

CURRICULUM VITAE

DEMETRIOS F. GHANOTAKIS

Professor of Biochemistry
Department of Chemistry, University of Crete, GREECE

BIRTHDATE: May 12, 1957
BIRTHPLACE: Rhodes, Greece
CITIZENSHIP: Greek
ADDRESS: Department of Chemistry
University of Crete
Heraklion, Crete
GREECE
e.mail:ghanotakis@chemistry.uoc.gr
Tel. (2810)545034

STUDIES:

Department of Chemistry, Michigan State University, U.S.A
-Graduate assistant, 1980-1983
Ph.D degree, 1983

Department of Chemistry, University of Athens
Athens, Greece
-Chemistry degree, 1979

POSITIONS:

Department of Chemistry, University of Crete, Greece
-Professor of Biochemistry, 1997-present
-Associate Professor, 1993-1997
-Assistant Professor, 1989-1993
-Visiting Professor, 1987-1989
The University of Michigan, Division of Biological Sciences U.S.A
-Research Associate, 1983-1987

RESEARCH INTERESTS

The lab has two main areas of research, biochemistry and nanobiotechnology

Biochemistry: The lab is focused on *Protein Biochemistry* (isolation and characterization of enzymes and various proteins with emphasis of membrane proteins), *Physical Biochemistry* (use of biophysical techniques for studying the structural and functional properties of enzymes), *Enzyme mechanism elucidation* (mechanistic studies for the elucidation of the mechanisms of enzymatic reactions), *Biotechnology* (enzyme immobilization, applications of enzymes) and *Biodegradation* (application of bacteria in waste treatment).

Materials/Biomaterials: Work is focused on *Nanobiohybrids/Drug delivery*: Nanobiohybrids are stacked nanoparticles that can be loaded with organic molecules, such as pharmaceutical drugs or other therapeutics, and sent into cells or organs to deliver the organic compounds. Our research in this area involves manipulating the loading and releasing ability of the nanoparticles. These nanobiohybrids can be manipulated to be recognized by MRI or other imaging machines. They can also have organic tags (e.g folic acid) added to them so they'll be recognized and taken in by certain types of tissues or organs. In addition to biomolecules/drugs, the Ghanotakis' team focuses on the immobilization of cells and protein complexes in various biocompatible matrices.

The laboratory is well equipped, with the equipment that is necessary for biochemical and biophysical studies. In addition to standard equipment necessary for biochemical studies, there are two Sorvall ultracentrifuges, three refrigerated centrifuges a specialized kinetic UV/VIS spectrophotometer (Aminco DW2000) and a Bruker ER200D Electron Spin resonance spectrometer. In addition to the equipment which is located in the lab, there are various other instruments in the Department of Chemistry that can be used for the proposed research (NMR, FT-IR, X-Ray, MALDI, Fluoremeter, etc.,)

MOST IMPORTANT FUNDING SOURCES (coordinator: D. Ghanotakis):

- Greek General Secretariat of Research and Technology
- United Nations Industrial Development Organization
- European Union
- Volkswagen Stiftung
- Humboldt Foundation

TEACHING AT THE UNIVERSITY OF CRETE:

Undergraduate level:

Biochemistry I, Biochemistry II, Experimental Biochemistry

Graduate level:

Advanced Biochemistry, Topics in Biochemistry, Regulation of photosynthesis, Chemistry of natural products, Ecotoxicology, Pharmaceutical chemistry

Publications

1. "The role of ADRY reagents in destabilizing high-potential oxidizing equivalents generated in Photosystem II"

D.F. Ghanotakis, C.Y. Yerkes and G.T. Babcock

Biochim. Biophys. Acta 682, 21-31 (1982)

2. "Electron donation to Photosystem II in reaction center preparations"

G.T. Babcock, **D.F. Ghanotakis**, B. Ke and B.A. Diner

Biochim. Biophys. Acta 723, 276-286 (1983)

3. "Hydroxylamine as an inhibitor between Z and P680 in Photosystem II"

D.F. Ghanotakis and G.T. Babcock

FEBS Lett. 153, 231-234 (1983)

4. "Exogenous versus endogenous acceptors in Photosystem II in inhibited chloroplasts"

D.F. Ghanotakis, G.T. Babcock and C.T. Yerkes

Arch. Biochem. Biophys. 225, 248-255 (1983)

5. "Electron transport activity and polypeptide composition of the isolated Photosystem II complex"

P.O. Sandusky, C.L. Selvius-DeRoo, D.B. Hicks, C.F. Yocum, **D.F. Ghanotakis** and G.T. Babcock

In *Oxygen-Evolving System of Plant Photosynthesis* (Inoue, Y. et al., eds) pp. 189-199, Academic Press, Japan Inc., (1983)

6. "Structure and inhibition of components on the oxidizing side of Photosystem II"

D.F. Ghanotakis, P.J. O'Malley, G.T. Babcock and C.F. Yocum
In *Oxygen-Evolving System of Plant Photosynthesis* (Inoue, Y. et al., eds) pp. 91-101, Academic Press, Japan Inc., 1983)

7. "Inhibitory treatments of oxygen evolution and their effects on manganese content, Z behavior and polypeptide composition"

D.F. Ghanotakis, C.F. Yocum and G.T. Babcock

In *Advances in Photosynthesis Research* (Sybesma, C. ed) Vol. 1, pp. 279-282, Martinus Nijhoff/Dr. W. Junk Publishers, The Hague (1984)

8. "Structure and electron transfer reactions on the oxidizing side of Photosystem II"

G.T. Babcock, W.J. Buttner, **D.F. Ghanotakis**, P.J. O'Malley, C.T. Yerkes and C.F. Yocum

In *Advances in Photosynthesis Research* (Sybesma, C. ed) Vol. 1, pp. 243-252, Martinus Nijhoff/Dr. W. Junk Publishers, The Hague (1984)

9. "Factors affecting inactivation and reconstitution of oxygen evolution in the isolated PSII complex"

C.F. Yocum, P.O. Sandusky, **D.F. Ghanotakis** and G.T. Babcock

In *Advances in Photosynthesis Research* (Sybesma, C. ed) Vol. 1, pp. 341-344, Martinus Nijhoff/Dr. W. Junk Publishers, The Hague (1984)

10. "Structural and catalytic properties of the oxygen-evolving complex: Correlation of polypeptide and manganese release with the behavior of Z in chloroplasts and a highly resolved preparation of the PS II complex"

D.F. Ghanotakis, G.T. Babcock and C.F. Yocum

Biochim. Biophys. Acta 765, 388-398 (1984)

11. "Calcium reconstitutes high rates of oxygen evolution activity in polypeptide depleted PS II preparations"

D.F. Ghanotakis, G.T. Babcock and C.F. Yocum

FEBS Lett. 167, 127-130

12. "Water-soluble 17 and 23 kDa polypeptides restore oxygen evolution activity by creating a high affinity binding site for calcium on the oxidizing side of Photosystem II"

D.F. Ghanotakis, J.N. Topper, G.T. Babcock and C.F. Yocum

FEBS Lett. 170, 169-173 (1984)

13. "The oxygen evolving complex of Photosystem II: Polypeptide structure and organization of catalytic components"

C.F. Yocum, **D.F. Ghanotakis**, P.O. Sandusky, J.N. Topper and G.T. Babcock

In *Current Topics in Plant Biochemistry and Physiology* Vol. 3, pp. 51-60, University of Missouri, (Randal, D. et al., eds) (1984)

14. "Structural organization of the oxidizing side of Photosystem II: Exogenous reductants reduce and destroy the Mn-complex in PS II membranes depleted of the 17 and 23 kDa polypeptides"

D.F. Ghanotakis, J.N. Topper and C.F. Yocum

Biochim. Biophys. Acta 767, 524-531 (1984)

- 15.** "Kinetics of the oxygen evolving complex in 2M NaCl washed Photosystem II preparations"
J.P. Dekker, *D.F. Ghanotakis*, J.J. Plijter, H.J. vanGorkom and G.T. Babcock
Biochim. Biophys. Acta 767, 515-523 (1984)
- 16.** "The polypeptides of Photosystem II and their role in oxygen evolution"
D.F. Ghanotakis and C.F. Yocum
Photosynthesis Research 7, 97-114 (1985)
- 17.** "Structure of the oxygen evolving complex of Photosystem II: Calcium and lanthanum compete for sites at the oxidizing side of Photosystem II which control the binding of water soluble polypeptides and regulate the activity of the manganese complex"
D.F. Ghanotakis, G.T. Babcock and C.F. Yocum
Biochim. Biophys. Acta 809, 173-180 (1985)
- 18.** "The role of water-soluble polypeptides and calcium in photosynthetic oxygen evolution"
D.F. Ghanotakis and C.F. Yocum
In *Ion Interactions in Energy Transport Systems* (Papageorgiou et al., eds) pp. 291-301, Plenum, New York (1986)
- 19.** "ESR spectroscopy demonstrates that cytochrome b559 remains low potential in calcium reactivated salt-washed PS II particles"
D.F. Ghanotakis, C.F. Yocum and G.T. Babcock
Photosynthesis Research 9, 125-134 (1986)
- 20.** "On the role of water soluble polypeptides, calcium and chloride in photosynthetic oxygen evolution"
D.F. Ghanotakis, G.T. Babcock and C.F. Yocum
FEBS Lett. 192, 1-3 (1985)
- 21.** "Purification and properties of an oxygen evolving reaction center complex from Photosystem II membranes: A Simple procedure utilizing a non-ionic detergent and elevated ionic strength"
D.F. Ghanotakis and C.F. Yocum
FEBS Lett. 197, 244-248 (1986)
- 22.** "Characterization of a Photosystem II reaction center complex isolated by exposure of PS II membranes to a non-ionic detergent and high concentrations of NaCl"
D.F. Ghanotakis and C.F. Yocum
Photosynthesis Research 10, 483-488 (1986)
- 23.** "Purification of an Oxygen Evolving Photosystem II Reaction Center Core Preparation"
D.F. Ghanotakis, D.M. Demetriou and C.F. Yocum
In *Progress in Photosynthesis Research* (Biggins, J., ed.) Vol. 1, 681-684, Martinus Nijhoff Publishers, Dordrecht (1987)
- 24.** "Binding of the 17 and 23 kDa Water-Soluble Polypeptides to a Highly-Resolved PS II Reaction Center Complex"
S. Merritt, P. Ernfors, **D.F. Ghanotakis** and C.F. Yocum
In *Progress in Photosynthesis Research* (Biggins, J., ed.) Vol. 1, 689-692, Martinus Nijhoff

Publishers, Dordrecht (1987)

25. "Kinetics and Structure of the High Potential Side of Photosystem II"

G.T. Babcock, T.K. Chandrashekar, **D.F. Ghanotakis**, C.W. Hoganson, P.J. O'Malley, I.D. Rodriguez and C.F. Yocum

In *Progress in Photosynthesis Research* (Biggins, J., ed.) Vol. 1, 463-469, Martinus Nijhoff Publishers, Dordrecht (1987)

26. "Isolation and characterization of an oxygen evolving Photosystem II reaction center core and a 28 kDa Chl a-binding protein"

D.F. Ghanotakis, D.M. Demetriou and C.F. Yocum

Biochim. Biophys. Acta 891, 15-21 (1987).

27. "Comparative structural and Catalytic properties of oxygen evolving PS II preparations"

D.F. Ghanotakis, C.M. Waggoner, N.R. Bowlby, D.M. Demetriou, G.T. Babcock and C.F. Yocum

Photosynthesis Research 14, 191-199 (1987).

28. N.R. Bowlby, D.F. Ghanotakis, C.F. Yocum, J. Petersen and G.T. Babcock

In *Light-energy transduction in Photosynthesis: Higher plant and bacterial models* (Stevens, S.E. and Bryant, D.A., eds.) American Society of Plant Physiologists, Rockville, Maryland USA, pp. 215-226 (1988)

29. "Isolation and characterization of the 47 kDa protein and the D1-D2-Cyt b559 complex"

D.F. Ghanotakis, J.C. de Paula, D.M. Demetriou, N.R. Bowlby, J. Petersen, G.T. Babcock and C.F. Yocum

Biochim. Biophys. Acta 974, 44-53 (1989).

30. "Properties of the 47 kDa protein and the D1-D2-Cyt b559 complex"

D. F. Ghanotakis, G.T. Babcock and C.F. Yocum

In *Techniques and new developments in Photosynthesis research* (J. Barber and R. Malkin eds.) pp 123-126. Plenum Press, New York (1989).

31. "Mn²⁺ reduces Yz⁺ in manganese depleted PSII preparations"

C. Hoganson, **D.F. Ghanotakis**, G.T. Babcock and C.F. Yocum

Photosynthesis Research 22, 285-293 (1990)

32. "Chlorophyll-protein interaction in Photosystem II. Resonance raman spectroscopy of the D1-D2-Cytochrome b559 complex and the 47 kDa protein"

J. de Paula, **D.F. Ghanotakis**, N.R. Bowlby, J.P. Dekker, C.F. Yocum and G.T. Babcock

In *Current Research in Photosynthesis* (M. Baltscheffsky, ed.) Vol. 1, 643-646, Kluwer Academic Publishers, The Netherlands (1990).

33. "A simple procedure for the isolation of a stable D1-D2-Cyt b559 complex"

C. Fotinou and **D.F. Ghanotakis**

In *Current Research in Photosynthesis* (M. Baltscheffsky, ed.) Vol. 1, 275-278, Kluwer Academic Publishers, The Netherlands (1990).

34. "Characterization of the CP47-D1-D2-Cyt b559 complex of Photosystem II"

J. Petersen, J. Dekker, N. Bowlby, **D. Ghanotakis**, C. Yocum and G. Babcock
Biochemistry 29, 3226-31 (1990).

35. "Photosystem II and the oxygen evolving complex"

D.F. Ghanotakis and C.F. Yocum

Ann. Rev. Plant Physiol. Plant Mol. Biol. 41, 255-276 (1990).

36. "A preparative method for the isolation of the 43 kDa, 47 kDa and the D1-D2-Cyt b559 species directly from thylakoid membranes"

C. Fotinou and **D.F. Ghanotakis**

Photosynthesis Research 25, 141-145 (1990).

37. "Light-induced degradation in isolated Photosystem II particles: Identification of polypeptide fragments"

I. Virgin, **D. Ghanotakis** and B. Andersson

FEBS Lett. 269, 45-48 (1990).

38. "Light-induced D1 protein degradation is catalyzed by a serine-type protease"

I. Virgin, A. H. Salter, **D.F. Ghanotakis** and B. Andersson

FEBS Lett. 287, 125-128 (1991)

39. "Effect of the manganese complex on the binding of the extrinsic proteins (17, 23 and 33 kDa) of Photosystem II"

Kavelaki, K. and **Ghanotakis, D.**

Photosynthesis Research 29, 149-155 (1991)

40. "Calcium binding site(s) of Photosystem II as probed by lanthanides"

Bakou, A., Buser, C., Dandulakis, G., Brudvig, G. and **Ghanotakis, D.F.**

Biochim. Biophys. Acta 1099, 131-136 (1992).

41. "Extrinsic polypeptides and the inorganic cofactors of Photosystem II"

Ghanotakis, D.F., Bakou, A. and Kavelaki, K.

In: *Regulation of Chloroplast Biogenesis* (1991) pp. 375-382. Plenum Publ. Company. London, New York.

42. "Paramagnetic lanthanides which substitute for calcium in Photosystem II interact magnetically with TyrZ⁺"

Bakou, A. and **Ghanotakis, D.F.**

In *Research in Photosynthesis* (N. Murata ed.) Vol. II, 337-340. Kluwer Academic Press (1992).

43. "Substitution of calcium by lanthanides affects electron transport from Tyrosine Z to P680⁺ in Photosystem II"

Bakou, A. and **Ghanotakis, D.F.**

Biochim. Biophys. Acta 1141, 303-308 (1993).

44. "Selective extraction of 22 kDa and 10 kDa polypeptides from Photosystem II without removal of 23 kDa and 17 kDa extrinsic proteins"

Mishra, R. and **Ghanotakis, D.F.**

Photosynthesis Research 36, 11-16 (1993)

45. "Characterization of a Photosystem II core and its three dimensional crystals"
Fotinou, C., Kokkinidis, M., Haase, M., Fritsch, G., Michel, H. and **Ghanotakis, D.F.**
Photosynthesis Research 37, 41-48 (1993)

46. "Polyamines in the Photosynthetic apparatus"
Kotzabasis, K., Fotinou, C., Roubelakis-Angelakis, K. and **Ghanotakis, D.F.**
Photosynthesis Research, 38, 83-88 (1993).

47. "Destructive role of singlet oxygen during aerobic illumination of the Photosystem II core complex".
Neelam P. Mishra, Christof Francke, Hans J. van Gorkom and **Demetrios F. Ghanotakis**
Biochim. Biophys. Acta, **1186**, 81-90 (1994).

48. "Selective extraction of CP 26 and CP 29 proteins without affecting the binding of the extrinsic proteins (33, 23 and 17 kDa) and the DCMU sensitivity of a Photosystem II core complex".
Ranjit K. Mishra and **Demetrios F. Ghanotakis**
Photosynthesis Research, **42**, 37-42 (1994).

49. "Exposure of a Photosystem II complex to chemically generated singlet oxygen results in D1 fragments similar to the ones observed during aerobic photoinhibition"
Neelam P. Mishra and **Demetrios F. Ghanotakis**
Biochim. Biophys. Acta, **1187**, 296-300 (1994)

50. "The Oxygen Evolving Complex and the role of extrinsic polypeptides"
Bricker, T. and **Ghanotakis, D.F.**
In *Oxygenic Photosynthesis: The Light Reactions* (Ort, D. and Yocum, C.F. eds.) pp. 113-136.
Kluwer Academic Publishers, The Netherlands (1996).

51. "X-ray Absorption Spectroscopy of Sr²⁺, Dy³⁺ and Ca²⁺-Depleted Derivatives of the Oxygen Evolving Complex of Photosystem II"
Pamela Riggs-Gelasco, Rui Mei, **Demetrios Ghanotakis**, Charles Yocum and James Penner-Hahn
J. Am. Chem. Soc., **118**, 2400-2410 (1996)

52. "Generation and trapping of singlet oxygen during strong illumination of a Photosystem II core complex"
R.K. Mishra, N.P. Mishra, S. Kambourakis, M.Orfanopoulos and **D.F. Ghanotakis**
Plant Science., **115**, 151-155 (1996)

53. "Effects of mild trypsinization on the properties of a Photosystem II core complex"
E. Kouimtzoglou, R.K. Mishra, M. Haumann, W. Junge and **D.F. Ghanotakis**
Photosynthesis: from Light to Biosphere Vol II, pp. 305-308 (1995)

54. "Deuterium isotope effects on the kinetics YZ⁺ reduction in oxygen evolving Photosystem II membranes"

N. Lydakis-Simantiris, C.W. Hoganson, **D.F. Ghanotakis** and G.T. Babcock
Photosynthesis: from Light to Biosphere Vol II, pp. 279-282 (1995)

55. "UV-B induced inhibition of Photosystem II electron transport studied by EPR and chlorophyll fluorescence. Impairment of donor and acceptor side components"

I. Vass, L. Sass, E. Hideg, C. Spetea, A. Bakou, **D.F. Ghanotakis** and V. Petrouleas
Biochemistry, **35**, 8964-8973 (1996)

56. "Tubular crystals of a Photosystem II core complex"

G. Tsiotis, T. Walz, A. Spyridaki, A. Lustig, A. Engel and **D.F. Ghanotakis**
J. Mol. Biol., **259**, 241-248 (1996)

57. "Progress towards structural elucidation of Photosystem II"

G. Tsiotis, G. McDermott and **D.F. Ghanotakis**,
Photosynthesis Research, **50**, 93-101(1997)

58. "Structural analysis of photosystem II: Comparative study of cyanobacterial and higher plant photosystem II complexes."

Hasler, L., **Ghanotakis, D.**, Fedtke, B., Spyridaki, A., Miller, M., Muller, S.A., Engel, A. & Tsiotis, G.

Journal of Structural Biology 119, 273-283 (1997)

59. "Water oxidation by Photosystem II: Glycerol stabilizes quaternary oscillations of proton release from the donor side"

M. Haumann, M. Hundelt, P. Jahns, S. Chroni, O. Bogershausen, **D. Ghanotakis** and W. Junge
FEBS Lett. 410, 243-248 (1997)

60. Kinetic isotope effect on the reduction of Yz in oxygen evolving and Tris-washed PSII-membranes by time-resolved EPR

N. Lydakis-Simantiris, **D. Ghanotakis** and G. Babcock
Biochim. Biophys. Acta 1322, 129-140 (1997)

61. The kinetic and spectroscopic properties of the Yz radical in Ca²⁺ and Cl⁻ depleted Photosystem II preparations

N. Lydakis-Simantiris, P. Dorlet, **D. Ghanotakis** and G. Babcock
Biochemistry, **37**, 6427-35 (1998)

62. Structural investigation of the spinach PSII reaction center

Tsiotis, G., Psylinakis, M., Wolpensinger, B., Lustig, A., Engel, A. and **Ghanotakis, D.**
Eur. J. Biochem., **259**, 1-6 (1998)

63. "Polypeptides of Photosystem II: Structure and Function"

D.F. Ghanotakis, G. Tsiotis and T. Bricker

In *Concepts in Photobiology: Photosynthesis and Photomorphogenesis* (Singhal, Renger and Sapory eds.) in press (1999)

- 64.** “The Natural Product *Capsaicin* Inhibits Photosynthetic Electron Transport at the Reducing Side of Photosystem II and Purple Bacterial Reaction Center: Structural Details of Capsaicin Binding”
A. Spyridaki, G. Fritsch, E. Kouimtzooglou, L. Baciou and **D. Ghanotakis**
Biochim. Biophys. Acta, 1459, 69-76 (2000)
- 65.** “Accessibility of tyrosine Yz to exogenous reductants and Mn^{2+} in various Photosystem II preparations”
S. Chroni and **D.F. Ghanotakis**
Biochim. Biophys. Acta, 1504, 432-437 (2001)
- 66.** “Isolation and Spectroscopic Characterization of a Recombinant Bell Pepper Hydroperoxide Lyase
E. Psylinakis, E.M. Davoras, N. Ioannidis, M. Trikeriotis, V. Petrouleas, and **D.F. Ghanotakis**
Biochim. Biophys. Acta, 1533, 119-127 (2001)
67. “Isolation and crystallization of CP47, a Photosystem II chlorophyll binding protein. Degradation of CP47 upon dissociation from the core complex”
E. Psylinakis, G. Fritsch and **D.F. Ghanotakis**
Photosynthesis Research, 72, 211-216 (2002)
- 68.** The Mechanism of UV-A Radiation-Induced Inhibition of Photosystem II Electron Transport Studied by EPR and Chlorophyll Fluorescence
Vass, I., Turcsanyi, E., Touloupakis, E., **Ghanotakis, D.** and Petrouleas, V.
Biochemistry, 41, 10200-10208 (2002).
- 69.** Isolation, characterization, sequencing and crystal structure of charybdisin, a type 1 ribosome-inactivating protein from *Charybdis maritima* agg.
E. Touloupakis, R. Gessmann, K. Kavelaki, E. Christofakis, K. Petratos and **D.F. Ghanotakis**
FEBS Journal, 273, 2684-2692 (2006)
- 70.** Photosystem II: Composition and Structure
Aspasia Spyridaki, Emmanuel Psylinakis and **Demetrios F. Ghanotakis**
In M. T. Giardi and E. Piletska (editors). *Biotechnological Application of Photosynthetic Proteins: Biochips, Biosensors and Biodevices.* (2006), Landes Bioscience, Springer Publishers, Church St. Georgetown USA pp. 11–31.
- 71.** Biocompatible protoporphyrin IX-containing nanohybrids with potential applications in photodynamic therapy
Giorgos Kantonis, Markos Trikeriotis and **Demetrios F. Ghanotakis**
Journal of Photochemistry and Photobiology A: Chemistry, 185 (2007) 62-66
- 72.** Intercalation of hydrophilic and hydrophobic antibiotics in layered double hydroxides
Markos Trikeriotis and **Demetrios F. Ghanotakis**
Int. J. Pharm 332 (2007) 176-184
- 73.** Development of a photosystem II-based optical microfluidic sensor for herbicide detection

Dimitrios G. Varsamis, Eleftherios Touloupakis, Pietro Morlacchi,
Demetrios F. Ghanotakis, Maria Teresa Giardi, David C. Cullen
Talanta, 77, 42-47 (2008)

74. Nutraceutical use of garlic sulfur-containing compounds. E. Touloupakis and **D. F. Ghanotakis**. (2010) *Advances in Experimental Medicine and Biology*, 698, 110-121

75. Immobilization of glucose oxidase and 2-hydroxybiphenyl 3-monooxygenase in mesoporous silica: Characterization studies and construction of an amperometric glucose biosensor
Dimitrios Stefanakis, Asimina Margellou, Aimilia Psaroulia, Nikolaos Chaniotakis and **Demetrios F. Ghanotakis**
Analytical Letters, 43: 2582-2597 (2010)

76. Synthesis and characterization of gadolinium nanoparticles with potential applications in Magnetic Resonance Imaging, Neutron Capture Therapy and Targeted Drug Delivery
Dimitris Stefanakis and **Demetrios Ghanotakis**
Journal of Nanoparticle Research, 12 , 1285-1297 (2010) <http://dx.doi.org/10.1007/s11051-010-9848-y>

77. *Integrated plant biotechnologies applied to safer and healthier food production: the Nutra-Snack manufacturing chain.* G. Rea, A. Antonacci, M. Lambreva, S. Pastorelli, S. Ferrari, D. Fischer, U. Johannngmeier, W. Oleszek, T. Doroszewska, A.M. Rizzo, P.V.R. Berselli, B. Berra, A. Bertoli, L. Pistelli, B. Ruffoni, C. Calas-Blanchard, J.L. Marty, S.C. Litescu, M. Diaconu, E. Touloupakis, **D. F. Ghanotakis**, M.T. Giardi (2011). *Trends in Food Science and Technology*, 22, 353-366.

78. Intercalation of the herbicide atrazine in layered double hydroxides
Eleftherios Touloupakis, Asimina Margelou and **Demetrios F. Ghanotakis**
Pest Management Science. (2011) 67, 837-841 . DOI 10.1002/ps.2121

79. Alliinase immobilization in calcium alginate beads and layered double hydroxides matrices
Eleni Anifantakis, Eleftherios Touloupakis and **Demetrios F. Ghanotakis**
Journal of Food Biochemistry. (2012) 36, 12-20

80. Synthesis, RNA binding and nuclease activity of porphyrin-hydroxamic acid derivatives in the presence of lanthanides. M. Marketaki, E. Touloupakis, G. Charalambidis, **D. F. Ghanotakis**, A.G. Coutsolelos (2012). *Journal of Porphyrins and Phthalocyanines*. 16, 997-1005.

81. Structural Characterization of Hydroperoxide Lyase in Dodecyl Maltoside by Using Circular Dichroism. I. Panagakou, E. Touloupakis, **D. F. Ghanotakis** (2012) *the Protein Journal*. 32(1), 1-6. DOI 10.1007/s10930-012-9454-1

82. Microwave heating of arginine yields highly fluorescent nanoparticles
Aggelos Philippidis, Dimitrios Stefanakis, Demetrios Anglos and **Demetrios Ghanotakis** *Journal of Nanoparticle research* 15:1414-1423 (2013)
DOI 10.1007/s11051-012-1414-3

83. Antibacterial Activity of Essential Oils from Plants of the Genus *Origanum*. M. Stefanakis, E. Touloupakis, E. Anastasopoulos, **D. Ghanotakis**, H.E. Katerinopoulos, and P. Makridis. (2013) *Food Control*. 34(2), 539–546.

84. Dimitrios Stefanakis and **Demetrios Ghanotakis**, Synthesis and characterization of nanoparticles, consisting of a gadolinium paramagnetic core and a mesoporous silica shell, for controlled delivery of hydrophobic drugs *Journal of Nanoparticle Research* (2014) 16:2211

85. Dimitrios Stefanakis, Seimenis Ioannis and **Demetrios Ghanotakis** Synthesis and characterization of Gadolinium nanosheets with bound Rose Bengal. Potential use in photodynamic therapy and MRI. *Journal of Nanoparticle Research* (in press)

86. Dimitrios Stefanakis, Aggelos Philippidis, Labrini Sygellou, George Filippidis, **Demetrios Ghanotakis** and Demetrios Anglos. Synthesis of fluorescent carbon dots by a microwave heating process. Structural characterization and cell imaging applications *Journal of Nanoparticle Research* (in press)