

Dido M. Yova, Ph.D

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Present position

Professor, School of Electrical and Computers Engineering, National Technical University of Athens

Director of Biomedical Optics and Applied Biophysics Laboratory

Education

1972 Department of Physics, University of Athens
(Diploma of Physics)

1977 National Center of Scientific Research, Master in Biosciences

1980 School of Physics, University of Athens
(Ph.D in Physics)

Research interests

- ❖ Biophotonics-Nanobiophotonics
- ❖ Linear and Non-Linear Imaging Microscopy
- ❖ Functional Imaging of Cells
- ❖ Laser-Tissue Interactions
- ❖ Photodynamic Therapy and Photodiagnosis
- ❖ Free Radicals and Anti-oxidants
- ❖ Optical Imaging and Fluorescence Imaging
- ❖ Fluorescence Imaging Tomography
- ❖ Biosensors
- ❖ Applied Biophysics
- ❖ Membranes - Biological Macromolecules

Scientific activities

- ❖ Member of various working groups and teams of experts appointed by the Greek Ministry of Education
- ❖ Member of various working groups and teams of experts appointed by the Greek General Secretary of Research and Technology
- ❖ Evaluator of research proposals of the Greek General Secretary of Research and Technology.
- ❖ Member and Rapporteur in European Evaluation Committees in FP6 [Life Science and Health 2004-2005-2006, Human Capital and Mobility 2004-2005-2006, NEST 2004-2005-2006, Bioethics 2004-2005-2006, SMEs Go Health]

- ❖ Member and Rapporteur in European Evaluation Committees in FP7 [HEALTH, 2007, FOOD AND NUTRITION 2007-2008, KBBE 2008-2009]
- ❖ Reviewer of papers in several journals
- ❖ Project leader or workpackage leader in several National and International Projects [BRIGHT, BRIGHTER, ESPRIT, EPAN, SYN, PENED e.t.c.]
- ❖ Member of Evaluation Committees of Scientific Staff at Greek Universities.
- ❖ Supervisor of more than 50 Diploma and 15 M.Sc theses at the National Technical University of Athens
- ❖ Supervisor of 11 completed Ph.D Theses (five of them have been Awarded) and currently supervisor of 5 Ph.D. Theses
- ❖ Chair or Member of the organizing and/or scientific committee of 20 International Conferences on Biomedical Engineering, Oxidative Stress, Biomedical Lasers e.t.c.
- ❖ Director of the Biomedical Optics and Applied Biophysics Lab

Selected Publications

(more than 400 citations)

1. D. Gorpas, **D. Yova**, and K. Politoploulos, "A Coupled Radiative Transfer and Diffusion Approximation Model for the Solution of the Forward Problem and the a-Priori Fluorophore Distribution Estimation in Fluorescence Imaging", Multimodal Biomedical Imaging IV, Proc. SPIE, 7171:71710A (2009)
2. D. Gorpas, P. Maragos and **D. Yova**, "A New Morphological Segmentation Algorithm for Biomedical Imaging Applications", Image Processing: Machine Vision Applications II, Proc. SPIE, 7251:72510C (2009)
3. D. Gorpas, K. Politoploulos, **D. Yova** and S. Andersson-Engels, "Data Fitting and Image Fine Tuning Approach to Solve the Inverse Problem in Fluorescence Molecular Imaging" Imaging, Manipulation and Analysis of Biomolecules, Cells and Tissues VI, Proc. SPIE, 6859:68591H (2008)
4. E. Alexandratou, D. Yova, D. Gorpas et al., "Texture Analysis of Tissues in Gleason Grading of Prostate Cancer", Imaging, Manipulation and Analysis of Biomolecules, Cells and Tissues VI, Proc. SPIE, 6859:685904 (2008)
5. M. Kyriazi, E. Alexandratou, **D. Yova** and M. Rallis, "Topical Photodynamic Therapy of Murine Non-Melanoma Skin Carcinomas with Aluminium Phthalocyanine Chloride and Diode Laser: Pharmacokinetics, Tumor Response and Cosmetic Outcomes", Photodermatol. Photoimmunol. Photomed., 24:87-94 (2008)
6. E. Alexandratou, V. Atlamazoglou, T. Thireou Et Al., "Evaluation Of Machine Learning Techniques for Prostate Cancer Diagnosis And Gleason Grading", Special Issue on: "Classify the Classifiers: Investigating the Optimum Classification Technique Per Case in Bioinformatics", International Journal of Computational Intelligence In Bioinformatics And Systems Biology, (2008)
7. D. Gorpas, K. Politopoulos and **D. Yova**, "A Binocular Machine Vision System for Three-Dimensional Surface Measurement of Small Objects", Comput. Med. Imag. Grap., 31:625-637 (2007).
8. S. Psilodimitrakopoulos, G. Filippidis, Christos Kouloumentas and **D. Yova**, "Combined Two Photon Excited Fluorescence and Second Harmonic Generation Imaging Microscopy of Collagen Structures", Multiphoton Microscopy in the Biomedical Sciences VI, Proc. Spie, 6089: 60891p (2006).
9. M. Kyriazi, **D. Yova**, M. Rallis And A. Lima, "Cancer Chemopreventive Effects Of Pinus Maritima Bark Extract On Ultraviolet Radiation And Ultraviolet Radiation-7,12,Dimethylbenz(A)Anthracene Induced Skin Carcinogenesis Of Hairless Mice", Cancer Lett., 237:234-241 (2006)

10. E. Alexandratou, M. Kyriazi, **D. Yova**, S. Gräfe, T. Trebst, A. Johansson, J. Svensson, K. Svanberg, N. Bendsoe, S. Anderson-Engels, "Distribution Studies of *m*-THPC After Topical Application of M-Thpc Thermogel in a Murine Non-Melanoma Skin Cancer Tumor Model by Fluorescence Spectroscopic and Imaging Techniques", *Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy*, 6139: 61390g (2006).
11. E. Alexandratou, A. Sofou, P. Maragos, **D. Yova**, N.Kavantzias, "Computer Vision Algorithms In Dna Ploidy Image Analysis", *Imaging, Manipulation and Analysis of Biomolecules, Cells and Tissues*, 6088: 60880o (2006).
12. D. Gorpas, K. Politopoulos, E. Alexandratou, **D. Yova**, "A Binocular Machine Vision System for Non Melanoma Skin Cancer 3D Reconstruction", *Multimodal Biomedical Imaging*, 6081: 60810d (2006).
13. A. Johansson, J. Svensson, S. Andersson-Engels, N. Bendsoe, K. Svanberg, E. Alexandratou, M. Kyriazi, **D. Yova**, S. Gräfe, and T. Trebst, "Fluorescence and absorption assessment of a lipid mTHPC formulation following topical application in a skin tumor model", *JBO*, 12(03), 034026 (2006).
14. A. Johansson, J. Svensson, S. Andersson-Engels, N. Bendsoe, K. Svanberg, I. Bigio, E. Alexandratou, M. Kyriazi, **D. Yova**, S. Gräfe, and T. Trebst, "mTHPC pharmacokinetics following topical administration", *Optical Diagnostics and Sensing VI*, 6094: 60940C (2006).
15. E. Alexandratou, **D. Yova** and S. Loukas, "A confocal microscopy study of the very early cellular response to oxidative stress induced by zinc phthalocyanine sensitization", *Free Radical Bio. Med.*, 39:1119-1127 (2005).
16. D. Gorpas, E. Alexandratou, K. Politopoulos, **D. Yova**, "Kubelka-Munk Theory Diagnostic Algorithms to Discriminate Healthy and Atherosclerotic Animal Model Aorta", *Diagnostic Optical Spectroscopy in Biomedicine III*, 5268: 235-243 (2005).
17. Alexandratou E., **Yova D.**, Handris P., Loukas S., "Intracellular photoinduced oxidative stress by zinc phthalocyanine photosensitization. A study of the early events in real time using confocal microscopy", *Proc. SPIE -The International Society for Optical Engineering*, V5142, 1-8, (2003)
18. V.Atlamazoglou and **Dido Yova**, "Texture Analysis of Fluorescence Microscopic Images of Tissue" *Image Processing & Communications*, V8, 105-111 (2003).
19. E. Alexandratou, **Dido Yova**, P. Handris, D. Kletsas and S. Loukas, "Human fibroblasts alterations induced by low power laser irradiation at the single cell level using confocal microscopy", *Photochem. Photobiol. Sci.*, 1, 547-552 (2002).
20. T.Theodossiou, G.Rapti, V.Hovhannisyan, E.Gergioui, K.Politopoulos and **Dido Yova**, "Thermally induced irreversible conformational changes in collagen probed by optical second harmonic generation and Laser-induced fluorescence", *Lasers Med. Sci.*, 17, 34-41 (2002).
21. V.Atlamazoglou, **Dido Yova**, N.Kavantzias, S.Loukas, "Texture analysis of fluorescence microscopic images of colonic tissue sections", *Med. Biol. Eng. Comput.*, 39, 145-151 (2001).
22. T.Theodossiou, E.Georgiou, V.Hovhannisyan, K.Politopoulos and **Dido Yova**, "Energy transfer between collagen-dye molecules as a probe of higher-lying electronic states following multiexcitation", *Journal of Optics A: Pure and Applied Optics*, 3, (2001).
23. T.Theodossiou, E.Georgiou, V.Hovhannisyan and **Dido Yova**, "Energy transfer between collagen dye molecules as a probe of higher lying electronic states following multiexcitation", *J.Opt.*, 3, 1-3 (2001).
24. T.Theodossiou, E.Georgiou, V.Hovhannisyan and **Dido Yova**, "Visual Observation of infrared laser speckle patterns at half their fundamental wavelength", *Lasers Med. Sci.*, 16, 34-39 (2001)
25. **Dido Yova**, V.Hovhannisyan, T.Theodossiou, "Photochemical effects and hypericin photosensitized processes in collagen", *J. Biomedical Optics*, 6, 1-10, (2001).
26. E.Alexandratou, **Dido Yova**, P.Handris, D.Kletsas and S.Loukas, "Photodynamically induced oxidative stress in human fibroblasts. A study of the mechanisms at the single cell level using confocal laser scanning microscopy", *Hellenic Society of Biochemistry and Molecular Biology, Newsletter*, 48, 9-13 (2001).
27. T.Theodosiou, E.Georgiou, V.Hovhannisyan, C.Politopoulos, G.Rapti and **Dido Yova**, "Broadly tunable optical harmonic generation in type I collagen using nanosecond laser pulses", *Optical Biopsy and Tissue Optics*, SPIE, V1, 61-68 (2000).
28. V.Atlamazoglou, **Dido Yova**, S.Loukas, "Fluorescence labeling and microscopic imaging of colonic mucosal transformations", *Progress in Biomedical Optics*, SPIE, 1, 62-69 (2000).

29. **Dido Yova**, K.Halkiotis, A.Manolopoulos, N.Uzunoglou, V.Hovhannisyann, "A multifrequency Nd:YAG Laser Application for Tumor Fluorescence Diagnosis", "Laser Use Oncology II", SPIE, 4059, 79-87 (2000).
30. E.Georgiou, T.Theodossiou, V.Hovhannisyann, K.Politopoulos, G.Rapti and **Dido Yova**, "Second and third optical harmonic generation in type I collagen, by nanosecond laser irradiation, over a broad spectral region, Optics Communications, 176, 253-260 (2000).
31. M. Haritou, **Dido Yova**, and S. Loukas, "Agents Facilitating the Electric Field, Induced Fusion of Intact Rabbit Erythrocytes", Bioelectrochemistry, 52, 229-238 (2000).
32. **Dido Yova**, V.Atlamazoglou, N.Kavantzias and S.Loukas, "Development of a fluorescence-based imaging system for colon cancer diagnosis using two novel rhodamine derivatives", Lasers Med. Sci., 15, 140-147 (2000).
33. E.Alexandratou, **D.Yova**, V.Atlamazoglou, P.Chandris, S.Loukas, "Low power laser effects at Single Cell Level. A Confocal Microscopy Study", Effects of Low Power Light on Biological Systems V, SPIE, 4164, 25-33 (2000).
34. **Dido Yova**, T.Theodossiou, V.Hovhannisyann, "Photoinduced Effect of Hypericin on Collagen and tissue with High Collagen Content", in "Laser-Tissue Interaction and Tissue Optics", Progress in Biomedical Optics, SPIE, 3565, 174-180 (1999).
35. **Dido Yova**, V.Atlamazoglou, N.Kavantzias and S.Loukas, "Fluorescent Diagnosis of Colon Cancer Using two Novel Rhodamine B Derivatives", Progress in Biomed. Optics, SPIE, 3568, 2-10 (1999).
36. **Dido Yova**, V.Hovhannisyann, T.Theodossiou, "Laser induced photobleaching of collagen", Med. Biol. Engin. Comput., 37, 304-305 (1999).
37. E.Alexandratou, **Dido Yova** and D.V.Cokkinos, "Morphometric characteristics of red blood cells as diagnostic factors for coronary artery disease", Clin. Hemorheol. Microcirculation, 21, 383-388 (1999).
38. K.Halkiotis, **Dido Yova**, G.Pantelias, "In Vitro Evaluation of the Genotoxic and Clastogenic Potential of Photodynamic Treatment using Zinc Pthalocyanines and Diode Laser", Mutagenesis, 14, 193-198 (1999).
39. V.Atlamazoglou, **Dido Yova**, N.Kavantzias and S.Loukas, "Fluorescence imaging for colon cancer diagnostics", Med. Biol. Engin. Comput., 37, 263-264 (1999).
40. K.N.Halkiotis, **Dido Yova**, G.E.Pantelias, V.Makropoulos and G.Kordas, "Phototoxicity and Intracellular Generation of Free Radicals, Induced by ZnPcS4, Activated from a diode-laser source: an ESR study", Med. Biol. Engin. Comput., 37, 309-310 (1999).
41. K.Halkiotis, **Dido Yova**, G.Pantelias, "Photodynamic Treatment of Pancreatic Cancer Cells: genotoxicity and chromosome Damage Induced by Red Light and Zinc tetrasulfonated Phthalocyanines", Progress in Biomed. Optics, SPIE, 3563, 38-52 (1998).
42. **Dido Yova**, A. Delibasis, C. Papaodysseus, "Color Segmentation of Skin Lesions Using Self Organizing Neural Networks ", Progress in Biomed. Optics, SPIE, 3567, 156-167 (1998).
43. M.Haritou, **Dido Yova**, S.D.Koutsouris and S. Loukas, "Loading of Intact Rabbit Erythrocytes with Fluorophores and the Enzyme Pronase by means of Electroporation", Clin.Hemorh. and Microcirculation, 19, 205-217 (1998).
44. **Dido Yova**, V.Atlamazoglou, P.Davaris, N.Kavantzias and S.Loukas, "Colon Cancer Diagnosis using Fluorescence Spectroscopy and Fluorescence Imaging Technique", Progress in Biomed. Optics, SPIE, 3197, 4-15 (1997).
45. K.N.Halkiotis, **Dido Yova**, S.Loukas, G.E.Pantelias, D.Trafalis, N.K.Uzunoglu, "Influence of Drug and Light Dose in Determining PDT Efficacy in Human Pancreatic Cell, Treated with Zinc Tetrasulfonated Phthalocyanines (ZNPCS4)", Progress in Biomed. Optics, SPIE, 3191, 243-252 (1997).
46. **Dido Yova**, A.Delibasis, C.Papaodysseus, E.Koukoutsis, P.Vasilopoulos, "Development of Diagnostic Algorithms for Image Analysis of Skin Lesions", in Functional Imaging and Optical Manipulation of Living Cells, SPIE, 2983, 115-122 (1997).
47. K.N.Halkiotis, **Dido Yova**, N.K.Uzunoglu, G.Papastergiou, S.Matakias, I.Koukouvinos, "Development of a red diode laser system for Photodynamic Therapy", in "New Laser Technologies and Applications", SPIE, 3423, 421-426 (1997).
48. K.Halkiotis, L.Manolopoulos, and **Dido Yova**, "Drug Dependence of PDT on Pancreatic Cancer Cells in Vitro", in "New Laser Technologies and Applications", SPIE, 3423, 427-431 (1997).
49. S.Tseleni, N.Kavantzias, **Dido Yova**, E.Alexandratou, H.Paraskevovou, P.Davaris, "Findings of Computerized Nuclear Morphometry of Papillary Thyroid Carcinoma in Correlation with the Age of the Patients", Gen. Diagn. Pathol, 143: 23-27 (1997).
50. G.Stamatakis, N.Uzunoglu and **Dido Yova**, "An Integral Equation Solution to the Scattering of Electromagnetic Radiation by a System of two Interacted Triaxial Dielectric Ellipsoids: The Case of a two Red Blood Cells Rouleau", J. Biomed. Optics, 2, 282-294 (1997).

51. E.Agapitos, J.Ninas, N.Kavantzias, **Dido Yova**, A.Trikoupis, P.Davaris, "The Application of Image Analysis in the Measurement of the Myocardial Infarct Area in an Experimental Model", *Gen. Diagn. Pathol*, 143, 215-218 (1997).
52. N.Uzunoglu, **Dido Yova** and G.Stamatakis, "Light Scattering by Pathological and Deformed Erythrocytes: An Integral Equation Model", *J. Biomed. Optics*, 2, 310-318 (1997).
53. S.Tseleni, N.Kavantzias, **Dido Yova**, E.Alexandratou, V.Karydakias, J.Gogasand, P.Davaris, "Finding of Computerized Nuclear Morphometry of Papillary Thyroid Carcinoma in Correlation with known Prognostic Factors", *J. Exp. Clin. Cancer Res.*, 16: 401-406 (1997).
54. G.Stamatakis, **Dido Yova** and N.Uzunoglu, "Integral equation model of light scattering by an oriented monodisperse system of triaxial dielectric ellipsoids: application in ectacytometry", *Appl. Optics*, 38, 6503-6512 (1997).
55. C.Papaodysseus, K.Kassis, H.Gonis and **Dido Yova**, "Development and Evaluation of Pattern Recognition Techniques for Fluorescence Diagnosis of Atherosclerosis", in *Progress in Biomed. Optics*, SPIE, 2671, 116-124 (1996).
56. E.Paraskevaki, N.Kavantzias, P.Pavlopoulos, A.Delibasis, **Dido Yova** and P.Davaris, "Computerized Nuclear Morphometry of Renal Cell Carcinoma", *Gen. Diagn. Pathol*, 142, 101-104 (1996).
57. **Dido Yova**, C.Politopoulos, H.Gonis, C.Papaodysseus, "A Generalized Diagnostic Algorithm Based on Fluorescence Data for the Atherosclerosis", *Med. Biol. Engin. Computing*, 34, 297-298 (1996).
58. E.N.Sobol, M.Makropoulou, A.Serafetinides and **Dido Yova**, "Theoretical Model of CO₂ Laser Ablation of Soft Tissue Phantoms", *Il Nuovo Cimento D*, 18, 483-490 (1996).
59. **Dido Yova**, K. Halkiotis, G. Pantelias, "In Vitro Effects of UVA-Laser Radiation on Cells", *Progress in Biomedical Optics*, SPIE, 2630, 125-133 (1995).
60. **Dido Yova**, H.Gonis, S.Loukas, K.Kassis, E.Koukoutsis, C.Papaodysseus, "Comparison of Classification Algorithms Based on Fluorescence Data for the Diagnosis of Atherosclerosis", *Progress in Biomed. Optics*, SPIE, 2623, 436-447 (1995).
61. **Dido Yova**, H.Gonis, C.Politopoulos, E.Agapitos, N.Kavantzias, S.Loukas, "Interpretation of Diagnostic Implications of Fluorescence Parameters for Atherosclerosis in Fibrous, Calcified and Normal Arteries", *Tech. Health Care*, 3, 101-109 (1995).
62. D.Galaris, **Dido Yova**, P.Korantsopoulos, D.Koutsouris, "Effects of ascorbic acid on TERT - BUTIL Hydroperoxide - Induced Deformability Decrease in Human Erythrocytes", *Clin. Hemorheology*, 107-120 (1995).
63. **Dido Yova**, K.Kassis, E.Agapitos, N.Kavantzias, D.Koutsouris, A.Serafetinides, "Comparative Studies of Pulsed Nd-Yag and CO₂ Laser Effect on Aortic Valves", *Techn. Health Care*, 3, 53-60 (1995).
64. A.Serafetinides, H.Gonis, M.Makropoulou, E.Agapitos, N.Kavantzias, C.Politopoulos and **Dido Yova**, "TEA-CO₂ Laser Ablation of Coronary Artery", *Il Nuovo Cimento, Section D, Biophysics*, 17, 213-219 (1995).
65. **Dido Yova**, K.Kassis, D.Koutsouris, T.Mouroutis, E.Agapitos, A.A.Serafetinides, "Wavelength Dependence of Nanosecond Pulsed Laser Ablation of Atherosclerotic Coronary Artery", *Progress in Biomedical Optics*, SPIE, 2327, 324-331 (1994).
66. N. Uzunoglu, G.Stamatakis, D.Koutsouris, **Dido Yova**, "Light Scattering by Adjacent Red Blood Cells-a mathematical model", *Progress in Biomedical Optics*, SPIE, 2326, 334-345 (1994).
67. **Dido Yova**, H.Gonis, E.Agapitos, N.Kavantzias, C.Politopoulos, S.Loukas, "Application of Fluorescence Spectroscopy in the Diagnosis of Atherosclerosis of the Coronary Artery", *Medicine*, 66, 391-396 (1994).
68. **Dido Yova**, M.Haritou, D.Koutsouris, "Antagonistic Effects of Epinephrine and He-Ne Irradiation on RBCs Deformability", *Clinical Hemorheology*, 14, 369-378 (1994).
69. **Dido Yova**, M.Makropoulou, A.Serafetinides, H.Gonis, "The Polyacrylamide as a Phantom Material for CO₂ Laser Ablation Studies", in *Laser in Science, Technology and Life*, Ed.Siomos, 339-351 (1993).
70. G.Stamatakis, **Dido Yova**, D.Koutsouris and N.Uzunoglu, "A Mathematical Model for Light Scattering by Red -Blood Cells Aggregates", *Techn. And Health Care*, V1S, 332-335 (1993).