

BRIEF CURRICULUM VITAE

Stylios K. Gkaras

Academic Position

Assistant Professor
University of Western Macedonia
Faculty of Engineering
Department of Chemical Engineering
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Education and Training

- ✚ PhD in Photochemistry and photodissociation of organic compounds, University of Ioannina
- ✚ BSc, Department of Chemistry, University of Ioannina

Current Fields of Interest:

- Field measurements, destructive and non-destructive methods of particulate matter analysis and evaluation
- Measurement station networks, air pollution control techniques, air quality management.
- Distribution of pollution sources / fugitive dust emission sources (using advanced techniques for the analysis of environmental samples and computational models).
- Organic synthesis
- Photochemistry
- Spectroscopy of organic compounds

Teaching Experience

Undergraduate Programmes of various Departments of UOWM and TEIWM, in the following topics:

- Chemistry
- Organic Chemistry
- Environmental Chemistry
- Bioorganic Chemistry
- Chemistry and Technology of Natural Products
- Environmental Engineering
- Air Pollution monitoring and Control Engineering
- Environmental Physics

Publications In International Scientific Journals

- Garas S.K., Triantafyllou A.G., Tolis E.I., Diamantopoulos Ch.N. and Bartzis J.G., 2020. Positive matrix factorization on elemental concentrations of PM10 samples collected in areas within, proximal and far from mining and power station operations in Greece. *Global NEST Journal*, Vol 22, No 1, pp 132-142. <https://doi.org/10.30955/gnj.003128>
- Triantafyllou A., Andreadou S., Moussiopoulos N., Garas S., Kapageridis I, Tsegas G., Diamantopoulos Ch., Sachanidis Ch., Skordas J. 2019. "Surface mining in Western Macedonia, Greece: Fugitive dust (PM10) Emissions and Dispersion", *Int. J. Mining and Mineral Engineering*, Vol. 10, Nos. 2/3/4, 2019,pg.288-310.
- A. G. Triantafyllou, J. Kalogiros, A. Krestou , E. Leivaditou, N. Zoumakis, D. Bouris, S. Garas, E. Konstantinidis, Q. Wang and K. Rados, 2018. Evaluation of an atmospheric model with surface and ABL meteorological data for energy applications in structured areas. *Theor Appl Climatol* 135, 1227–1242 (2019). <https://doi.org/10.1007/s00704-018-2429-1>
- Triantafyllou A., Moussiopoulos N., Krestou A., Tsegas G., Barmpas F., Garas S., and Andreadou M. (2017) "Application of inverse dispersion modelling for the determination of PM emission factors from fugitive dust sources in open – pit lignite mines", *Int. J. Environment and Pollution*, Vol. 62 Nos. 2/3/4, pp.274-290.
- Vasileios N. Matthaios, Athanasios G Triantafyllou, Triantafyllos A Albanis, Vasilios Sakkas, Stylianos Garas,2017, «Performance and evaluation of a coupled prognostic model TAPM over a mountainous complex terrain industrial area», *Theoretical and Applied Climatology*, DOI 10.1007/s00704-017-2122-9
- Vasileios N. Matthaios, Athanasios G. Triantafyllou, Stylianos Garas, Athina Krestou, Elena Leivaditou, 2016, "Interactions between complicated flow-dispersion patterns and boundary layer evolution in a mountainous complex terrain during elevated SO2 concentrations", *Meteorology and Atmospheric Physics*, DOI 10.1007/s00703-016-0480-y, <http://rdcu.be/mYAd>
- L. Aidoui, A. G. Triantafyllou, A. Azzi, S.K. Garas, V.N. Matthaios, 2015, «Elevated stacks' pollutants' dispersion and its contribution to photochemical smog formation

over a heavily industrial area », *Air Quality, Atmosphere & Health*, 2015, Vol.8, Issue 2, pp.213-227. (DOI 10.1007/s11869-014-0300-9)

- Iordanidis A., J.Garcia-Guinea, S. Garas, A Asvesta, A.Triantafyllou, 2013, "Application of μ Raman microscopy to the identification of individual airborne particles: preliminary results from Kozani's area, northern Greece", *Particulate Science and Technology*, 32 (4), pp. 355-359
- Triantafyllou A.G., Zoras S., Evagelopoulos V., **Garas S.**, *PM10, O₃ and CO concentrations and elemental analysis of airborne particles in a school building*, *Water Air Soil Pollution*, (2008) 8: 77-87.
- Triantafyllou A.G., Zoras S., Evagelopoulos V., **Garas S.**, and Diamantopoulos C., 2008, DOAS measurements above an urban street canyon in a medium sized city, *Global NEST Journal*, Vol. 10, No 2, 161-168.
- A.G. Triantafyllou, **S. Garas**, S. Zoras, V. Evagelopoulos and A. Asvesta, *Particulate matter concentrations and elemental analysis in four cities of Northwestern Greece*, *Fresenius Environmental Bulletin*, Vol 16, No 5, (2007) 508-516.
- **S. Garas**, M. G. Siskos , A. K. Zarkadis, "C-N vs. C-C Bond Photodissociation in N-(tert-butyl)diphenylmethyl) aniline, *International Journal of Photoenergy*, Vol. 6, No. 4, (2004) 233-240
- M. G. Siskos , A. K. Zarkadis, N. Karakostas , S. Steenken, **S. Garas**, "Photodissociation of N-triphenylmethyl benzeneamines: A Laser Flash Photolysis, ESR and Product Analysis Study" *J.Orq.Chem.*, 63 (1998) 3251-3259
- M. G. Siskos, **S. Garas**, A. K. Zarkadis and E. P. Bokaris "Synthesis of *N*- and *p*-(Diphenylmethyl)anilines. ESR Study of their Photofragmentation" *Chem. Ber.*, 125 (1992) 2477-2481

Chapters in collective volumes

- Zoras, S., Evagelopoulos, V., **Garas, S.**, Triantafyllou, A.G., Kosmopoulos, P. "Solar radiation and CFD photochemical modeling in the urban canopy" (2011) *Air Quality in the 21st Century*, pp. 353-380. <http://www.scopus.com/inward/record.url?eid=2-s2.0-84896416902&partnerID=40&md5=ada02f7748a99d7fecc31edbb900b3bd> DOCUMENT TYPE: Book Chapter SOURCE: Scopus
- Zoras, S., Evagelopoulos, V., **Garas, S.**, Triantafyllou, A.G., Kosmopoulos, P. Solar radiation and CFD photochemical modeling in the urban canopy (2012) *Solar Radiation: Protection, Management and Measurement Techniques*, pp. 119-148. <http://www.scopus.com/inward/record.url?eid=2-s2.0-84892114974> & partner ID = 40&md5=4c2736e66ebb66be3644c6019e9173cd DOCUMENT TYPE: Book Chapter SOURCE: Scopus
- V. N. Matthaios, **S.K.Garas**, A. G. Triantafyllou (2016). "Urban Heat Island in a Small Size Town in Northwestern Greece—A Comparison to Other Greek Areas" **Series Title** : Springer Atmospheric Sciences **Book Title** : Perspectives on Atmospheric Sciences **ISBN** : 978-3-319-35094-3
- Triantafyllou A., I. Skordas, S Garas, C. Diamantopoulos, S. Zapsis, A. Dounavis,

2017, «Real time data and forecast system – operational application in a nearby coal mining and power plants municipality of Greece. Measurements, local sources and desert dust», Athens 2017, in the memory of Professor A.G. Paliatsos, pp. 108 – 119.

Publications in International Conference Proceedings

- A. K. Zarkadis, M. G. Siskos, V. Georgakilas, S. Steenken, N. Karakostas, and **S. Garas**, "Photodissociation of the benzylic bond in arylmethyl-derivatives of aniline and benzophenone: A laser flash photolysis and ESR study", XVIIIth International Conference on Photochemistry, 3-8 August, **1997**, Warsaw, Poland
- **S. K. Garas**, M. G. Siskos, A. K. Zarkadis "Photochemistry of Organosilicon Aniline Derivatives: a Laser Flash Photolysis, Pulse Radiolysis and ESR study", 2nd MEDITERRANEAN PHOTOCHEMISTRY MEETING, June 28-July 1, **2003**, Giardini Naxos, Sicily, Italy
- S. Zoras, A.G. Triantafyllou, **S. Garas**, V. Evagelopoulos C. Diamantopoulos, 2005, Air quality measurements and modeling in West Macedonia region, 13 th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, Thessaloniki 8 t - 12 October 2005, Abstract Book pp. 71.
- Triantafyllou A.G., **Garas S.**, Evagelopoulos V., Zoras S., Diamantopoulos C., *Specific pollutants concentrations and elemental analysis of airborne particles in a school building*, Protection and Restoration of the Environment VIII, Chania, Greece, Presented July 2006, Proceedings pp. 2028-2035.
- Triantafyllou A.G., Zoras S., Evagelopoulos V., **Garas S.**, Diamantopoulos C, DOAS MEASUREMENTS ABOVE AN URBAN STREET CANYON IN A MEDIUM SIZED CITY, 10th International Conference on the Environmental Science and Technology (CEST2007), 5 - 7 September 2007, Cos island, Greece, Abstract Book pp. 190, Proceedings CEST2007: A1449-1456.
- S. Zoras, A. Merah, L. Aldaoui, S. Papalexioy, A.G. Triantafyllou, V. Evagelopoulos, **S. Garas**, C. Diamantopoulos, Assessing the influence of small phenomena to local/meso-scale simulation results by two-way model coupling I. Fast chemistry module implementation & vertical fluxes calculation II. Mesoscale simulations, HARMO 11 Conference 11th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, Cambridge, United Kingdom July 2nd-5th, 2007, Proceedings pp. 383.
- A. Iordanidis, S. Kalaitzidis, K. Christanis, G. Siavalas, J.J.M. Vervoort, P. de Waard, B. van Lagen, B.P. Tuin, M.W. Fraaije, G. Karamitrou-Mentessidi, M. Lykiardopoulou, A. Asvesta, **S. Garas**. « *Organic Petrology and Geochemistry in the service of Archaeology: a preliminary study of archaeological organic remains from northern Greece*». 61st ICCP/ 26th TSOP Meeting, Gramado, RS, Brazil, Sept. 19 – 26, 2009.
- Evagelopoulos V, Triantafyllou AG, Albanis TA, Zoras S, **Garas S**, Asvesta A, Diamantopoulos C: "Polycyclic aromatic hydrocarbons (PAHs) in fine and coarse particles", In *CEST2009*: B-230-237, (Sep 2009)

- Triantafyllou A.G. , Krestou A, **Garas S**, Diamantopoulos Ch., Skordas J., 2009. « PM2.5 and PM10 concentrations and health impact in West Macedonia GREECE», International Workshop on “*RISK ASSESSMENT AND HUMAN EXPOSURE TO HAZARDOUS MATERIALS*”, organized by School of Medicine, Aristotle University of Thessaloniki, GREECE, Thessaloniki, 21 – 24 October 2009, Abstract Book pp. 40.
- **Garas S**, Krestou A, Diamantopoulos C, Skordas J, Triantafyllou AG: "A study of the geogenic and anthropogenic emission sources contribution to the pm10 and pm2.5 elemental composition in Kozani", In PROTECTION 2010: (Jul 2010), Abstract Book p. 136, Proceedings pp. 280-288.
- A. G. Triantafyllou, **S. Garas**, Ch. Diamantopoulos, A. Iordanidis, A. Asvesta, A. Krestou, D. Proiou, “PM10 CONCENTRATIONS, MORPHOLOGY, MINERALOGY AND CHEMICAL CHARACTERISTICS IN AN URBAN AND NEARBY INDUSTRIAL LOCATION IN GREECE”, 16th International Symposium on Environmental Pollution and its Impact on Life in the Mediterranean Region, September 24th to 27th, 2011, Ioannina, Greece
- A.G. Triantafyllou, A. Krestou, **S. Garas**, V. Matthaïos, Ch. Diamantopoulos, J. Skordas, “PM10 CONCENTRATIONS AND SOME FIRST RESULTS OF SOURCE ATTRIBUTION IN URBAN AND INDUSTRIAL AREA IN GREECE”, PROTECTION AND RESTORATION OF THE ENVIRONMENT XI 3-6 JULY 2012, THESSALONIKI GREECE, **Intr. Conference, Procds. pp1050 – 1059, ISBN 978-960-99922-1-3.**
- KRESTOU A, TRIANTAFYLLOU A, **GARAS S**, TSEKOURAS V, DIAMANTOPOULOS C, «DESIGN, CONSTRUCTION AND TESTING OF A LABORATORY CHAMBER FOR DUST GENERATION AND SAMPLING», 13th International Conference on Environmental Science and Technology Athens, Greece, 5-7 September 2013, Proceedings: CEST2013_0158.
- **Stelios Garas**, Athanassios G Triantafyllou, Christos Diamantopoulos, Krestou Athina, Vassilis Matthaïos, Vassilis Tsekouras, “Ambient concentrations and chemical features of PMx due to the emissions of the consume by the central heating biomass”, Istanbul, Turkey, September 28 to October 1, 2013, Abstract Book pp. 52.
- Triantafyllou A., Moussiopoulos N., **Garas S.**, Krestou A., Douros I., Diamantopoulos Ch., Skordas J., Matthaïos V., Leivaditou H., Tsegas G., Fragkou E., Pavlidakis F., Andreadou M., and Kouridou O., 2015, “THEOPHRASTOS: PMX Emissions factors – dispersion from fugitive dust sources in lignite mines of western Macedonia, Greece”, Proceedings of the 14th International Conference on Environmental Science and Technology Rhodes, Greece, 3-5 September 2015, CEST2015_00264
- Triantafyllou A.G, Krestou A., Kalogiros J, Zoumakis N., Leivaditou E., **Garas S.**, Konstantinidis E. and Rados K., 2015 “comparison of mesoscale model with SODAR wind and radiometer temperature profiler measurements over an urban area”, Proceedings of the 14th International Conference on Environmental Science and Technology Athens, Greece, 3-5 September 2015, CEST2015_01447.

- MATTHAIOS V.N., TRIANTAFYLLOU A.G., ALBANIS T.A., SAKKAS V. and **GARAS S.**, 2015 “PM10 EXTREME EPISODES IN WESTERN MACEDONIA: LOCAL EMISSIONS VS LONG RANGE TRANSPORT”, Proceedings of the 14th International Conference on Environmental Science and Technology Rhodes, Greece, 3-5 September 2015, CEST2015_00263.
- Matthaïos V. N., **Garas S.**, Triantafyllou A.G, 2016, « Urban heat island in a small size town in northwestern Greece – A comparison to other Greek areas», 13th International Conference on Meteorology, Climatology and Atmospheric Physics, Proceedings COMECAP 2016, pp. 759 - 765.
- **S. K. Garas**, A. G. Triantafyllou, S. Zapsis, Ch. Diamantopoulos, I. Skordas, and J. G. Bartzis «PM10 concentrations, trace elements and sources’ identification in three representative receptors of Western Macedonia, Greece.», Proceedings of the 15th International Conference on Environmental Science and Technology Rhodes, Greece, 31 August to 2 September 2017, CEST2017_01023.
- **S. K. Garas**, A. G. Triantafyllou, E. I. Tolis, Ch. Diamantopoulos, A. Asvesta, A. S. Dounavis, J. G. Bartzis, «Some first results on the PM10-bound polycyclic aromatic hydrocarbons in urban, industrial and rural area in Western Macedonia, Greece», 14th International Conference on Meteorology, Climatology and Atmospheric Physics, Alexandroupolis 15 – 17 October 2018, Greece, Proceedings COMECAP 2018, pp. 840 - 845.
- Triantafyllou A., Andreadou M., Moussiopoulos N., **Garas S.**, Kapageridis I., Tsegas G., Diamantopoulos Ch., Saxanidis Ch., Skordas J., « SURFACE MINING IN WESTERN MACEDONIA, GREECE: PM10 EMISSIONS AND DISPERSION», Proceedings 14th International Symposium of Continuous Surface Mining, Thessaloniki 23 – 26 September 2018, Greece, ISCSM2018, Book of Abstracts pp. 51 – 52.
- Triantafyllou A.G., **Garas S.**, Diamantopoulos Ch., Kaldellis J.K., Ouleiridis L., Konstantinidis E., “Remote sensing measurements and investigation of the ABL temperature profile over large and broad mountain basin” 16 th International Conference on Environmental Science and Technology Rhodes, Greece, 4 to 7 September 2019 CEST2019_00850
- V.D. Diamanti, A.G. Triantafyllou and S.K. Garas, 2021. “Regional effects of socio-economic changes during the last decade in Greece: The case of air quality in Western Macedonia region”. European Aerosol Conference – EAC 2021, 30 August - 3 September 2021, hosted by the UK and Ireland Aerosol Society.
- Diamanti V, Triantafyllou A. and Garas S., 2021. “Assessment of particulate pollution in a medium sized Greek city - the effect of biomass burning and COVID-19 lockdown”, 17th International Conference on Environmental Science and Technology Athens, Greece, 1 to 4 September 2021 (cest2021).
- Triantafyllou, I Kapageridis, S. Garas and F. Pavloudakis, 2021. “Development of emission factor equations for surface mining activities: the case of shovel excavation and loading”. *RawMat2021-International Conference on Raw Materials and Circular*

Assessments - Technical Reports

- **THEOFRASTOS:** Quantification of the contribution of Eordea’s basin lignite open pit mines in emissions – concentrations of PM10, from the current and planned activities, in sources and receptors”, funded by the Lignite Center of Western Macedonia/PPC S.A.
- “Environmental telematic dynamic system development for air quality management in the area of Kozani – Ptolemaida”, funded by the W. Macedonia Regional Operational Program.
- “Study of the absorption and transportation of toxic elements from particulate matter in urban and non- residential areas nearby lignite ores and power stations”, funded by EPEAEK/Archimides II, (2005- 2006).
- “Characterization of particulate matter pollution in urban areas near lignite ores and power stations – Toxicology studies and effects on population health”, funded by ΕΠΕΑΕΚ/Archimides, (2004- 2006).
- “Advanced Risk management system, 2003, AUTH, Long term A.P. forecast in an urban area by the application of artificial neural networks networks”, funded by Special Account for Research Funds, TEI West Macedonia
- “Pilot Atmospheric Environment Management system in the Region of West Macedonia”, funded by W. Macedonia Regional Operational Program 2000 - 2006, promoted by TEI of West Macedonia.
- “Contribution in the assessment of possible environmental effects from the fire in Ag. Dimitrios Power Plant on 25/12/2001”, funded by the Environmental Centre S.E. Kozani, promoted by Environmental Control and Protection Section KTE of West Macedonia.
- “Chemical analysis study of respirable particulate matter (PM10) in Athens atmosphere”, promoted by Research Committee AUTH.
- Source apportionment of TSP in the lignite burning area of western Macedonia, Greece, Contracting Authority: PPC S.A, Contractor: TRC of W. Macedonia (15/10/2000 - 02).