

SHORT CV KONTOYANNIS C

Name: CHRISTOS KONTOYANNIS
 Position (2009-): Professor of Pharmaceutical Analysis, Department of Pharmacy, University of Patras

Education

6/88 Ph.D in Analytical Chemistry, Georgetown University, USA
 12/86 M.Sc. in Chemistry, Georgetown University, USA
 7/83 B. Sc. in Chemistry, University of Patras, Greece

Administrative Experience

2003-2007 Head of the Department and member of the University Senate
 2009-2011, 2025- Vice Head of the Department
 2005- Director of the Laboratory of Instrumental Analysis
 2004-2013 Member of the Research Committee of University of Patras
 2008-2015 Member of the Bioethics Committee, University of Patras
 2018-2021 Elected Member of the Deanery of the School of Health Sciences of Univ. of Patras
 1992- Member of the General Assembly of the Department of Pharmacy
 2012-2020 Member and/or Chairman of the Appeal's Committee of the Research Committee of University of Patras

Research Statistics

Publications in refereed journals: 72
 Publ. in refereed proceedings: 67
 Chapters in Books: 2
 Patents: 1
 Books: 3 (Editorial Board)
 Textbooks: 4 (in Greek), 3 translation from English
 Citations (w/o self citations) ca. 3040 (source: Scopus)
 h-index: 28 (source: Scopus)
 Research Grants (1990-2024): 16 (7 E.U., 1 NATO, 6 GSRT, 2 Other)
 Journal Reviewer: Twenty one (21) International Journals
 Editorial Board: Two (2) international journals
 Annual Research and/or Industry funding: ca 700 k€
 Research Program Evaluator for the following organisations:

- GSRT proposals;
- IKY (Greek State fellowships proposals);
- FP7 projects (evaluator for REA/EU);
- Evaluation of Croatia Pharmacy Departments,
- Cyprus (IRIS) proposals

Prizes/Distinctions

- Included in the database of top-cited scientists for career-long and for single recent year (2024) impact in the sub field of analytical chemistry (<https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/8>).
- The publication Calcium carbonate phase analysis using XRD and FT-Raman spectroscopy (Ch. Kontoyannis and N. Vayenas) was included in the 150th Anniversary Collection of the scientific journal Analyst of Royal Society of Chemistry of the most impact publications <https://pubs.rsc.org/en/journals/articlecollectionlanding?sercode=an&themeid=c0f60e1d-c11d-4590-8ca4-916003802b0d>
- Eight (8) Poster Prizes at different conferences;
- Fellowships from five Organisations;
- Silver medal for acknowledging contribution in the establishment of a Research Excellence Center

Areas of Expertise: Development of new analytical methodologies with emphasis on non-destructive techniques (micro-Raman, XRPD, SEM/EDX, micro-IR); Qualitative and quantitative determination of substances in formulations; Reverse Engineering for pharmaceutical formulations; Synthesis and characterization of biogenic materials and biomaterials (bones, ceramics, cystoliths, urinary stones etc.); Drug's Polymorphism

Publications in International Journals

1. P. Koutsoukos and C. Kontoyannis, "Precipitation of Calcium Carbonate in Aqueous Solution", J. Chem. Soc., Farad. Trans.1, 80 (1984) 1181. (To 1999 το περιοδικό συγχωνεύτηκε με άλλα και δημιουργήθηκε το Physical Chemistry Chemical Physics)
2. P. Koutsoukos and C. Kontoyannis, "Prevention and Inhibition of Calcium Carbonate Scale", J Crystal Growth, 69 (1984) 367.
3. C. Kontoyannis and R. de Levie, "A Somewhat Unusual Desad Peak Observed with the Protein-Solubilizing Detergent CHAPS", J. Electroanal. Chem., 222 (1987) 271.
4. C. Kontoyannis, L. Pospisil and R. de Levie, "On Irreversible Changes Upon Heating Lipid Solutions", J. Electroanal. Chem., 222 (1987) 277.
5. C. Kontoyannis, R. Sridharan and R. de Levie, "A Sodium Effect on the Two-Dimensional Condensation of 6-Methyl-Uracil", J. Electroanal. Chem., 236 (1987) 309.
6. C. Kontoyannis and R. de Levie, "Two-Dimensional Condensation of 2-Methyl-4,6-Dihydroxy-Pyrimidine at the Water-Mercury Interface", J. Electroanal. Chem., 249 (1988) 311.
7. C.G. Kontoyannis and G. Carountzos, "Quantitative Determination of the Cubic to Monoclinic Phase Transformation in Fully Stabilized Zirconias by Raman Spectroscopy", J. Am. Ceram. Soc., 77 (1994) 2191.
8. C.G. Kontoyannis and M. Orkoulou, "Quantitative Determination of the Cubic, Tetragonal and Monoclinic Phases in Partially Stabilized Zirconias by Raman Spectroscopy", J. Materials Science, 29 (1994) 5316.
9. C.G. Kontoyannis, "Quantitative Determination of CaCO₃ and Glycine in Antacid Tablets by Laser Raman Spectroscopy", J. Pharm. Biomed. Anal., 13 (1995) 73.
10. C.G. Kontoyannis and M. Orkoulou, "Quantitative Non-Destructive Determination of Salicylic Acid Acetate in Aspirin Tablets by Raman Spectroscopy", Talanta, 41 (1994) 1981.
11. C.G. Kontoyannis and V. Dracopoulos, "Influence of Fluoride Melts on Partially Stabilized ZrO₂", High Temperature and Materials Science, 34 (1995) 59. (Διακόπηκε η έκδοσή του το 1998 με IF 0.400.)
12. C.G. Kontoyannis, N. Bouropoulos and P. Koutsoukos, "Quantitative Analysis of Impurities in ε-Caprolactam by Raman Spectroscopy", The Analyst, 120 (1995) 347.
13. C.G. Kontoyannis, "Pyrolytic Boron Nitride Coated Graphite as Container of Reference Electrodes for Molten Fluorides" Electrochimica Acta, 40 (1995) 2547.
14. C.J.Stournaras, A. Tsetsekou, Th. Zambetakis, C. G. Kontoyannis and G. Carountzos, "Corrosion of Ytria-Fully Stabilized Zirconias from Molten Fluorides", J. Mater. Sc., 30 (1995) 4373.
15. C. G. Kontoyannis, G. Carountzos, C.J.Stournaras, and A. Tsetsekou, «Searching for the Stabilized Zirconia Exhibiting the Best Corrosion Resistance in Fluoride Melts», J. Mater. Sc. Letters, 15 (1996) 222. (To 2004 απορροφήθηκε από J. Mater. Sci)
16. N. Bouropoulos, C.G. Kontoyannis and P.G. Koutsoukos, «Nucleation Kinetics of ε-Caprolactam Melts in the Presence of Water Impurity», J. Crystal Growth, 171 (1997) 538.
17. C.G. Kontoyannis, N. Bouropoulos and P.G. Koutsoukos, «Use of Raman Spectroscopy for the Quantitative Analysis of Calcium Oxalate Hydrates: Application to Urinary Stones», Applied Spectroscopy, 51 (1997) 64. <http://www.opticsinfobase.org/as/abstract.cfm?URI=as-51-1-64>
18. C.G. Kontoyannis, M. Orkoulou and P. Koutsoukos, "Quantitative Analysis of Sulphated Calcium Carbonates Using Raman Spectrometry and Xray Powder Diffraction", The Analyst, 122 (1997) 33.
19. N. Bouropoulos, C.G. Kontoyannis and P.G. Koutsoukos, «Influence of Operational Variables on the Crystallization of ε-Caprolactam from Melts», J. Crystal Growth, 177 (1997) 119.
20. G. Carountzos, C. Kontoyannis and T. Ostvold. «Raman Spectral Study of WCl₆ in Alkali Chloride Melts», Ber. Bunsenges. Phys. Chem., 101 (1997) 847. (To 1999 το περιοδικό συγχωνεύτηκε με άλλα και δημιουργήθηκε το Physical Chemistry Chemical Physics)
21. C.G. Kontoyannis, N. Bouropoulos and P.G. Koutsoukos, «Urinary Stone Layer Analysis of Mineral Components by Raman Spectroscopy, IR Spectroscopy and X-Ray Powder Diffraction. A Comparative Study», Applied Spectroscopy, 51 (1997) 1205. <http://www.opticsinfobase.org/as/abstract.cfm?URI=as-51-8-1205>

22. C.G. Kontoyannis, N. Bouropoulos and P.G. Koutsoukos, «Raman Spectroscopy: A Tool for the Quantitative Analysis of Mineral Components of Solid Mixtures. The Case of Calcium Oxalate Monohydrate and Hydroxyapatite», *Vibrational Spectroscopy*, 15 (1997) 53.
23. C.G. Kontoyannis, S. Antimisiaris and D. Douroumis, «Quantitative Determination of the Non Entrapped Chlorothiazide in the Presence of Liposomes Using Differential Pulse Polarography», *Talanta*, 48 (1999) 979.
24. C.G. Kontoyannis, S. Antimisiaris and D. Douroumis, «Simultaneous Quantitative Determination of Diazepam and Liposomes Using Differential Pulse Polarography», *Analytica Chimica Acta*, 391 (1999) 83.
25. C. Kontoyannis, N. Bouropoulos, H. Dauaher, C. Bouropoulos and N. Vagenas, «Analysis of Prostatic Stent Encrustation and of Entrapped Urinary Stone Using FT-IR and FT-Raman Spectroscopy», *Applied Spectroscopy*, 54 (2000) 225. <http://www.opticsinfobase.org/as/abstract.cfm?URI=as-54-2-225>
26. C. Kontoyannis, and N. Vagenas, «Calcium Carbonate Phase Analysis Using XRD and FT-Raman Spectroscopy», *The Analyst*, 125 (2000) 251.
27. C.G. Kontoyannis and D. Douroumis, «Determination of Liposomes Drug Retention Capacity Using Differential Pulse Polarography: The Case of Chlorothiazide», *Analytica Chimica Acta*, 409 (2000) 99.
28. C. Kontoyannis and N. Vagenas, «FT-Raman Spectroscopy: A Tool For Monitoring The Demineralization of Bones», *Applied Spectroscopy*, 53 (2000) 1605. <http://www.opticsinfobase.org/as/abstract.cfm?URI=as-54-11-1605>
29. C. Hasiotis, V. Deimede and C. Kontoyannis, "New Polymer Electrolytes Based on Blends of Sulfonated Polysulfones with Polybenzimidazole", *Electrochimica Acta*, 46 (2001) 2401.
30. C. Hasiotis, Li Qingfeng, V. Deimede, J. K. Kalitsis, C. G. Kontoyannis and N. J. Bjerrum, "Development and Characterization of Acid-Doped Polybenzimidazole/Sulfonated Polysulfone Blend Polymer Electrolytes for Fuel Cells", *Journal of the Electrochemistry Society*, 148 (2001) A513.
31. E. Stefanidaki, C. Hasiotis and C. Kontoyannis, «Electrodeposition of Neodymium from $\text{LiF-NdF}_3\text{-Nd}_2\text{O}_3$ Melts», *Electrochimica Acta*, 46 (2001) 2665.
32. C.G. Kontoyannis and D. Douroumis, «A Polarographic Methodology for Continuous Non-Destructive Monitoring of Drug Release from Liposomes», *Journal of Liposome Research*, 11 (2001) 255.
33. C.G. Kontoyannis and D. Douroumis, "Release Study of Drugs from Liposomal Dispersions Using Differential Pulse Polarography", *Analytica Chimica Acta*, 449 (2001) 135.
34. O. Gortzi, E. Papadimitriou, C. Kontoyannis, S. Antimisiaris and P. Ioannou, «Arsonoliposomes, A Novel Class of Arsenic Containing Liposomes: Effect of Palmitoyl-Arsonolipid Containing Liposomes on the Viability of Cancer and Normal Cells in Culture», *Pharmaceutical Research*, 19 (2002) 79.
35. E. Stefanidaki, G. Photiadis, C. Kontoyannis, A. Vik and T. Østvold «Oxide Solubility and Raman Spectra of $\text{NdF}_3\text{-LiF-KF-MgF}_2\text{-Nd}_2\text{O}_3$ Melts», *J. Chem Soc., Dalton Trans.*, (11): (2002) 2302.
36. Li Qingfeng, H. A. Hjuler, C. Hasiotis, J. K. Kallitsis, C. G. Kontoyannis and N. J. Bjerrum «A Quasi-Direct Methanol Fuel Cell System Based on Blend Polymer Membrane Electrolytes», *Electroch. and Solid State Letters*, 5 (2002) A125.
37. N. Vagenas, A. Gatsouli, C. Kontoyannis, «Quantitative Analysis of Synthetic Calcium Carbonate Polymorphs Using FT-IR Spectroscopy», *Talanta*, 59 (2003) 831.
38. N. Vagenas, C. Kontoyannis, «A Methodology for Quantitative Determination of Minor Components in Minerals Based on FT-Raman Spectroscopy. The Case of Calcite in Dolomitic Marble», *Vibrational Spectroscopy*, 32 (2003) 261.
39. N. Charalampopoulos, K. Avgoustakis, C. Kontoyannis " Differential Pulse Polarography: A Suitable Technique for Monitoring Drug Release from Polymeric Nanoparticle Dispersions" *Analytica Chimica Acta*, 491 (2003) 57.
40. V. Soare, M. Burada, T. Ostvold, C. Kontoyannis, E. Stefanidaki, «Study of the Mg-Nd Alloy Obtained by Electrolysis in Molten Oxyfluoride Media», *J. Min. Met. B*, 39 (2003) 209.
41. S. Panteliou, A. Xirafaki, E. Panagiotopoulos, J. Varakis, N. Vagenas, C. Kontoyannis «Modal Damping for Monitoring Bone Integrity and Osteoporosis», *J. Biomech. Eng.- T ASME*, 126 (2004) 1.
42. M. Orkoula, C. Kontoyannis, C. Markopoulou and J.E. Koundourellis, «Development of Methodologies Based on HPLC and Raman Spectroscopy for Monitoring the Stability of Lovastatin in Solid State in the Presence of Gallic Acid», *J. Pharm. Biomed. Anal.*, 35 (2004) 1011.
43. V. Soare, C. Gurgu, M. Burada, T. Østvold and C. Kontoyannis, «The Production of a Mg –Nd Alloy by Direct Electrolysis from a Oxifluoride Melt», *Can. Metall. Quart.*, 45 (2006) 153.
44. M.G. Orkoula, C.G. Kontoyannis, C.K. Markopoulou and J.E. Koundourellis, «Quantitative Analysis of Liquid Formulations Using FT-Raman Spectroscopy and HPLC. The Case of Diphenhydramine Hydrochloride in Benadryl», *J. Pharm. Biomed. Anal.*, 41 (2006) 1406.
45. I. Karabas, M.G. Orkoula, C.G. Kontoyannis, «Analysis and Stability of Polymorphs in Tablets: The Case

- of Risperidone", *Talanta*, 71 (2007) 1382.
46. M. Orkoula, C. Kontoyannis, C. Markopoulou and J.E. Koundourellis, "M. Orkoula, C. Kontoyannis, C. Markopoulou and J.E. Koundourellis", *Talanta*, 73 (2007) 258.
47. D. Skorda and C. Kontoyannis, "Identification and Quantitative Determination of Atorvastatin Calcium Polymorph in Tablets Using FT-Raman Spectroscopy" *Talanta* 74 (2008) 1066.
48. C. Markopoulou and J.E. Koundourellis, M. Orkoula, C. Kontoyannis, "Quantitative non destructive methods for the determination of ticlopidine in tablets using reflectance NIR and FT-Raman spectroscopy", *Applied Spectroscopy*, 62 (2008) 251. <http://www.opticsinfobase.org/as/abstract.cfm?URI=as-62-2-251>
49. M. Orkoula, C. Kontoyannis, "Non-Destructive Quantitative Analysis of Risperidone in Film-Coated Tablets" *J. Pharm. Biomed. Anal.*, 47 (2008) 631.
50. I. Zacharaki, C. Kontoyannis, A. Lycourghiotis and C. Kordulis "The influence of calcination on the size of nanocrystals, porous structure and acid-base properties of mesoporous anatase used as catalytic support" *Colloids and Surfaces A: Physicochemical and Engineering*, 324 (2008) 208-216.
51. I. Zacharaki, C. Kontoyannis, S. Boghosian, A. Lycourghiotis and C. Kordulis Cobalt oxide supported on alumina catalysts prepared by various methods for use in catalytic afterburner of PEM fuel cell, *Catalysis Today*, 143 (2009) 38-44.
52. I. Karabas, M.G. Orkoula, C.G. Kontoyannis, "Effect of hydrazine based deproteination protocol on bone mineral crystal structure", *J. Mater. Sc.: Mater Med*, 23 (2012) 1139-1148 (DOI 10.1007/s10856-012-4593-7).
53. Malvina G. Orkoula, Martha Z. Vardaki and Christos G. Kontoyannis "Study of Bone Matrix Changes Induced by Osteoporosis in Rat Tibia Using Raman Spectroscopy", *Vibrational Spectroscopy*, 63 (2012) 404-408. <http://dx.doi.org/10.1016/j.vibspec.2012.09.016>
54. S. Panteliou, E. Panagiotopoulos, J. Varakis, M. Orkoula and C. Kontoyannis "Measurement of Modal Damping Factor to Monitor Bone Integrity and Osteopenia: A Study on Sheep Trochanters" *Bioengineering & Biomedical Science*, 2:3 (2012) 118 (1-6).
55. I. Karabas and Christos G. Kontoyannis "Characterization of calcium phosphates mixtures", *Vibrational Spectroscopy*, 64 (2013) 126-133 (<http://dx.doi.org/10.1016/j.vibspec.2012.11.003>).
56. I. Karabas, M.G. Orkoula, C.G. Kontoyannis, "Calibration models for the quantitative analysis of bone (collagen and bioapatite) using raman spectroscopy", *J. Biophotonics*, 6 (2013) 573-586 (doi 10.1002/jbio.201200053).
57. Argyrios N. Nochos, Christos Kontoyannis, George G. Voyiatzis, "Incorporation of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) in Poly(propylene) Matrices for Wound Healing Applications. The case of Ibuprofen" *Macromol. Symp.* 331-332 (2013) 115-122 (doi 10.1002/masy.201300093).
58. Mohamed Ahmed S. El Mubarak, Fotini N. Lamari, Christos Kontoyannis, Simultaneous determination of allantoin and glycolic acid in snail mucus and cosmetic creams with high performance liquid chromatography and ultraviolet detection" *Journal of Chromatography A*, 1322 (2013) 49-53 (<http://dx.doi.org/10.1016/j.chroma.2013.10.086>).
59. Malvina G. Orkoula and Christos G. Kontoyannis "Raman Spectroscopy for the Study of Biological Organisms (Biogenic Materials and Biological Tissues): A Valuable Analytical Tool", *Spectroscopy Europe*, 26 (2014) 18-21. (Invited-review article)
60. Harry Blair, Elena Kalyvioti, Nicholas Papachristou, Irina Tourkova, Spyros Syggelos, Despina Deligianni, Malvina Orkoula, Christos Kontoyannis, Eleni Karavia, Kyriakos Kypreos, and Dionysios Papachristou «Apolipoprotein A-1 (ApoA-1) Regulates Osteoblast and Lipoblast Precursor Cells in Mice», *Laboratory Investigation*, 96 (2016) 763-772 doi:10.1038/labinvest.2016.51 (2016) doi:10.1038/labinvest.2016.51.
61. Georgia Tooulakou, Andreas Giannopoulos, Dimosthenis Nikolopoulos, Panagiota Bresta, Elissavet Dotsika, Malvina G. Orkoula, Christos G. Kontoyannis, Costas Fasseas, Georgios Liakopoulos, Maria I. Klapa, and George Karabourniotis, "Alarm photosynthesis": calcium oxalate crystals as an internal CO2 source in plants", *Plant Physiology*, 171 (2016) 2577-2585 DOI:10.1104/pp.16.00111.
62. Georgia Tooulakou, Andreas Giannopoulos, Dimosthenis Nikolopoulos, Panagiota Bresta, Elissavet Dotsika, Malvina G. Orkoula, Christos G. Kontoyannis, Costas Fasseas, Georgios Liakopoulos, Maria I. Klapa, and George Karabourniotis, "Reevaluation of the plant "gemstones": Calcium oxalate crystals sustain photosynthesis under drought conditions", *Plant Signaling & Behavior*, 11 (2016), NO. 9, e1215793 (4 pages) DOI: 10.1080/15592324.2016.1215793.
63. Eleni Kamilari, Konstantinos Farsalinos, Konstantinos Poulas, Christos G. Kontoyannis, Malvina G. Orkoula, "Detection and quantitative determination of heavy metals in electronic cigarette refill liquids using Total Reflection X-ray Fluorescence Spectrometry", *Food and Chemical Toxicology*, 116, Part B, (2018) 233-237 <https://doi.org/10.1016/j.fct.2018.04.035>.

64. Georgia Tooulakou, Dimosthenis Nikolopoulos, Elissavet Dotsika, Malvina G. Orkoulou, Christos G. Kontoyannis, Georgios Liakopoulos, Maria I. Klapa, George Karabourniotis, "Changes in size and composition of pigweed (*Amaranthus hybridus* L.) calcium oxalate crystals under CO₂ starvation conditions", *Physiologia Plantarum* **166** (2019) 862–872 <https://doi.org/10.1111/ppl.12843>
65. Michail Lykouras, Stefani Fertaki, Malvina Orkoulou and Christos Kontoyannis, "Sample Preparation of Posaconazole Oral Suspensions for Identification of the Crystal Form of the Active Pharmaceutical Ingredient", *Molecules* **2020**; *25*(24):6032; doi:10.3390/molecules25246032
66. Ioanna Chrisikou, Malvina Orkoulou and Christos Kontoyannis, "FT-IR/ATR Solid Film Formation: Qualitative and Quantitative Analysis of a Piperacillin-Tazobactam Formulation" , *Molecules* **2020**; *25*(24):6051; doi:10.3390/molecules25246051
67. Ioanna Chrisikou, Malvina Orkoulou and Christos Kontoyannis, "Analysis of IV Drugs in the Hospital Workflow by Raman Spectroscopy: The Case of Piperacillin and Tazobactam", *Molecules* **2021**, *26*, 5879. <https://doi.org/10.3390/molecules26195879>
68. Evangelia Dimitrokalli, Stefani Fertaki, Michail Lykouras, Petros Kokkinos, Malvina Orkoulou, Christos Kontoyannis, "Warfarin Sodium Stability in Oral Formulations" *Molecules* **2021**, *26*, 6631. <https://doi.org/10.3390/molecules26216631>
69. Panagiota Papaspyridakou, Michail Lykouras, Christos Kontoyannis and Malvina Orkoulou, "Comparative Study of Sample Preparation Methods and Carriers for the Identification of Volatile Compounds in Biological Fluids using Raman Spectroscopy" *Molecules* **2022**, *27*, 3279. <https://doi.org/10.3390/molecules27103279>
70. Stefani Fertaki, Georgios Bagourakis, Malvina Orkoulou and Christos Kontoyannis, "Measuring Bismuth Oxide Particle Size and Morphology in Film-Coated Tablets" *Molecules* **2022**, *27*, 2602. <https://doi.org/10.3390/molecules27082602>
71. Michail Lykouras, Malvina Orkoulou, Christos Kontoyannis, "Formation and Characterisation of Posaconazole Hydrate Form" *Pharmaceuticals* **2023**, *16*, 65. <https://doi.org/10.3390/ph16010065>
72. Michail Lykouras, Christos Kontoyannis, Malvina Orkoulou, "Development and Validation of an Analytical Method for the Simultaneous Quantitation of Posaconazole Form I and Form-S in Oral Suspensions" *J. Pharmaceutical and Biomedical Analysis*, *254* (2025) 116569, <https://doi.org/10.1016/j.jpba.2024.116569>