

CURRICULUM VITAE

FOTIOS MPEKRIS

PERSONAL AND CONTACT INFORMATION

Date and place of birth: August 27, 1988; Nicosia, Cyprus

Address: Kastalias 7, Lakatamia, 2326, Nicosia Cyprus

Nationality: Cypriot

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EDUCATION

- Sept.2012 *PhD*
— Cancer Biophysics Laboratory, Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus.
- Nov. 2016
- Sept.2008 *BSc in Physics*
— Department of Physics,
June 2012 University of Cyprus (GPA: 8.64/10)

PROFESSIONAL APPOINTMENTS

- 2025 – present Head of Cancer Genetics, Therapeutics & Ultrastructural Pathology Department, The Cyprus Institute of Neurology and Genetics
- 2023 – 2025 Research Assistant Professor, Head of Tumor Mechanopathophysiology Lab, Department of Mechanical and Manufacturing Engineering, University of Cyprus
- 2016 – 2023 Postdoctoral fellow, Cancer Biophysics Laboratory, Department of Mechanical and Manufacturing Engineering, University of Cyprus
- 2019 – 2023 Part time Lecturer, School of Sciences and Engineering, Department of Engineering, University of Nicosia
- 2017 – 2018 Research Assistant, Molecular and Cellular Biology Laboratory, Department of Life Sciences, European University of Cyprus
- 2012 – 2016 Research Scientist, Cancer Biophysics Laboratory, Department of Mechanical and Manufacturing Engineering, University of Cyprus
- 2012 – 2014 *Private Tutoring*
AMP Institute, Nicosia, Cyprus

TEACHING EXPERIENCE

- 2024
spring sem. *Part time Lecturer*
Technical Writing and Speaking
Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus.
- 2019-2023
spring sem. *Part time Lecturer*
Introduction to Electromagnetics
Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus.
- 2021, 2023
spring sem. *Part time Lecturer*
General Physics III
School of Sciences and Engineering, Department of Engineering, University of Nicosia
- 2022
winter sem. *Part time Lecturer*
Thermodynamics
Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus.
- 2019-2023
winter and
spring sem. *Part time Lecturer*
Physics I
School of Sciences and Engineering, Department of Engineering, University of Nicosia
- 2021
winter sem *Part time Lecturer*
Physics for the Medical School
Department of Physics, University of Cyprus, Nicosia, Cyprus.
- 2020, 2024
winter sem. *Part time Lecturer*
Technical Writing and Speaking
Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus.
- 2019
summer
sem. *Part time Lab Instructor*
Physics I and Physics II
University of Nicosia Global Semesters, University of Nicosia, Nicosia, Cyprus.
- 2018
winter sem. *Visiting Lecturer*
1) *Thermodynamics I*
2) *Thermodynamics II*
3) *Advanced Engineering Thermodynamics*
Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus.
- 2017
winter sem. *Part time Lecturer*
Computational Engineering II
Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus.
- 2013
spring
sem. *Teaching Assistant*
Introduction to Electromagnetics
Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus.
- 2012
winter
sem. *Teaching Assistant*
Thermodynamics I
Department of Mechanical and Manufacturing Engineering, University of Cyprus, Nicosia, Cyprus.

FUNDING

- European Research Council (ERC) Starting Grant (ERC-2022-StG MMSCancer), Title: "*Mechano-modulation of tumor microenvironment with mechanotherapeutics and sonopermeation to optimize nano-immunotherapy*". €1,500,000. November 2023-October 2028.
- Research and Innovation Foundation, EXCELLENCE/0524/0359/BETNanoImmuno, Title: "*Enhancing Photodynamic Therapy Efficacy in Cancer Through Tumor Microenvironment Normalization*", €250.000, May 2025-April 2027 (Partner).
- Research and Innovation Foundation, EXCELLENCE/0524/0227/PDTenhance, Title: "*Evaluating the role of BET inhibitor-loaded nanoformulations to improve the efficacy of immunotherapy in humanized patient-derived xenograft models of pancreatic cancer*", €250.000, May 2025-April 2027 (Partner).
- Research and Innovation Foundation, NURTURING AN RTDI CULTURE, CULTURE / AWARD-YR / 0523 B/0006, Title: "*Multiplex immunoassay of the combined treatment with mechanotherapeutics, sonopermeation and nano-immunotherapy in cancer*", €60.000, May 2024-April 2025
- Research Promotion Foundation of Cyprus, CODEVELOP-AG-SH-HE/0823, Title: "Ultrasound Shear Wave Elastography Driven Prognostic Tool for Precision Oncology." (PROGNOSTIC), €600.000, June 2024 - May 2026. (Partner).
- Research and Innovation Foundation, HORIZON EUROPE – 2nd OPPORTUNITY, OPPTY-ERC/1122/0001, Title: "*Combining Normalization and Sonopermeation strategies to re-engineer tumor mechanics in Pancreatic Cancer*", €100.000, May 2023-April 2024
- Research Promotion Foundation, DIDAKTOR (POST DOCTORAL RESEARCHERS, Title: "*Optimizing immunotherapy in triple-negative breast cancer by normalizing the tumor microenvironment*", €160.000, December 2019-November 2021
- University of Cyprus, POST-DOCTORAL RESEARCHER, "*Combined use of immunotherapy and anti-angiogenic agents to improve cancer therapy*", €25.000, January 2019-November 2019.
- University of Cyprus, "*Newcomer graduate student fellowship*" to support graduate studies of a PhD candidate with the highest BSc GPA. September 2012 - June 2013; €8,000.

AWARDS

- "Young Researcher Award", Research and Innovation Foundation of Cyprus, 2023
- "Youth Award in Sciences", Youth Board of Cyprus, 2024

PATENTS

- Cancer treatment using ketotifen in combination with a checkpoint inhibitor – 63/287,872.

- Cancer treatment using bosentan in combination with a checkpoint inhibitor – PCT/US2021/062663.
- Polymeric Micelle Medicines for Nano-immunotherapy – JP2022-139984.

PROFESSIONAL AND RESEARCH ACTIVITIES

1. Animal procedures (license CY/EXP/P.L10/2014) by Cyprus veterinary services.
 - Animal handling and anesthetization
 - Drug preparation and administration (intraperitoneal, intravascular, retro orbital)
 - Other experimental procedures
 - measurements of tumor fluid pressure
 - measurements of solid stress
 - intracardiac administration of fluorescence molecules for imaging
 - immunofluorescence staining
2. COMSOL Multiphysics (COMSOL, Inc., Burlington, MA)
 - Design and simulation tumor growth (description in publications)
 - Design and simulation experiment for mechanical characteristics of materials (Tension, confined, unconfined and Stress Relaxation compression, Fluid Dynamics)
3. Expert user of a high precision mechanical testing (Instron 5944, Norwood, MA, USA).
 - Design experimental set-up and test protocol (Tension, Compression and Stress Relaxation)
4. MATLAB
 - Numerical Methods
 - Statistical analysis experimental data
5. Microsoft Office™ tools
6. Force
 - Numerical Methods
 - Finite element methods
 - Finite volume methods
 - Computational Fluid Mechanics
7. Degrees in Languages:
 - English (IGCSE);
 - Italian (Medium Level);
 - French (Medium Level).

PUBLICATIONS IN PEER-REVIEWED JOURNALS (H-INDEX:22, CITATIONS:2800)

- J1. Neophytou C., Charalambous A., Voutouri C., Angeli S., Panagi M., Stylianopoulos T., **Mpekris F.**, Sonopermeation combined with stroma normalization enables complete cure using nano-immunotherapy in murine breast tumors, *Journal of Controlled Release* (In Press).
- J2. Angeli S., Neophytou C., Kalli M., Stylianopoulos T., **Mpekris F.**, (2025) The mechanopathology of the tumor microenvironment: detection techniques, molecular mechanisms and therapeutic opportunities, *Frontiers in Cell and Developmental Biology*, 13 [DOI:10.3389/fcell.2025.1564626].
- J3. Martin J.D., Toh. K, Martin M.R, Chen P., Igarashi K., **Mpekris F.**, Stylianopoulos T., Stuber M.D., Karaoka K., Cabral H. (2025) Bone marrow vessels are hyperpermeable to macromolecules and nanoscale medicine in a size-dependent manner, *Journal of Controlled Release* [DOI: 10.1016/j.jconrel.2025.113669].

- J4. **Mpekris F.** *, Panagi M., Charalambous A., Voutouri C., Stylianopoulos T. *, (2024). Modulating cancer mechanopathology to restore vascular function and enhance immunotherapy, *Cell Reports Medicine*, 101626 [DOI:10.1016/j.xcrm.2024.101626]. * Corresponding authors.
- J5. **Mpekris F.** *, Panagi M., Charalambous A., Voutouri C., Michael C., Papoui A., Stylianopoulos T. *, (2024). A synergistic approach for modulating the tumor microenvironment to enhance nano-immunotherapy in sarcomas, *Neoplasia*, 51: 100990 [DOI:10.1016/j.neo.2024.100990]. * Corresponding authors.
- J6. Panagi M., **Mpekris F.**, Voutouri C., Hadjigeorgiou A., Michael C., Stylianos A., Constantinidou A., Martin J.D., Cabral H., Stylianopoulos T., (2024). Reprogramming tumor resident mast cells restores T cell infiltration and sensitizes sarcomas to PD-L1 inhibition, *Clinical Cancer Research*, 30 (11): 2582–2597. [DOI: 10.1158/1078-0432.CCR-24-0246].
- J7. Charalambous A., **Mpekris F.**, Panagi M., Voutouri C., Michael C., Gabizon A.A., Stylianopoulos T., (2024). Tumor microenvironment reprogramming improves nanomedicine-based chemo-immunotherapy in sarcomas, *Molecular Cancer Therapeutics*, 23 (11): 1555–1567. [DOI: 10.1158/1535-7163.MCT-23-0772].
- J8. Kalli M., **Mpekris F.**, Charalambous A., Michael C., Stylianos C., Voutouri C., Hadjigeorgiou A.G., Papoui A., Martin J.D., Stylianopoulos T., (2024). Mechanical forces inducing oxaliplatin resistance in pancreatic cancer can be targeted by autophagy inhibition, *Communications Biology*, 7: 1581. [DOI: 10.1038/s42003-024-07268-1].
- J9. Martin J.D. *, **Mpekris F.** *, Chauhan V.P., Martin M.R., M.E. Walsh M.E., Stuber M.D., McDonald D.M., F. Yuan F., Stylianopoulos T., R.K. Jain R.K., (2024) Fixation alters the physical properties of tumor tissue that regulate nanomedicine transport, *Drug Delivery*, 31(1). [DOI: 10.1080/10717544.2024.2430528] * Equal contribution.
- J10. Koutsi M, Stylianopoulos T., **Mpekris F.**, Optimizing therapeutic outcomes with Mechanotherapy and Ultrasound Sonopermeation in solid tumors (Under Review).
- J11. Koutsi M, Stylianopoulos T., **Mpekris F.**, Synergistic Mechanotherapy and Sonopermeation Guided by Mathematical Modeling for Solid Tumor Treatment (Under Review).
- J12. Neophytou C., Stylianopoulos T., **Mpekris F.**, The synergistic potential of mechanotherapy and sonopermeation to enhance cancer treatment effectiveness (Under Review).
- J13. Stylianos A., Polemidiotou K., Alimisis V., **Mpekris F.**, Voutouri C., Mari M., Filippidis G., Zachariades A., Kontomaris S.V., Sotiriadis P.P., Gkretsi V., Stylianopoulos T., Atomic force microscope-based nanomechanical signatures of pulmonary fibrosis (Under Review).
- J14. Panagi M., **Mpekris F.**, M.B., Voutouri C., Michael C., Pearce O.M.T, Sampaio P.C., Soulier A., Stylianopoulos T., Synthetic inducible bacteria normalize the microenvironment of refractory tumors, potentiating checkpoint inhibitor responses (Under Review).
- J15. Martin J.D., Nagaoka K., Panagi M.; Hosoi A., **Mpekris F.**, Chen P, Khan T., Martin M., Sun C., Voutouri C., Louca M., Papageorgis P., Sumiyoshi A., Nitta N., Takeda K., Aoki I., Kataoka K., Stylianopoulos T., Kakimi K., Cabral H., Antiemesis Corticosteroids Potentiate Checkpoint Blockade Efficacy by Normalizing the Immune Microenvironment in Metastatic Murine Breast Cancer (Under Review).
- J16. **Mpekris F.**, Papaphilippou P.C., Panagi M., Voutouri C., Michael C., Charalambous A., Dinev M.M., Katsioulou A., Prokopi-Demetriades M., Anayiotos A., Cabral H., Krasia-Christoforou T., Stylianopoulos T., (2023). Pirfenidone-loaded polymeric micelles as an effective mechanotherapeutic to potentiate immunotherapy in mouse breast cancer models, *ACS Nano* 17, 24: 24654–24667. [DOI:10.1021/acsnano.3c03305].
- J17. **Mpekris F.***, Panagi M.*, Michael C., Voutouri C., Tsuchiya M., Wagatsuma C., Kinoh H., Osada A., Akinaga S., Yoshida S., Martin J.D., Stylianopoulos T. (2023). Translational nanomedicine potentiates immunotherapy

- in sarcoma by normalizing the microenvironment, *Journal of Controlled Release* 353: 956-964 [DOI: [10.1016/j.jconrel.2022.12.016](https://doi.org/10.1016/j.jconrel.2022.12.016)]. * Equal contribution.
- J18. Stylianos A., Voutouri C., **Mpekris F.**, Stylianopoulos T., (2023), Pancreatic cancer presents distinct nanomechanical properties during progression, *Ann. Biomed. Eng.* 51(7): 1602-1615 [DOI: [10.1007/s10439-023-03168-3](https://doi.org/10.1007/s10439-023-03168-3)].
- J19. Theodorou I., **Mpekris F.**, Papagiorgis P., Panagi M., Kalli M., Potamiti L., Kyriacou K., Itskos G., Stylianopoulos T., (2023). Gold Nanobipyramids for Near Infrared Fluorescence-Enhanced Imaging and Treatment of Triple Negative Breast Cancer. *Cancers* 15, 3693 [DOI: [10.3390/cancers15143693](https://doi.org/10.3390/cancers15143693)].
- J20. Voutouri C., **Mpekris F.**, Panagi M., Michael C., Martin J.D., Averkiou M., Stylianopoulos T., (2023). Ultrasound stiffness and perfusion markers correlate with tumor volume responses to immunotherapy, *Acta Biomaterialia* 1,167:121-134. [DOI: [10.1016/j.actbio.2023.06.007](https://doi.org/10.1016/j.actbio.2023.06.007)].
- J21. Panagi M.*, **Mpekris F.***, Chen P.*, Voutouri C., Nakagawa Y., Martin J.D., Hiroi T., Hashimoto H., Philippos D., Pierides C., Samuel R., Fukushima S., Georgiou P., Papageorgis P., Papaphillipou P.C., Michael C., Koumas L., Costeas P., Ishii G., Kojima M., Kataoka K., Cabral H., Stylianopoulos T. (2022). Polymeric micelles increase tumor microenvironment reprogramming efficiency to potentiate nano-immunotherapy. *Nature Communications* 13:7165 [DOI: [10.1038/s41467-022-34744-1](https://doi.org/10.1038/s41467-022-34744-1)]. * Equal contribution.
- J22. **Mpekris F.**, Voutouri C., Panagi M., Baish J.W, Stylianopoulos T., Jain R.K., (2022). Normalizing the tumor microenvironment with nanomedicine and metronomic therapy: Implications for immunotherapy. *Journal of Controlled Release* 345: 190-199 [DOI:[10.1016/j.jconrel.2022.03.008](https://doi.org/10.1016/j.jconrel.2022.03.008)]
- J23. Stylianos A., **Mpekris F.**, Voutouri C., Papoui A., Constantinidou A., Kitis E., Kailides M., Stylianopoulos T. (2022). Nanomechanical properties of solid tumors as treatment monitoring biomarkers. *Acta Biomaterialia* 16:21. [DOI:[10.1016/j.actbio.2022.10.021](https://doi.org/10.1016/j.actbio.2022.10.021)].
- J24. Papaphillipou P.Ch., O.A Marinica, E. Tanasa, **F. Mpekris**, T. Stylianopoulos, V. Socoliuc, T. Krasia-Christoforou (2022). Ofloxacin Removal from Aqueous Media by Means of Magnetoactive Electrospun Fibrous Adsorbents. *Nanomaterials* 12(20), 3648 [DOI:[10.3390/nano12203648](https://doi.org/10.3390/nano12203648)].
- J25. **Mpekris F.**, Panagi M., Voutouri C., Martin J.D., Samuel R., Takahashi S., Gotohda N., Suzuki T., Papageorgis P., Demetriou P., Pierides C., Koumas L., Costeas P., Kojima M., Ishii G., Constantinidou A., Kataoka K., Cabral H., Stylianopoulos T. (2021). Normalizing the microenvironment overcomes vessel compression and resistance to nano-immunotherapy in breast cancer lung metastasis. *Advanced Science* 8(3): e2001917 [DOI:[10.1002/adv.202001917](https://doi.org/10.1002/adv.202001917)]
- J26. Voutouri C., Panagi M., **Mpekris F.**, Stylianos A., Averkiou M., Martin J.D., Stylianopoulos T. (2021). Endothelin inhibition potentiates cancer immunotherapy revealing mechanical biomarkers predictive of response. *Advanced Therapeutics*, 2000289, [DOI:[10.1002/adtp.202000289](https://doi.org/10.1002/adtp.202000289)].
- J27. Igarashi K., Cabral H., Hong T., Anraku Y., **Mpekris F.**, Stylianopoulos T., Khan T., Matsumoto A., Kataoka K, Matsumoto Y., Yamasoba T., (2021) Vascular Bursts Act as a Versatile Tumor Vessel Permeation Route for Blood-Borne Particles and Cells, *Small* 17(42): 2103751 [DOI:[10.1002/sml.202103751](https://doi.org/10.1002/sml.202103751)].
- J28. **Mpekris F.**, Voutouri C., Baish J.W, Duda D.G., Munn L.L., Stylianopoulos T., Jain R.K. (2020). Combining microenvironment normalization strategies to improve cancer immunotherapy. *PNAS* 117(7):3728-3737 [DOI:[10.1073/pnas.1919764117](https://doi.org/10.1073/pnas.1919764117)]
- J29. Panagi M., Voutouri C., **Mpekris F.**, Papageorgis P., Martin M.R., Martin J.D, Dmetriou P., Pierides C., Polydorou C., Stylianos A., Louca M., Koumas L., Costeas P., Kataoka K., Cabral H., Stylianopoulos T. (2020). TGF- β inhibition combined with nanomedicine normalizes the metastasis microenvironment towards anti-tumor immunity. *Theranostics* 10(4):1910-1922 [DOI:[10.7150/thno.36936](https://doi.org/10.7150/thno.36936)]
- J30. Martin J.D., Panagi M., Khan T.T., Wang C., Martin M.R., Voutouri C., Toh K., Papageorgis P., **Mpekris F.**, Suzuki T., Wilhelm M., Melo V.A., Polydorou C., Quader S., Norimatsu J., Lanning R.M., Kojima M., Stuber

- M.D., Stylianopoulos T., Cabral H., Kataoka K. (2019). Dexamethasone increases nanocarrier delivery by normalizing the tumor microenvironment. *ACS Nano* 13(6):6396-6408 [DOI:10.1021/acsnano.8b07865]
- J31. Zhao Y., Cao J., Jones D., Zhang Y., Nia H.T., Stylianopoulos T., **Mpekris F.**, Datta M., Sun Y., Wu L., Gao X., Jain R.K., Xu L. (2019). Losartan treatment augments chemotherapy efficacy and reduces ascites by normalizing the tumor stroma in ovarian cancer models. *PNAS* 116(6):2210-2219 [DOI:10.1073/pnas.1818357116]
- J32. Voutouri C., Kirkpatrick N.D., Chung E., **Mpekris F.**, Baish J.W., Munn L.L., Fukumura D., Stylianopoulos T., Jain R.K. (2019). Dynamics of vessel cooption in brain tumors revealed by integrative experimental and mathematical modeling studies. *PNAS* 116(7):2662-2671 [DOI:10.1073/pnas.1818322116]
- J33. Kalli M., **Mpekris F.**, Wong K.C., Panagi M., Ozturk S., Thiagalingam S., Stylianopoulos T., Papageorgis P. (2019). Activin A signaling regulates IL13R α 2 expression to promote breast cancer metastasis. *Front Oncol* 9: 32. [DOI: 10.3389/fonc.2019.00032].
- J34. Demetriadou C., Pavlou D., **Mpekris F.**, Achilleos C., Stylianopoulos T., Zaravinos A., Papageorgis P., Kirmizis A. (2019). Naa40 contributes to colorectal cancer growth by controlling PRMT5 expression. *Cell Death and Disease* 10 (3):236. [DOI: 10.1038/s41419-019-1487-3]
- J35. **Mpekris F.**, Voutouri C., Papageorgis P., Stylianopoulos T. (2018). Stress alleviation strategy in cancer treatment: Insights from a mathematical model. *Z Angew Math Mech.*, 1-12. [DOI: 10.1002/zamm.21700270]
- J36. **Mpekris F.**, Baish J.W., Stylianopoulos T., Jain R.K. (2017). Role of vascular normalization in benefit from metronomic chemotherapy. *PNAS*, 114(8):1994-1999 [DOI:10.1073/pnas.1700340114]
- J37. **Mpekris F.**, Papageorgis P., Polydorou C., Voutouri C., Kalli M., Pirentis A., Stylianopoulos T. (2017) Sonic-Hedgehog pathway inhibition normalizes desmoplastic tumor microenvironment to improve chemo- and nanotherapy, *J Controlled Release*, 261: 105-112. [DOI: 10.1016/j.jconrel.2017.06.022]
- J38. Papageorgis P.*, Polydorou C.*, **Mpekris F.***, Voutouri C., Agathokleous E., Kapnissi-Christodoulou C.P., Stylianopoulos T. (2017) Tranilast-induced stress alleviation in solid tumors improves the efficacy of chemo- and nanotherapeutics in a size independent manner. *Scientific Reports*, 7:46140 [DOI: 10.1038/srep46140] * Equal contribution
- J39. Polydorou C.*, **Mpekris F.***, Papageorgis P., Voutouri C., Stylianopoulos T. (2017). Pirfenidone normalizes the tumor microenvironment to improve chemotherapy, *Oncotarget*, 8(15):24506-24517. [DOI:10.18632/oncotarget.15534] *Equal Contribution
- J40. Iliia R., Liatsou I., Savva I., Vasile E., Vekas L., Marinica O., **Mpekris F.**, Pashalidis I., Krasia-Christoforou T. (2017). Magneto-responsive Polymer Networks as Adsorbents for the Removal of U(VI) Ions from Aqueous Media, *Eur. Pol. J.*, 97: 138-146 [DOI:10.1016/j.eurpolymj.2017.10.005]
- J41. Achilleos M., **Mpekris F.**, Stylianopoulos T., Krasia-Christoforou T. (2016). Structurally-defined semi-interpenetrating amphiphilic polymer networks with tunable and predictable mechanical response. *RSC Advances* 6:43278-43283 [DOI: 10.1039/C6RA07376j]
- J42. **Mpekris F.**, Angeli S., Pirentis A.P., Stylianopoulos T. (2015), Stress-mediated progression of solid tumors: effect of mechanical stress on tissue oxygenation, cancer cell proliferation and drug delivery. *Biomechanics and Modeling in Mechanobiology* 14(6):1391-1402 [DOI: 10.1007/s10237-015-0682-0]
- J43. Savva I., Evaggelou E., Papapaskeva G., Leontiou T., Stylianopoulos T., **Mpekris F.**, Stylianou K., Krasia-Christoforou T. (2015), Alignment of electrospun polymer fibers using a concave collector. *RSC Advances* 5(126): 104400-104407. [DOI: 10.1039/C5RA20429A]
- J44. Papaphilippou P.Ch., I. Vyrides, **F. Mpekris**, T. Stylianopoulos, C.A. Papatryphonos, C.R. Theocharis, T. Krasia-Christoforou (2015), Evaluation of novel, cationic electrospun microfibrillar membranes as adsorbents in bacteria removal. *RSC Advances* 5(83): 67617-67629. [DOI: 10.1039/C5RA11406C]

- J45. Pirentis A.P., Polydorou C., Papageorgis P., Voutouri C., **Mpekris F.**, T. Stylianopoulos T. (2015). Remodelling of extracellular matrix due to solid stress accumulation during tumour growth. *Connective Tissue Research* 56(5): 345-354. [DOI: [10.3109/03008207.2015.1047929](https://doi.org/10.3109/03008207.2015.1047929)]
- J46. **Mpekris F.**, Achilleos M., Vasile E., Vasile E., Krasia-Christoforou T., Stylianopoulos T. (2015), Mechanical Properties of Structurally-Defined Magnetoactive Polymer (Co)networks. *RSC Advances* 5:20011-20019 [DOI: [10.1039/C4RA16260A](https://doi.org/10.1039/C4RA16260A)]
- J47. Voutouri C.*, **Mpekris F.***, Papageorgis P., Odysseos A.D., Stylianopoulos T. (2014) Role of constitutive behavior and tumor-host mechanical interactions in the state of stress and growth of solid tumors. *Plos One* 9: e104717 [DOI: [10.1371/journal.pone.0104717](https://doi.org/10.1371/journal.pone.0104717)], * Equal Contribution
- J48. Stylianopoulos T., Martin J.D., Snuderl M., **Mpekris F.**, Jain S.R., Jain R.K. (2013) Coevolution of solid stress and interstitial fluid pressure in tumors during progression: implications for vascular collapse. *Cancer Res* 73:3833-3841 [DOI: [10.1158/0008-5472.CAN-12-4521](https://doi.org/10.1158/0008-5472.CAN-12-4521)]

PAPERS AND ABSTRACTS IN CONFERENCE PROCEEDINGS

- C1. **Mpekris F.**, Panagi M., Charalambous A., Voutouri C., Michael C., Papoui A., Stylianopoulos T., Combining two strategies to modulate the tumor microenvironment and optimize efficacy of nano-immunotherapy, European Society of Molecular Imaging (ESMI) 2025, Bilbao, Spain (poster presentation).
- C2. **Mpekris F.**, Panagi M., Charalambous A., Voutouri C., Michael C., Stylianopoulos T., A synergistic approach for enhancing tumor perfusion and nano-immunotherapy efficacy, International Conference on Tumor Microenvironment and Cellular Stress (TMCS) 2024, Paphos, Cyprus (Invited Speaker - podium presentation).
- C3. **Mpekris F.**, Panagi M., Charalambous A., Voutouri C., Michael C., Stylianopoulos T., Combining two strategies to modulate the tumor microenvironment and optimize efficacy of nano-immunotherapy, Controlled Release Society Annual Meeting (CRS) 2024, Bologna, Italy (podium presentation).
- C4. **Mpekris F.**, Papaphilippou P.C., Panagi M., Voutouri C., Michael C., Charalambous A., Cabral H., Krasia-Christoforou T., Stylianopoulos T., Polymeric micelles loaded with Pirfenidone enhance immunotherapy in murine tumor models, Controlled Release Society Annual Meeting (CRS) 2024, Bologna, Italy (podium presentation).
- C5. **Mpekris F.**, Panagi M., Voutouri C., Michael C., Martin J.D., Stylianopoulos T., NC-6300 nanomedicine modulates the tumor microenvironment and improves the efficacy of immunotherapy, 14th European and Global Summit for Clinical Nanomedicine (CLINAM) 2023, Basel, Switzerland (podium presentation).
- C6. **Mpekris F.**, Voutouri C., Panagi M., Baish J.W., Jain R.K., Stylianopoulos T., Modulating the tumor microenvironment with nanomedicine and metronomic therapy to enhance treatment efficacy of immunotherapy, 14th European and Global Summit for Clinical Nanomedicine (CLINAM) 2023, Basel, Switzerland (poster presentation).
- C7. **Mpekris F.**, Papaphilippou P.C., Panagi M., Michael C., Voutouri C., Dinev M.M., Krasia-Christoforou T., Stylianopoulos T., Mechano-modulation of tumor microenvironment with polymeric micelles to optimize the efficacy of immunotherapy, 5th International Conference on Structural Nano Composites (NANOSTRUC) 2023, Nicosia, Cyprus (podium presentation).
- C8. **Mpekris F.**, Panagi M., Voutouri C., Martin J.D., Kataoka K., Cabral H., Stylianopoulos T., Mechanotherapeutics optimize the efficacy of nano-immunotherapy in preclinical breast tumor models, Controlled Release Society Annual Meeting (CRS) 2022, Montreal, Canada (podium presentation).
- C9. **Mpekris F.**, Voutouri C., Panagi M., Baish J.W., Jain R.K., Stylianopoulos T., Metronomic administration of nanomedicine induces tumor microenvironment normalization and improves immunotherapy, Controlled Release Society Annual Meeting (CRS) 2022, Montreal, Canada (podium presentation).
- C10. **Mpekris F.**, Panagi M., Michael C., Voutouri C., Kinoh H., Osada A., Akinaga S., Yoshida S., Martin J.D., Stylianopoulos T., NC-6300 nanomedicine potentiates immune checkpoint inhibition in preclinical sarcoma models by normalizing the microenvironment, Controlled Release Society Annual Meeting (CRS) 2022, Montreal, Canada (poster presentation).

- C11. **Mpekris F.**, Martin J.D., Panagi M., Khan T., Margaret R. Martin M.R., Voutouri C., Norimatsu J., Stylianopoulos T., Kataoka K., Cabral H., Dexamethasone normalizes tumor microenvironment and enhances efficacy of cisplatin-loaded nanocarrier in cancer, Nanomedicine meets the Tumor Micro Environment Conference (NANOTME) 2021 (podium presentation)
- C12. **Mpekris F.**, Martin J.D., Panagi M., Khan T., Margaret R. Martin M.R., Voutouri C., Norimatsu J., Stylianopoulos T., Kataoka K., Cabral H., Re-engineering the mechanical tumor microenvironment with dexamethasone enhances efficacy of cisplatin-loaded nanocarrier in metastatic breast cancer, Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C) 2021 (podium presentation)
- C13. **Mpekris F.**, Baish J.W., Stylianopoulos T., Jain R.K. Role of vascular normalization and stress alleviation in metronomic chemotherapy: Insights from a mathematical model. 14th World Congress in Computational Mechanics (WCCM) ECCOMAS Congress 2020, Paris, France (podium presentation)
- C14. **Mpekris F.**, Martin J.D., Panagi M., Khan T.T., Martin M.R., Voutouri C., Papageorgis P., Polydorou C., Norimatsu J., Stylianopoulos T., Kataoka K., Cabral H., Re-engineering the mechanical tumor microenvironment with dexamethasone enhances efficacy of cisplatin-loaded nanocarrier in metastatic breast cancer, 12th European and Global Conference and Exhibition for Clinical Nanomedicine & Targeted Medicine (CLINAM 2020), Basel, Switzerland (poster)
- C15. **Mpekris F.**, Baish J.W., Stylianopoulos T., Jain R.K. Role of vascular decompression and functional normalization in benefit from metronomic chemotherapy: Insights from a mathematical model. World Congress of Biomechanics (WCB 2018), Dublin, Ireland (podium presentation)
- C16. **Mpekris F.**, Papageorgis P., Polydorou C., Voutouri C., Stylianopoulos T. Repurposing common anti-fibrotic to improve the efficacy of chemo- and nanotherapeutics in solid tumors. World Congress of Biomechanics (WCB 2018), Dublin, Ireland (poster)
- C17. **Mpekris F.**, Baish J.W., Stylianopoulos T., Jain R.K. Role of vascular decompression and functional normalization in benefit from metronomic chemotherapy. Angiogenesis Gordon Research Conference (GRC 2017), Newport RI, USA (poster)
- C18. Papageorgis P., Polydorou C., **Mpekris F.**, Voutouri C., Agathokleous E., Kapnissi-Christodoulou C.P., Stylianopoulos T. Re-engineering cancer: A new strategy to improve the efficacy of cancer nanomedicines. 10th European and Global Conference and Exhibition for Clinical Nanomedicine & Targeted Medicine (CLINAM 2017), Basel, Switzerland (poster)
- C19. **Mpekris F.**, Baish J.W., Stylianopoulos T., Jain R.K. Vascular Normalization Improves Metronomic Chemotherapy. Biomedical Engineering Society Annual Meeting (BMES 2017), Phoenix, USA (podium presentation)
- C20. Krasia-Christoforou T., Achilleos M., Christodoulou K., Leontidis E., Polydorou C., Papaparaskeva G., Voutouri C., **Mpekris F.**, Stylianopoulos T., Well-defined Semi-interpenetrating Polymer Networks: The BIEE-Crosslinking Approach, 12th International Conference on "Advanced Polymers via Macromolecular Engineering" 2017 (APME 2017), Belgium (poster)
- C21. **Mpekris F.**, Baish J.W., Stylianopoulos T., Jain R.K. *Role of vascular normalization and mechanical stress alleviation in metronomic chemotherapy: A computational study for solid tumor treatment.* European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2016), Crete, Greece (podium presentation)
- C22. **Mpekris F.**, Angeli S., Pirentis A., Stylianopoulos T., Mechanical Stress regulates Tissue Oxygenation, Cancer Cell Proliferation and Drug Delivery during Progression of Solid Tumors. XIV Mediterranean Conference on Medical and Biological Engineering and computing (MEDICON 2016), Paphos, Cyprus (podium presentation)
- C23. Papaparaskeva G., Savva I., Evaggelou E., Leontiou T., Stylianopoulos T., **Mpekris F.**, Stylianiou K., Krasia-Christoforou T., *Fabrication of aligned electrospun fibers using a static concave collector.* 4th International Conference on Electrospinning 2016 (Electrospin 2016), Italy (poster)
- C24. **Mpekris F.**, Achilleos M., Vasile E., Vasile E., Krasia-Christoforou T., Stylianopoulos T., *Mechanical behavior of the DMAEMA and DMAEMA-b-BuMA (co)networks in the presence of Fe₃O₄ nanoparticles.* Workshop on Magnetic Materials (2015), Nicosia, Cyprus (podium presentation)

- C25. **Mpekris F.**, Angeli A., Pirentis A., Stylianopoulos T., *Heterogenous stress distribution results in non-uniform tumor oxygenation, cancer cell proliferation and drug delivery*. 21st Congress of the European Society of Biomechanics (ESB 2015), Prague, Czech Republic (poster)
- C26. **Mpekris F.**, Angeli S., Pirentis A., Stylianopoulos T., *Solid stress accumulation inhibits the delivery of drugs*. 2nd International Conference on Nanotheranostics (ICON 2015), Limassol, Cyprus (podium presentation)
- C27. Kokonou M., **Mpekris F.**, Stylianopoulos T., Siaugue J.M., Odysseos A., *Electrospun PEO/PLLA Fibrous Meshes for Sustained Tyrosine Kinase Inhibitors Delivery in Situ*. International Conference on Nanotheranostics (ICoN 2013), Larnaca, Cyprus (podium presentation)

BOOK CHAPTERS

1. **Mpekris F.**, Stylianopoulos T., Chapter I: Blood Tumor Barriers, Book: Harnessing Endogenous Mechanisms for Targeted Drug Delivery (In Press).

WORKSHOPS

1. 35th Annual Critical Issues in Tumor Microenvironment: Angiogenesis, Metastasis and Immunology. Harvard Medical School, 26-29 October 2020, Boston, Massachusetts, USA.
2. 32nd Annual Critical Issues in Tumor Microenvironment: Angiogenesis, Metastasis and Immunology. Harvard Medical School, 5-8 September 2017, Boston, Massachusetts, USA.

MAJOR COLLABORATIONS

1. COST Action, CA17140, Cancer nanomedicine - from the bench to the bedside
2. Dr. Rakesh K. Jain, Edwin L. Steele Laboratories, Department of Radiation Oncology, Massachusetts General Hospital and Harvard Medical School, USA (Development of mathematical models to study interactions among tumor microenvironment components and their impact on drug delivery and efficacy).
3. Dr. Horacio Cabral, Department of Bioengineering, The University of Tokyo, Japan (Research on the efficacy of customized micelles containing anti-fibrotic and chemotherapy agents in preclinical tumor models).
4. Dr. John D. Martin, NanoCarrier Co.LTD, Japan (Research on the efficacy of NanoCarrier's NC-6300 micelles in murine tumor models).
5. Materia Therapeutics, USA. (Research on the anti-tumor efficacy of bosentan and ketotifen combined with immunotherapy in preclinical tumor models).
6. Dr. Leonidas Phylactou, Molecular Genetics, Function and Therapy Department, The Cyprus Institute of Neurology and Genetics, Cyprus (Biodistribution studies of muscle-derived extracellular vesicles in mice and whether these are delivered in a tissue-specific manner).
7. Dr. Kleopas A. Kleopa, Head of Neuroscience Department, The Cyprus Institute of Neurology and Genetics, Cyprus (Perform live imaging analysis of mice injected with the AAV9 vector expressing the reporter gene EGFP in order to detect EGFP in neural tissues of the peripheral nervous system).
8. Dr. Theodora Krasia-Christoforou, Department of Mechanical and Manufacturing Engineering, University of Cyprus, Cyprus. (Research on the efficacy of customized micelles containing anti-fibrotic agents in preclinical tumor models. / Mechanical characterization of polymeric materials).
9. Dr. Panagiotis Papageorgis, School of Sciences, European University of Cyprus, Cyprus. (Research on the identification of genes that affect cancer cell metastasis and invasion and employ agents to prevent action of these genes).
10. Theramir LTD, Cyprus. (Research on the anti-tumor efficacy of customized miRNA nanoparticles in preclinical tumor models).

REVIEWING ACTIVITIES

Reviewer for following Scientific Journals (having reviewed at least one manuscript):

1. Advanced Therapeutics
2. Scientific Reports
3. Journal of Controlled Release
4. PNAS Nexus
5. Frontiers in Oncology
6. Biomechanics and Modelling in Mechanobiology
7. Acta Biomaterialia
8. Journal of Theoretical Biology

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- 2021 Supervisor of 4 first year medical students for their project in “Physics in Cancer Treatment”, Medical School, University of Cyprus
- 2017– Supervisor of 4 final year undergraduate students for their diploma thesis project, one Master student for his master thesis and one PhD student for her PhD thesis on mathematical modelling of drug delivery in tumors. Department of Mechanical and Manufacturing Engineering, University of Cyprus.
- 2017– Training of 2 PhD students in murine tumor models, small laboratory animal handling and surgical procedures and in anticancer drug treatments. Department of Mechanical and Manufacturing Engineering, University of Cyprus.