanellopoulos P.G., Chrysochou E., Kouvelis P., Bakeas E., Chemical characterization of aerosol and gas phase produced by using heat-not-burn tobacco devices, **17th ICCE, poster presentation**, 16-20 June 2019, Thessaloniki, Greece
- Kanellopoulos P.G., Chrisohou E., **Koukoulakis K.**, Koukoulas V., Papadakis I., Vasiliadou E., Kizas C., Savvides C., Bakeas E., Characterization and distribution of secondary organic aerosol in PM10 and PM2.5 in a rural region during the winter period, **17th ICCE, poster presentation**, 16-20 June 2019, Thessaloniki, Greece
- Koukoulakis K.**, Kanellopoulos G., Chrisohou E., Koukoulas B., Bakeas E., Determination of Polycyclic Aromatic Hydrocarbons in ambient air of Greece and evaluation of their emissions sources, **ACAC**, oral presentation, 30 October-2 November 2018, Athens, Greece
- Dritsopoulos V.A., **Koukoulakis K.**, Bakeas E., Andreopoulou A.K., Kallitsis J.K., Philippopoulos A.I., Substituted pyridyl-quinoline based Ru(II) complexes as efficient catalysts for the transfer hydrogenation of aromatic ketones, **ACAC**, poster presentation, 30 October-2 November 2018, Athens, Greece
- Sakellari A., Proestos Ch., Karavoltsos S., **Koukoulakis K.**, Plavšić M., Diakos I., Bakeas E., Dassenakis E., Trace elements and polycyclic aromatic hydrocarbons (PAHs) in unrefined table salts retailed in Greece, **ACAC**, poster presentation, 30 October-2 November 2018, Athens, Greece

**Konstantinos Koukoulakis**, Sotirios Karavoltsos, Georgios Katsouras, Manolis Dassenakis, Evangelos Bakeas, Trace metals in atmospheric fine particles in one industrial city: spatial variations, sources and health implications, **6<sup>th</sup> EuCheMS Chemistry Congress, poster presentation**, 11-15 September 2016, Sevilla, Spain

### Reviewer in Scientific Journals

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Atmosphere, Chemosphere

### Other Skills

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<b>Greek</b>	Mother tongue
<b>English</b>	<b>Excellent</b> Knowledge (Michigan Proficiency)
<b>Professionals Skills</b>	<ul style="list-style-type: none"><li>▪ <b>Sampling Skills</b><ul style="list-style-type: none"><li>• Particulate Matter (PM<sub>2.5</sub> και PM<sub>10</sub>)</li><li>• Volatile Organic Compounds</li><li>• Primary Pollutants (SO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>)</li></ul></li><li>▪ <b>Analytical Techniques</b><ul style="list-style-type: none"><li>• Gas Chromatography (GC/FID, GC/ECD, GC/MS, GC/TOF-MS)</li><li>• Liquid Chromatography (HPLC-UV, LC MS/MS)</li><li>• Ion Chromatography</li><li>• Spectrometry (AAS, FAAS, GFAAS, ICP-MS)</li></ul></li></ul>
<b>Computer Skills</b>	<ul style="list-style-type: none"><li>• Excellent knowledge (<b>Microsoft Office, Internet</b>)</li><li>• Very good knowledge (<b>SPSS</b> –Statistical Analysis)</li><li>• Very good knowledge of chemical software (ISIS DRAW, ChemDraw)</li></ul>
<b>Driving License</b>	<b>B</b> Category
<b>Military Service Obligations</b>	<b>Fulfilled</b> – Hellenic Navy (08/05/2019- 08/05/2020)