

Sophia Hatziantoniou

Associate Professor of Pharmaceutical Technology

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EDUCATIONAL BACKGROUND

1993: Degree of School of Pharmacy, University of Athens, Greece

1995: License of Pharmaceutical Profession, Ministry of Health, Athens, Greece

1999: Ph.D. Diploma of the School of Pharmacy, University of Athens, Greece

POSTDOCTORAL EDUCATION AND RESEARCH

2000-2001: Lab of Pharmaceutical Technology, School of Pharmacy, National and Kapodistrian University of Athens.

SCIENTIFIC WORKSHOPS AND SEMINARS

1995: Postgraduate six month Seminar of Pharmaceutical Marketing, School of Pharmacy, Athens, Greece

1998: Course on «Safety assessment of cosmetic products», Hellenic Society of Cosmetology, Athens, Greece

2007: Course on Laboratory Animal Science 24/9 – 5/10/, coordinated by the BSRC Alexander Fleming and the Dept of Laboratory Animal Science, Utrech University.

2005: Summer School: Methods in micro – nanotechnology and nanobiotechnology, National Centre for Scientific Research «Democritos», Greece

2003: Advanced Customer Seminar on Thermal Analysis (Mettler Toledo), Zurich, Switzerland

2003: Microencapsulation: Formulation and Process Technologies Workshop in 30th Annual Meeting & Exposition of the Controlled Release Society, Glasgow, UK

2006: 18th mountain/Sea Liposome Workshop, Ameland, Holland

2011: Dendrimers as composites of Advanced Drug Delivery Nano Systems: Biomedical applications. COST Action TD0802, Athens, Greece

2013: 1st Summer Training School on Thermal Analysis and Calorimetry: From Theory to Practice, Athens, Greece

2014: Summer School: Thermal Analysis Techniques, Aristotle University of Thessaloniki, Greece, June 29 to July 12, 2014 (Erasmus IP)

2014: “Seminar on Bioequivalence of Drugs”, Bionian Cluster, Athens, 18-19/06/2014

2019: Start-Up Workshop, COST CA 16227 «INVESTIGATION AND MATHEMATICAL ANALYSIS OF AVANTGARDE DISEASE CONTROL VIA MOSQUITO NANO-TECH-REPELLENTS», Malta 10-10/12/19

RESEARCH EXPERIENCE AND ACTIVITIES

- Preparation and physicochemical characterization of nanoparticles (liposomes, solid lipid nanoparticles, nanoemulsions and dendrimers) as carriers of biologically active substances for pharmaceutical or cosmetic products.

- Thermal Analysis (Differential Scanning Calorimetry) and Raman spectroscopy studies on interactions of biologically active substances with model lipid membranes and liposomes.
- Development of several in vivo pharmacological models:
 - on SCID NOD mice: development of xenografts for several cancer cell lines and anti-tumor activity assessment of natural products and liposomal drugs
 - on SKH1 (hairless mice): anti-inflammatory activity assessment of natural products on UV induced skin barrier disruption models
 - on albino rabbits: (Safety assessment of pharmaceutical and cosmetic products - eye irritation and skin irritation tests)
- in vitro Safety assessment of pharmaceutical and cosmetic products (HET-CAM tests).

SCIENTIFIC INTERESTS

- Design and study of nanocarriers as transporters of biologically active molecules
- Incorporation of drug molecules in nanosystems (liposomes, nanoemulsions, solid state lipid nanoparticles (SLN), polymeric systems, dendrimers), to improve the pharmacokinetic properties, bioavailability and pharmacological response in target tissues (tumors, lung, skin).
- Formulation of novel carriers of bioactive molecules into final products and study their characteristics (size distribution, zeta-potential, particle surface morphology, content of actives and excipients, active bioavailability, stability).
- Study of the interaction of bioactive molecules with model lipid membranes mainly by Thermal Analysis in order to design new formulations, as well as to predict their interaction with biological membranes.
- Development of cosmetics and pharmaceutical product for topical application. Study of the physicochemical characteristics and stability. Safety assessment and evaluation of their efficacy using non-invasive biomechanical methods for claim substantiation.

TEACHING ACTIVITY

Undergraduate Program (2013-up to date):

- Introduction To Pharmaceutical Science: History of Pharmacy (1st Semester)
- Bioethics - Elements Of Drug Regulation: Regulatory Framework for cosmetics, Pharmaceutical Law (Pharmacy Operation) (4th Semester)
- Pharmaceutical Technology I: Pharmaceutical Compounding, Pharmaceutical Excipients, Packaging of Pharmaceutical products
Practical course in Pharmaceutical Technology I: Pharmaceutical Compounding (6th Semester)
- Pharmaceutical Technology II: Design, Preparation-Manufacturing and Quality Control of Drug Formulations, GMP/GLP.
Practical course in Pharmaceutical Technology (Preparation and Quality Control of Drug Formulations) (7th Semester)
- CHEMISTRY AND TECHNOLOGY OF COSMETICS (9th Semester)

Postgraduate Program of Department of Pharmacy:

Advanced Pharmaceutical Technology (Pharmaceutical Thermal analysis) (2013-2018)

Nanomedicines and Special Formulations for Administration and / or Targeting of Medicines / Diagnostics (Lipid nanoparticles) (2013-2018)

Discovery and Development of Medicines (New Postgraduate Program of Department of Pharmacy: (2018-up to date)

- Design and Discovery of Pharmaceutical Products
- Nanomedicines and Special Formulations for Administration and / or Targeting of Medicines / Diagnostics

Postgraduate Program of Department of Pharmacy: Cosmetology - Preparation and Evaluation of Cosmetic Products (2018-up to date)

- Legislation and Regulatory Framework on the Manufacture and Distribution of Cosmetic Products
- Ingredients of Cosmetic Products
- Development of Cosmetic Products
- Safety Assessment and Quality Control of Cosmetic Products
- Efficacy testing and Claim Support of Cosmetic Products
- Industrial Production of Cosmetic Products
- Practical Course on Preparation of Cosmetic Products

Interinstitutional MSc Program "Nanomedicines for Drug Delivery (NANOMED)," a joint postgraduate program under the Erasmus Mundus framework, offered by the Department of Pharmacy at the University of Patras, in collaboration with Paris Descartes University (France), Pavia University (Italy), and Angers University (France).

2017-2018 to 2023-2024: Application of Thermal Analysis in Pharmaceutics

NANOMED3, 2024-2025: Participation in the course Innovations in Pharmaceutical Technology with lectures entitled:

- Innovations and new developments in DSC and related methods for characterization of Pharmaceuticals,
- Innovations in Pharmaceutical Excipients

Participation in the course Basic Nanomedicines with lecture entitled:

- Characterization Techniques for Advanced Delivery Systems

Interdepartmental Postgraduate Program (IPP) titled "Personalized Medicine," jointly offered by the Departments of Medicine and Pharmacy at the School of Health Sciences, University of Patras.

- Participation in the course EI 105 Advanced Therapeutic Systems with a lecture entitled "Characterization Techniques of Advanced Delivery Systems"

Interdepartmental Postgraduate Program (IPP) titled "Nanomedicine," jointly offered by the Departments of Medicine and Pharmacy at the School of Health Sciences, National and Kapodistrian University of Athens (NKUA).

Participation in the course Introduction to Nanotechnology with lectures entitled:

- Vaccines' technology
- Technology of mRNA-based vaccines

PRIZES-HONOURS

- 1995-1999: Scholarship from Greek State Scholarships' Foundation (IKY) for doctorate studies.

- Evaluator for the Pedagogical Institute of the Greek Ministry of Education, as a reviewer of the book "Teaching Pharmacy Technology - Cosmetology to Pharmacy Assistants", in the framework of the project entitled "Curriculum Development - Production of Books and Aids for Technical - Vocational Schools".
- Evaluator for the RANNIS Foundation for Icelandic Research Fund for Graduate Students 2012 (after invitation),
- Evaluator of the Research Proposal: "Integrated Service of Greek Academic Electronic Books Battery" in the context of Call 3 - "Medical Sciences and Life Sciences" (2014)
- Evaluator in Partnership Agreement for the Development Framework (ΕΣΠΑ) Project of "Cooperation 2011" Action
- Member of Section IA 'of the Scientific Council for Approval (ΕΣΕ) of the National Organization for Medicines (ΕΟΦ) (2013-up to date).
- Coordinator of the Postgraduate Program *Cosmetology - Preparation And Evaluation Of Cosmetic Products* for the Dept. of Pharmacy, Univ. of Patras (2018-up to date).
- Reviewer for over 20 Pharmaceutical and related Scientific journals
- Editor for the official Journal of the Hellenic Society of Cosmetology "To Kallyntiko" (Cosmetic) (2019-)
- Editorial Board of the official Journal of the Hellenic Pharmaceutical Society "Archives of Pharmaceutics" (2010-)
- Editorial Board of "Pharmaceutics" MDPI (2020)
- Regional committee member of more than 20 Conferences and Scientific Meetings
- Young researcher Award for best poster presentation for I. Vrouvaki, E. Koutra, M. Kornaros, K. Avgoustakis, F. N. Lamari, and S. Hatziantoniou, Preparation and characterization of Pistacia lentiscus var. Chia essential oil- loaded poly(lactic acid) nanoparticles as novel wound healing agent, NanoBio 2018, The 1st International conference of Nanotechnologies and Bionanoscience, 23-28 September 2018, Heraklion, Crete, Greece.
- Member of the "Scoring Committee" of the Office of Continuing Education of Pharmacists, which operates under the Institute of Lifelong Learning & Professional Development of Pharmacists (IDEEAF) (2016 to date).
- Member of the Coumpounding Committee, which operates within the Institute of Lifelong Learning & Professional Development of Pharmacists (IDEAF) (2016 to date)
- (Member of the management Committee of COST Action CA 16227 «INVESTIGATION AND MATHEMATICAL ANALYSIS OF AVANTGARDE DISEASE CONTROL VIA MOSQUITO NANO-TECH-REPELLENTS» (2018)
- Scientific Responsibility of the Training Program for Pharmacists titled: "Exemplary Preparation of Extemporaneous Preparations - Quality Assurance in the Pharmacy Laboratory in Accordance with the European Pharmacopoeia", co-organized by the Panhellenic Pharmaceutical Association (ΠΦΣ) and the Institute for Lifelong Learning and Professional Development of Pharmacists (ΙΔΕΕΑΦ) in collaboration with local Pharmaceutical Associations

PROFESSIONAL AFFILIATIONS

- Hellenic Society of Cosmetology: President (since 2019) and Founding Member (1995)
- Hellenic Pharmaceutical Society (B' v. President of Board of Directors)
- Hellenic Society for Thermal Analysis (ESTA): Secretary General (2011-2017)
- Panhellenic Association of Pharmacists (PEF)
- Hellenic Society of Pharmaceutical Technology
- International Federation of Cosmetic Chemists (IFSCC)
- Controlled Release Society (CRS) local Chapter
- International Liposome Society (ILS)

Websites

ORCID ID <https://orcid.org/0000-0002-5877-9091>

SCOPUS Author ID <https://www.scopus.com/authid/detail.uri?authorId=6603067059>

Google Scholar: <https://scholar.google.com/citations?hl=el&user=YKJnSM0AAAAJ>

PUBLICATIONS / METRICS

- Number of papers in refereed journals: **98**
- Number of chapters in books: **7**
- Number of communications in international scientific meetings: over **74**
- Number of Invited Lectures in National and International scientific or educational meetings: **54**
- h-index: **30**, citations: **2788** (Scopus, Feb. 2025)

Recent Publications (2022-2025)

1. Górski K, Kowalczyk T, Gładys A, Glica M, Muskała M, Picot L, Mori M, **Hatziantoniou S**, Sitarek P. Industrial applications of Cannabis sativa (L.): Exploring its biological and nanotechnological potential. *Ind Crops Prod.* 2025;225:120566. <https://doi.org/10.1016/j.indcrop.2025.120566>.
2. Liakopoulou A, Letsiou S, Avgoustakis K, Patrinos GP, Lamari FN, **Hatziantoniou S**. Curcumin-Loaded Lipid Nanocarriers: A Targeted Approach for Combating Oxidative Stress in Skin Applications. *Pharmaceutics.* 2025;17(2):144. <https://doi.org/10.3390/pharmaceutics17020144>.
3. Zissi L, Dimaki VD, Birba VS, Galani VC, Magafa V, **Hatziantoniou S**, Lamari FN. Natural Deep Eutectic Solvents as Green Alternatives for Extracting Bioactive Compounds from Sideritis Taxa with Potential Cosmetic Applications. *Antioxidants.* 2025;14(1):68. <https://doi.org/10.3390/antiox14010068>.
4. Kechagia A, Dimaki VD, Mourelatou E, Avgoustakis K, Lamari FN, **Hatziantoniou S**. Enhanced Stability and Prolonged Insect-Repellent Action of Essential Oil-Loaded Nanostructured Lipid Carriers. *Applied Sciences.* 2024;14(23):11309. <https://doi.org/10.3390/app142311309>.
5. Chatzopoulou N, Chaikali C, Mourkogianni E, Mikelis CM, Andriopoulos V, Kornaros M, Avgoustakis K, Lamari FN, **Hatziantoniou S**. Encapsulation of Microalgae *Tisochrysis lutea* Extract in Nanostructured Lipid Carriers (NLCs) and Evaluation of Their Sunscreen, Wound Healing, and Skin Hydration Properties. *Marine Drugs.* 2024;22(11):487. <https://doi.org/10.3390/md22110487>.
6. Andreou E, **Hatziantoniou S**, Rallis E, Kefala V. Why Permanent Makeup (PMU) Is Not a Lifetime Application. *Cosmetics.* 2024; 11(5):160. <https://doi.org/10.3390/cosmetics11050160>.
7. Antoniou V, Mourelatou EA, Galatou E, Avgoustakis K, **Hatziantoniou S**. Gene Therapy with Chitosan Nanoparticles: Modern Formulation Strategies for Enhancing Cancer Cell Transfection. *Pharmaceutics.* 2024;16:868. <https://doi.org/10.3390/pharmaceutics16070868>.
8. Flekka K, Dimaki VD, Mourelatou E, Avgoustakis K, Lamari FN, **Hatziantoniou S**. Stability and Retention of Nanoemulsion Formulations Incorporating Lavender Essential Oil. *Cosmetics.* 2024;11:65. <https://doi.org/10.3390/cosmetics11030065>.
9. Katsogiannis I, Naziris N, Sarika A, Gardikis K, **Hatziantoniou S**, Boukos N, Dallas P, Fikioris N, Demetzos C. Development and in vitro evaluation of liposomal carnosine

- for dermatological and cosmeceutical applications. *J Drug Deliv Sci Technol*. 2024;96:105654. <https://doi.org/10.1016/j.jddst.2024.105654>.
10. Andreou E, Rallis E, **Hatziantoniou S**, Kefala V. Permanent Makeup (PMU) Removal with Plant Origin Extracts. *Cosmetics*. 2024;11(2):56. <https://doi.org/10.3390/cosmetics11020056>.
 11. Nifli A, Liakopoulou A, Mourelatou E, Avgoustakis K, **Hatziantoniou S**. Liposomal propranolol for treatment of infantile hemangioma at compounding pharmacies. *J Liposome Res*. 2024 Feb 9:1-12. <https://doi.org/10.1080/08982104.2024.2313452>.
 12. Papaioannou A, Liakopoulou A, Papoulis D, Gianni E, Gkolfi P, Zygouri E, Letsiou S, **Hatziantoniou S**. Effect of Peptides on the Synthesis, Properties and Wound Healing Capacity of Silver Nanoparticles. *Pharmaceutics*. 2023;15(10):2471. <https://doi.org/10.3390/pharmaceutics15102471>.
 13. Lampropoulou P, Petrounias P, Rogkala A, Giannakopoulou PP, Gianni E, Mantzoukas S, Lagogiannis I, Koukouzas N, **Hatziantoniou S**, Papoulis D. Microstructural and Microbiological Properties of Peloids and Clay Materials from Lixouri (Kefalonia Island, Greece) Used in Pelotherapy. *Applied Sciences*. 2023;13(9):5772. <https://doi.org/10.3390/app13095772>.
 14. Kowalczyk T, Sitarek P, Śliwiński T, **Hatziantoniou S**, Soulintzi N, Pawliczak R, Wieczfinska J. New Data on Anti-Inflammatory and Wound Healing Potential of Transgenic *Senna obtusifolia* Hairy Roots: In Vitro Studies. *Int J Mol Sci*. 2023;24(6):5906. <https://doi.org/10.3390/ijms24065906>.
 15. Sitarek P, Kowalczyk T, Śliwiński T, **Hatziantoniou S**, Soulintzi N, Pawliczak R, Wieczfinska J. *Leonotis nepetifolia* Transformed Root Extract Reduces Pro-Inflammatory Cytokines and Promotes Tissue Repair In Vitro. *Int J Environ Res Public Health*. 2023;20(6):4706. <https://doi.org/10.3390/ijerph20064706>.
 16. Maltezou HC, **Hatziantoniou S**, Theodoridou K, Vasileiou K, Anastassopoulou C, Tsakris A. Anaphylaxis rates following mRNA COVID-19 vaccination in children and adolescents: Analysis of data reported to EudraVigilance. *Vaccine*. 2023;41(14):2382-2386. <https://doi.org/10.1016/j.vaccine.2023.02.067>.
 17. Boufidou F, **Hatziantoniou S**, Theodoridou K, Maltezou HC, Vasileiou K, Anastassopoulou C, Medić S, Tsakris A. Anaphylactic Reactions to COVID-19 Vaccines: An Updated Assessment Based on Pharmacovigilance Data. *Vaccines (Basel)*. 2023;11(3):613. <https://doi.org/10.3390/vaccines11030613>.
 18. Andriopoulos V, Lamari FN, **Hatziantoniou S**, Kornaros M. Production of Antioxidants and High Value Biomass from *Nannochloropsis oculata*: Effects of pH, Temperature and Light Period in Batch Photobioreactors. *Mar Drugs*. 2022;20(9):552. <https://doi.org/10.3390/md20090552>.
 19. Spanidi E, Athanasopoulou S, Liakopoulou A, Chaidou A, **Hatziantoniou S**, Gardikis K. Royal Jelly Components Encapsulation in a Controlled Release System-Skin Functionality, and Biochemical Activity for Skin Applications. *Pharmaceutics (Basel)*. 2022;15(8):907. <https://doi.org/10.3390/ph15080907>.
 20. Liakopoulou A, Mountsaki S, Andriopoulos V, Gkioni M, Kornaros M, Lamari FN, **Hatziantoniou S**. Study of the cosmetic properties of microalgae extracts – The case of *Nannochloropsis oculata*. *Rev Clin Pharmacol Pharmacokinet*. 2022;36(2-3):31-36. <https://doi.org/10.5281/zenodo.10211529>.
 21. **Hatziantoniou S**, Anastassopoulou C, Lazaros G, Vasileiou K, Tsioufis C, Tsakris A. Comparative assessment of myocarditis and pericarditis reporting rates related to mRNA COVID-19 vaccines in Europe and the United States. *Expert Rev Vaccines*. 2022;21(11):1691-1696. <https://doi.org/10.1080/14760584.2022.2100765>.
 22. Andriopoulos V, Gkioni MD, Koutra E, Mastropetros SG, Lamari FN, **Hatziantoniou S**, Kornaros M. Total Phenolic Content, Biomass Composition, and Antioxidant Activity

- of Selected Marine Microalgal Species with Potential as Aquaculture Feed. *Antioxidants*. 2022;11:1320. <https://doi.org/10.3390/antiox11071320>.
23. Gkioni MD, Andriopoulos V, Koutra E, **Hatziantoniou S**, Kornaros M, Lamari FN. Ultrasound-Assisted Extraction of *Nannochloropsis oculata* with Ethanol and Betaine: 1,2-Propanediol Eutectic Solvent for Antioxidant Pigment-Rich Extracts Retaining Nutritious Residual Biomass. *Antioxidants*. 2022;11(6):1103. <https://doi.org/10.3390/antiox11061103>.
 24. Galatou E, Mourelatou E, **Hatziantoniou S**, Vizirianakis IS. Nonalcoholic Steatohepatitis (NASH) and Atherosclerosis: Explaining Their Pathophysiology, Association and the Role of Incretin-Based Drugs. *Antioxidants*. 2022;11(6):1060. <https://doi.org/10.3390/antiox11061060>.
 25. Andreou E, Triantafyllou AK, Mountsaki S, Rallis E, Lamari FN, **Hatziantoniou S**, Kefala V. Permanent Make-Up (PMU) Inks Decolorization Using Plant Origin Materials. *Cosmetics*. 2022;9(3):48. <https://doi.org/10.3390/cosmetics9030048>.
 26. **Hatziantoniou S**, Anastassopoulou C, Lampropoulou V, Maltezou HC, Andreacos E, Poland GA, Tsakris A. Comparative assessment of allergic reactions to COVID-19 vaccines in Europe and the United States. *Allergy*. 2022;77(5):1630-1633. <https://doi.org/10.1111/all.15257>.
 27. Anastassopoulou C, **Hatziantoniou S**, Vlachopoulos C, Spanakis N, Tsioufis C, Tsakris A, Lazaros G. Temporal relationship of myocarditis and pericarditis following COVID-19 vaccination: A pragmatic approach. *Int J Cardiol*. 2022 Apr 15:S0167-5273(22)00504-6. <https://doi.org/10.1016/j.ijcard.2022.04.024>.
 28. Kowalczyk T, Merecz-Sadowska A, Rijo P, Mori M, **Hatziantoniou S**, Górski K, Szemraj J, Piekarski J, Śliwiński T, Bijak M, Sitarek P. Hidden in Plants—A Review of the Anticancer Potential of the *Solanaceae* Family in In Vitro and In Vivo Studies. *Cancers (Basel)*. 2022;14(6):1455. <https://doi.org/10.3390/cancers14061455>.
 29. Anastassopoulou C, **Hatziantoniou S**, Boufidou F, Patrinos GP, Tsakris A. The Role of Oral Antivirals for COVID-19 Treatment in Shaping the Pandemic Landscape. *J Pers Med*. 2022;12(3):439. <https://doi.org/10.3390/jpm12030439>.
 30. Maltezou HC, Anastassopoulou C, **Hatziantoniou S**, Poland GA, Tsakris A. Anaphylaxis rates associated with COVID-19 vaccines are comparable to those of other vaccines. *Vaccine*. 2021;S0264-410X(21)01539-5. <https://doi.org/10.1016/j.vaccine.2021.11.066>.

Office Hours for students

Tuesday & Thursday 12:00-13:00