



Stergiani (Stella) Ordoudi

Assoc. Professor/Food Scientist, PhD

Laboratory of Oenology & Alcoholic Beverages, School of Agriculture, Aristotle University of Thessaloniki
Thermi-Thessaloniki, GR-57001, Greece
e-mail: steord@agro.auth.gr

EDUCATION

Ph.D in Chemistry (School of Chemistry, Aristotle University of Thessaloniki) Thesis: "Phenolic acids as natural inhibitors of oxidation: Assessment of activity, prospects for exploitation in functional foods"	2003-2006
M.Sc. in Food Chemistry and Technology (School of Chemistry, Aristotle University of Thessaloniki) Thesis: "Detection of saffron adulteration with red food colorants"	2001-2003
B.Sc. in Chemistry (School of Chemistry, Aristotle University of Thessaloniki)	1996-2001

TRAINING & NETWORKING ACTIVITIES

Training school in Spectroscopy (COST CA19145, Nofima, Campus Ås, Norway)	12-14/09/2023
Short Term Scientific Mission (STSM) within the frame of COST CA19145 entitled as "Advanced chemometric approaches in non-targeted FT-IR spectroscopy for olive oil quality and authenticity testing" (Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia, Modena, Italy)	06-27/07/2021
International workshop "Smart Spectral Sensors for Agri-Food Quality and Process Control", (COST 19145, Porto, Portugal, online)	30.09-01/10/2021
Workshop "Metrology and traceability – Applications in the food sector" (IMEKOFOODS (TC23) 3 rd International Conference, Thessaloniki, Greece)	1–4/10/2017
Training school in Saffron Proteomics (COST FA1101, Parma, Italy)	23-25/09/2014
Intensive Training Course in "Laboratory accreditation issues according to the standard EN ISO/IEC 17025:2005: Validation / Verification, Uncertainty, Calibration, Internal Audit Quality Inspections"	28/03-12/04/2014
Training seminar in business planning (40 hours) & guidance (12 hours) in the frame of "Business Idea Competition" (Department of Economics, AUTH, Thessaloniki)	6/09-29/11/2013
Short Term Scientific Mission (STSM) within the frame of COST FA1101 entitled as "Meta-analysis of NMR data using chemometrics for assessment of age-related biomarkers in saffron" (NMR Laboratory, Institute for the study of Macromolecules (ISMAC), Milan, Italy)	01-08/12/2013
EU Seminar on Saffronomics (COST FA1101, Cuenca, Spain)	07-09/11/2012
Post-doctoral research (Characterization of saffron extract composition using NMR techniques) (NMR Center, University of Ioannina, Greece)	01/07-30/09/2010
"Workshop on Antioxidant Measurement Assay Methods" , (IUPAC, Instabul, Turkey)	21/04/2010
Socrates-Erasmus postgraduate fellowship (Cátedra de Química Agrícola, E.T.S. de Ingenieros Agrónomos, Universidad de Castilla-La Mancha, Albacete, Spain)	01/10 - 31/12/2003
3rd International advanced course on "Chemistry and Biochemistry of Antioxidants" (Department of Toxicology and Biochemistry-VLAG school, University of Wageningen, The Netherlands)	24-30/11/2002

PROFESSIONAL TEACHING EXPERIENCE

Teaching Research Staff-Assoc. Professor , School of Agriculture, Aristotle University of Thessaloniki	2024-
Laboratory Teaching Staff & Research Associate , School of Chemistry, Aristotle University of Thessaloniki	2014-2024
Teaching assistant-Lecturer , Faculty of Food Technology and Nutrition, Technological Educational Institute of Thessaloniki	2008-2010
Teaching assistant & Research Associate , Laboratory of Food Chem. & Tech., School of Chemistry, Aristotle University of Thessaloniki	2002-2006

PROFESSIONAL RESEARCH EXPERIENCE

METROFOOD-EPI (Early Phase Implementation) funded by EU (Horizon 2020)	01/2024-12/2024
"ISO Trade Standard specifications and quality improvement of "Krokos Kozanis" product" knowledge transfer project - contract -Cooperative of Greek Saffron Producers	11/2022-11/2023
"Development of edible olives conforming to a low-salt diet, FILELIA" funded by Regional Development funds of Central Macedonia Region (Greece)	06/2022-02/2023
"Development of innovative, carbonated natural mineral Souroti spring water products enriched with herbal extracts of Macedonian land, NIRON HYDOR" funded by Regional Development funds of Central Macedonia Region (Greece)	10/2021-10/2023
"Food Nutrition Security Cloud, FNS-Cloud" funded by EU (Horizon 2020)	01/2020-05/2023
"METROFOOD-RI Rreparatory Phase" funded by EU (Horizon 2020)	01/2020-05/2023
"Knowledge Transfer to the SME "Galaxy OE" for the development of a new production line for a mustard- based condiment with natural preservatives" funded by Regional Development funds of Central Macedonia Region (Greece)	10/2020-04/2021

"Advanced solutions for assuring the overall authenticity and quality of olive oil-OLEUM" funded by EU (Horizon 2020)	09-12/2020
"Exploitation of aromatic and medicinal plants of Greek Flora, AROMADISTIL" co-funded by EU and Greek national funds (EPAnEK)	05-12/2020
"Physicochemical examination of avocado from the Region of Crete for investigating a quality-geographical indication relationship" funded by the Region of Crete	05/2018-08/2020
"Quality control of saffron products" , knowledge transfer project contract (Ingenieurburo Dipl.-Ing. Agr. Christian Strunden, Switzerland)	09/2019 –03/2020
"PRO-METROFOOD Progressing towards the construction of METROFOOD-RI" funded by EU (Horizon 2020)	04-12/2017
"Guide to Good Hygiene Practices in the production process of the PDO "Krokos Kozanis" knowledge transfer project contract - Cooperative of Greek Saffron Producers	11/2015
"Updating Quality Standards for the PDO "Krokos Kozanis" knowledge transfer project - contract -Cooperative of Greek Saffron Producers	11/2015
"Bioaccessibility study of constituents of herbal teas produced by Krokus Kozanis Products" knowledge transfer project contract -Krocus Kozanis Products S.A.Enterprise	02/2013-01/2014
"COST ACTION FA 1101. SAFFRONOMICS: Omics Technologies for Crop Improvement, Traceability, Determination of Authenticity, Adulteration and Origin in Saffron" funded by EU	2011-2015
"Crocusbank: Genetic resources of saffron and allies" funded by EU (AGRI GEN RES 870/2004)	06/2007- 05/2011
"Development of novel meat products based on plant-derived raw materials" knowledge transfer project contract - Nikas S.A. Enterprise	03 -09/2006
"Saffron adulteration by colour additives: developing an antifraud methodology" funded by EU (G6ST-CT-2000-00233)	2002-2004
"Analytical protocol for the analysis of olive oil to detect adulteration with hazelnut oil" funded by the University of Reading (United Kingdom)	10/2002

OTHER SCIENTIFIC ACTIVITIES

Editorial Board Member in the peer-reviewed Journal "Applied Spectroscopy Reviews" (Q1 in the spectroscopy field) by Taylor and Francis	2024
Member of the Scientific Committee of the 70th International Congress and Annual Meeting of the Society for Medicinal Plant and Natural Product Research (GA) (Dept. Chem. Eng. AUTH/GA Soc., Thessaloniki, Greece)	28-31.08.2022
Coordinator of the "1st Webinar on Food Metrology-Food Authenticity" held by the Greek Node of the METROFOOD-RI (Greece)	09/03/2022
Local chair of the Organizing Committee of the annual Chemistry Conference of Postgraduate and Pregraduate students of AUTH (Thessaloniki, Greece)	2021-
Member of the research network "Natural Products Research Centre of Excellence-AUTH" (http://kedek.auth.gr/?q=el/node/1071) (Thessaloniki, Greece)	2019-
Trainer in the Summer school on Natural Products: Chemistry, Biological Activities & Technological Applications (Structure-antioxidant activity relationships) (Thessaloniki, Greece)	28/04/2018
Peer reviewer in collaboration with several academic journals (Elsevier, American Chemical Society, MDPI)	2016 -
Co-leader of a Working Group in the frame of the Action COST FA1101: Saffron-Omics "Omics Technologies for Crop Improvement, Traceability, Determination of Authenticity, Adulteration and Origin in Saffron"	2011-2015
Co-organiser of a Workshop for members of the Action COST FA1101: Saffron-Omics entitled as "Advances in molecular and phytochemical fingerprinting for traceability and authenticity of saffron" (Thessaloniki, Greece)	14-15/05/2015
Member of the Scientific Committee of the 2 nd Annual Conference of the COST FA1101 Action: Saffronomics (Wageningen, The Netherlands)	02-03/10/2014
Oral presentations (invited by the Cooperative of Saffron Producers of Kozani) in several educational events aiming at familiarizing pupils and young people with saffron quality, authenticity and biological properties	2008-2013
Trainer in the Training School on Phytochemical Analysis (Principles, Instrumentation and Applications of UV-Vis spectrometry) in the frame of the COST FA0906 Action (Thessaloniki, Greece)	14/02/2013
Member of the Organizing Committee of the 3rd International Symposium on Saffron: Forthcoming Challenges in Cultivation, Research and Economics) (Krokos Kozanis, Greece)	20-23/05/2009

RESEARCH INTERESTS AND TECHNICAL SKILLS

Spectroscopic methods (FT-MIR, NIR, NMR, FL) for the quality and authenticity control of natural products (saffron, essential oils, olive oil, fruit wines-vinegars)

Studies on **natural antioxidants** and **natural colorants** (analysis-extraction-stability), **structure-antioxidant activity** relationships

Hands-on experience in using spectrometers (UV-Vis, FL, FT-IR, NMR), chromatographic systems (HPLC-DAD-FL, LC-MS, GC-FID/MS), extraction systems (SPE)

Chemometric methods (PCA, SIMCA, PLS-DA, OPLS-DA, PLS-R) and statistical software **SPSS, SIMCA-P, Multibase 2015**

Language knowledge: English (Proficiency), Spanish (Elementary)

PUBLICATIONS / BOOKS

FULL RESEARCH PROFILE AVAILABLE AT [HTTPS://WWW.RESEARCHGATE.NET/PROFILE/STELLA-ORDOULI](https://www.researchgate.net/profile/Stella-Ordouli)

ARTICLES IN PEER-REVIEWED JOURNALS: 40

CHAPTERS IN BOOKS & ENCYCLOPEDIAS: 5

REFEREED CONFERENCE COMMUNICATIONS & PUBLICATIONS:>90

LIST OF PUBLICATIONS

1. I Pyrka, S Stefanidis, SA Ordoudi, S Lalou, N Nenadis **Oxidative Stability of Virgin Avocado Oil Enriched with Avocado Leaves and Olive-Fruit-Processing By-Products (Leaves, Pomace) via Ultrasound-Assisted Maceration**, *Foods* (2025) 14, 294
2. S.A. Ordoudi*, M.Z. Tsimidou, **Building a database for the quality characteristics of the Protected Designation of Origin saffron Krokos Kozanis, considering international trade requirements**, *Exploration of Foods and Foodomics*, (2024) 2, 236-251, open access DOI: <https://doi.org/10.37349/eff.2024.00036>
3. T. Bintsis*, F.T. Mantzouridou, S. Lalou, P. Alvanoudi, S.A. Ordoudi, A.S. Angelidis, D. Fletouris, **Comparative analysis of chemical, microbiological, sensory and volatile compound profiles in manouri PDO and artisanal manouri cheeses: a preliminary study**, *Food and Bioprocess Technology* (2024) 1-15, open access DOI: 10.1007/s11947-024-03333-z
4. S.A. Ordoudi*, C. Ricci, G. Imparato, M. Chroni, A. Nucara, A. Gerardino, F.R. Bertani, **A non-invasive, sensor-based approach to exploit the autofluorescence of saffron (*Crocus sativus* L.) for on-site evaluation of aging**, *Food Chemistry*, (2024) 455, 139822-139822, open access
5. S. Lalou, S.A. Ordoudi, F.T. Mantzouridou*, **Evaluation of safety and quality parameters of persimmon balsamic-type vinegar during multistarter culture fermentation and accelerated aging with oak chips**, *Food Bioscience*, (2024) 57, 103526, open access DOI: 10.1016/j.fbio.2023.103526
6. S. Stefanidis, S.A. Ordoudi, N. Nenadis, I. Pyrka, **Improving the functionality of virgin and cold-pressed edible vegetable oils: Oxidative stability, sensory acceptability and safety challenges**, *Food Research International*, (2023) 174, 113599, DOI: 10.1016/j.foodres.2023.113599
7. P. Alvanoudi, S.A. Ordoudi, A. Nakas, A.N. Assimopoulou, Fani Th. Mantzouridou*, **Brine volatilome changes along the spontaneous fermentation of Spanish-style cv. Chalkidiki green olives under high and low NaCl conditions** *Food and Bioprocess Technology* (2023), open access DOI: 10.1007/s11947-023-03211-0
8. F. Kokkinaki, S.A. Ordoudi*, **Insights to the FT-IR spectral fingerprints of saffron (*Crocus sativus* L.) after gentle drying treatments** *Food and Bioprocess Technology* (2023) open access DOI:10.1007/s11947-023-03119-9
9. S.A. Ordoudi*, L. Strani, M. Cocchi, **Toward the Non-Targeted Detection of Adulterated Virgin Olive Oil with Edible Oils via FTIR Spectroscopy & Chemometrics: Research Methodology Trends, Gaps and Future Perspectives** *Molecules* (2023), 28, 337 (Special Issue *Chemometric and Spectroscopic Methods in Food Analysis*) open access DOI: 10.3390/molecules28010337
10. S.A. Ordoudi, O. Özdikicierler, M.Z. Tsimidou*, **Detection of ternary mixtures of virgin olive oil with canola, hazelnut or safflower oils via non-targeted ATR-FTIR fingerprinting and chemometrics** *Food Control* (2022) 142, 109240 DOI: 10.1016/j.foodcont.2022.109240
11. G.A. Papadopoulos*, S. Lioliopoulou, S.A. Ordoudi, I. Giannenas, V. Van Hoeck, D. Morisset, G. Arsenos, P. Fortomaris, F.T. Mantzouridou, **Xylanase Supplementation in Wheat-Based Diets of Laying Hens Affects the Egg Yolk Color, Carotenoid and Fatty Acid Profiles** *Foods* (2022) 11, 2209 open access DOI: 10.3390/foods11152209
12. S.A. Ordoudi, M. Papapostolou, N. Nenadis, F. Th. Mantzouridou, M.Z. Tsimidou*, **Bay Laurel (*Laurus nobilis* L.) Essential Oil as a Food Preservative Source: Chemistry, Quality Control, Activity Assessment, and Applications to Olive Industry Products** *Foods* (2022) 11, 752 (Special Issue *Natural Bioactive Compounds and Foods of the Mediterranean Diet*) open access DOI: 10.3390/foods11050752
13. M.Z. Tsimidou*, S.A. Ordoudi, F.Th. Mantzouridou, N. Nenadis, T. Stelzl, M. Rychlik, N. Belc, C. Zoani, **Strategic Priorities of the Scientific Plan of the European Research Infrastructure METROFOOD-RI for Promoting Metrology in Food and Nutrition** *Foods* (2022) 11, 599 open access DOI: 10.3390/foods11040599
14. N. Tziolas, S.A. Ordoudi, A. Tavlaridis, K. Karyotis, G. Zalidis, I. Mourtzinou*, **Rapid Assessment of Anthocyanins Content of Onion Waste through Visible-Near-Short-Wave and Mid-Infrared Spectroscopy Combined with Machine Learning Techniques**. *Sustain.* (2021) 13, 6588 (Special Issue *A Sustainable Approach in Food Science and Technology Aspects*) open access DOI: 10.3390/su13126588
15. S. Lalou, S.A. Ordoudi*, Fani Th. Mantzouridou*, **On the effect of microwave heating on quality characteristics and functional properties of Persimmon juice and its residue** *Foods* (2021) 10, 2650 (Special Issue *Natural Carotenoids as Functional Food Ingredients*) open access DOI:10.3390/foods10112650
16. S.A. Ordoudi, M. Papapostolou, S. Kokkini, M.Z. Tsimidou*, **Diagnostic Potential of FT-IR Fingerprinting in Botanical Origin Evaluation of *Laurus nobilis* L. Essential Oil is Supported by GC-FID-MS Data**, *Molecules* (2020) 25, 583
17. S.A. Ordoudi, M. T. Pastor Ferriz, A. Kyriakoudi, R. V. Molina, M. De Los Mozos Pascual, M. Z. Tsimidou*, **Physicochemical characterization of *Crocus serotinus* stigmas indicates their potential as a source of the bioactive apocarotenoid crocetin**, *Eur. J. Lipid Sci. Technol* (2019) 121, 1900011
18. S.A. Ordoudi*, Ch. Bakirtzi, M.Z. Tsimidou, **The potential of tree fruit stone and seed wastes in Greece as sources of bioactive ingredients** *Recycling* (2018) 3, 9 open access
19. S. A. Ordoudi, Ch. Staikidou, A. Kyriakoudi, M.Z. Tsimidou*, **A stepwise approach for the detection of carminic acid in saffron with regard to religious food certification**, *Food Chem* (2018), 267, 410-419, DOI: 10.1016/j.foodchem.2017.04.096
20. S.A. Ordoudi, L.R. Cagliani, D. Melidou, M.Z. Tsimidou*, R. Consonni, **Uncovering a challenging case of adulterated commercial saffron** *Food Cont.* (2017) 81, 147-155
21. I. Bosmali, S.A. Ordoudi, M.Z. Tsimidou, P. Madesis*, **Greek PDO saffron authentication studies using species specific molecular markers**, *Food Res Int.* (2017) 100, 899-907
22. R. Consonni*, S.A. Ordoudi, L.R. Cagliani, M. Tsiangali, M.Z. Tsimidou, **On the traceability of commercial saffron samples using 1H-NMR and FT-IR metabolomics**, *Molecules* (2016) 21, 286
23. T. Chatzimitakos, V. Exarchou*, S.A. Ordoudi, Y. Fiamegos, C. Stalikas, **Ion-pair assisted extraction followed by 1H NMR determination of biogenic amines in food and biological matrices**, *Food Chem.* (2016), 202, 445-450
24. G. Paredi, S. Raboni, F. Marchesani, S.A. Ordoudi, M.Z. Tsimidou, A. Mozzarelli*, **Insight of saffron proteome by Gel Electrophoresis**, *Molecules* (2016) 21,167
25. S.A. Ordoudi, A. Kyriakoudi, M.Z. Tsimidou*, **Enhanced bioaccessibility of crocetin sugar esters from saffron in infusions rich in natural phenolic antioxidants**, *Molecules* (2015), 20, 17760-17774
26. S.A. Ordoudi, L.R. Cagliani, S. Lalou, E. Naziri, M.Z. Tsimidou, R. Consonni*, **1H NMR-based metabolomics of saffron reveals markers for its quality deterioration**, *Food Res. Int.* (2015) 70, 1-6

27. A. Kyriakoudi, S.A. Ordoudi, M. Roldan-Medina, M.Z. Tsimidou*, **Saffron, a functional spice**, *Austin J Nutri Food Sci.* (2015) 3, 1059, **open access**
28. S. A. Ordoudi*, F. Mantzouridou, E. Daftsiou, C. Malo, E. Hatzidimitriou, N. Nenadis, M.Z. Tsimidou, **Pomegranate juice functional constituents after alcoholic and acetic acid fermentation**, *J Func Foods*, (2014) 8, 161-168
29. S. A. Ordoudi, M. de los Mozos Pascual, M.Z. Tsimidou*, **On the quality control of traded saffron by means of transmission Fourier-transform mid-infrared (FT-MIR) spectroscopy and chemometrics**, *Food Chem*, (2014) 150, 414-421
30. O. Bountagkidou, E.J.C. Van der Klift, M.Z. Tsimidou, S.A. Ordoudi, T.A. Van Beek*, **An on-line high performance liquid chromatography-crocin bleaching assay for detection of antioxidants** *J Chrom A*, (2012) 1237, 80-85
31. S.A. Ordoudi, M.Z. Tsimidou*, **Consideration of fluorescence properties for the direct determination of erythrosine in saffron in the presence of other synthetic dyes**. *Food Addit. Contam. A* (2011) 28, 417-422.
32. S.A. Ordoudi, S.K. Tsermentseli, N. Nenadis, M. Tsimidou*, V.P. Papageorgiou, **Structure-radical scavenging activity relationship of Alkannin/Shikonin derivatives** *Food Chem.* (2011) 124, 171-176.
33. O.G. Bountagkidou, S.A. Ordoudi, M.Z. Tsimidou*, **Structure-antioxidant activity relationship study of natural hydroxybenzaldehydes using in vitro assays** *Food Res Int.* (2010) 43, 2014-2019.
34. S.A. Ordoudi, C.D. Befani, N. Nenadis, G.G. Koliakos and M.Z. Tsimidou*, **Further examination of antiradical properties of *Crocus sativus* stigmas extract rich in crocins** *J. Agric. Food Chem* (2009), 57, 3080–3086.
35. A.M. Sanchez, M. Carmona, S.A. Ordoudi, M.Z. Tsimidou and G.L. Alonso*, **Kinetics of individual crocetin ester degradation in aqueous extracts of saffron (*Crocus sativus* L.) upon thermal treatment in the dark** *J. Agric. Food Chem* (2008) 56, 1627-1637.
36. S. A. Ordoudi, M.Z. Tsimidou*, **Crocin bleaching assay (CBA) in structure-radical scavenging activity studies of selected phenolic acids**. *J. Agric. Food Chem* (2006) 54, 9347-9356
37. S. A. Ordoudi, M.Z. Tsimidou*, A.P. Vafiadis and E. G. Bakalbassis. **Structure-DPPH scavenging activity relationships: Parallel study of catechol and guaiacol acid derivatives**. *J. Agric. Food Chem* (2006) 54, 5763-5768
38. S. A. Ordoudi and M.Z. Tsimidou*. **Crocin- bleaching assay step by step: observations and suggestions for an alternative validated protocol** *J. Agric. Food Chem* (2006) 54, 1663-1671
39. A. Zalacain*, S. A. Ordoudi, E.Ma Diaz-Plaza, M. Carmona, I. Blazquez, M. Z. Tsimidou, G. L. Alonso, **Near-Infrared spectroscopy in saffron quality control: Determination of chemical composition and geographical origin**, *J. Agric. Food Chem* (2005) 53 9337-9341
40. A. Zalacain*, S. A. Ordoudi, I. Blazquez, E.Ma Diaz-Plaza, M. Carmona, M. Z. Tsimidou, G. L. Alonso, **Screening method for artificial colorants in saffron using derivative UV-Vis spectrometry after precipitation of crocins**, *Food Add. Contam.* (2005) 22, 607-615

CHAPTERS IN BOOKS:

1. S.A. Ordoudi and M.Z. Tsimidou, **Fourier Transform Infrared spectroscopy (FT-IR) for monitoring changes in saffron apocarotenoids upon storage** in *Carotenoid Analysis Methods and Protocols in Food Protocols*, Meléndez Martínez A.J. (Ed.) Humana Press, Springer Science + Business Media, New York, (under publication) **2025**
2. R. Consonni, L. R. Cagliani, M. G. Polissiou, E. A. Petrakis, M. Z. Tsimidou and S. Ordoudi, **NMR spectroscopic studies in saffron authenticity and quality (within the frame saffronomics COST action FA1101)** in *Magnetic Resonance in Food Science: Defining Food by Magnetic Resonance* Capozzi, F., Laghi, L., Belton, P.S., (Eds) Royal Society of Chemistry, pp. 65-76, **2015**
3. S.A.Ordoudi and M. Z.Tsimidou, **Measuring Antioxidant and Prooxidant Capacity Using the Crocin Bleaching Assay (CBA)** in *Advanced Protocols in Oxidative Stress III, Methods in Molecular Biology*, Ed. Armstrong, D. Humana Press, Springer Science + Business Media, New York, **2015**, pp. 329-344 ISBN(e-book): 978-1-4939-1441-8
4. S.A.Ordoudi and M. Z.Tsimidou, **Saffron Quality: Effect of Agricultural Practices, Processing and Storage** in *Production Practices and Quality Assessment of Food Crops* Eds. Dris, R., Jain, S.M., Kluwer Academic Publ. Dordrecht, Netherlands, **2004**, pp.209-260. ISBN(e-Book): 978-1-4020-2533-4.

ARTICLE IN ENCYCLOPEDIAS:

1. M.Z. Tsimidou*, S. A. Ordoudi, N. Nenadis, I. Mourtzinou, **Food Fraud**, *The Encyclopedia of Food and Health*, (2016), Vol. 3, pp. 35-42