

**1. Papers in Refereed Journals**

1. “Theoretical ab initio study on the electronic states of GaO and Ga<sub>2</sub>O”,  
I.D. Petsalakis, G. Theodorakopoulos, R.W. Gora and S. Roszak,  
J. Mol. Struct. (Theochem) 672, 105 (2004).
2. “Parent- and daughter-mediated halogenation reactions modelled for 1,2- and 1,4-dibromobenzene at Si(111)-7×7”,  
R.K. Harikumar, I.D. Petsalakis, J.C. Polanyi and G. Theodorakopoulos,  
Surface Science 572, 162 (2004).
3. “An ab initio study of the ground states of the vinoxy radical and of its ion”,  
A. Metropoulos,  
J. Mol. Struct. (Theochem) 674, 19 (2004).
4. “Theoretical study of glass systems using ab initio molecular electronic structure theory. 1. Lithium metaphosphate glass”,  
E.D. Simandiras and D.G. Liakos,  
J. Phys. Chem. A 108, 3854 (2004).
5. “Theory and computation of the attosecond dynamics of pairs of electrons excited by high-frequency short light pulses”,  
Th. Mercouris, Y. Komninos, and C.A. Nicolaides,  
Phys. Rev. A 69, 032502 (2004).
6. “Effects of configuration interaction on photoabsorption spectra in the continuum”,  
Y. Komninos and C.A. Nicolaides,  
Phys. Rev. A 70, 042507 (2004).
7. “Quantum defect theory for Coulomb and other potentials in the framework of configuration interaction, and implementation to the calculation of <sup>2</sup>D and <sup>2</sup>F<sup>0</sup> perturbed spectra of Al”,  
Y. Komninos and C.A. Nicolaides,  
J. Phys. B 37, 1817 (2004).
8. “Nonexponential decay propagator and its differential equation for real and complex energy distributions of unstable states”,  
Th. G. Douvropoulos and C.A. Nicolaides,  
Phys. Rev. A 69 032105 (2004).
9. “Nonlinear structures and thermodynamic instabilities in a one-dimensional lattice system”,  
N. Theodorakopoulos, M. Peyrard and R.S. MacKay,  
Phys. Rev. Lett. 93, 258101 (2004).
10. “Reorientational relaxation and rotational-translational coupling in water clusters in a dc external electric field”,

- A. Vegiri,  
J. Mol. Liquids, 110, 155 (2004).
11. “Dynamic response of liquid water to an external static electric field at T=250 K”,  
A.Vegiri (Invited paper),  
J. Mol. Liquids, 112, 107 (2004).
12. “Origin of the enhanced structural and reorientational relaxation rates in the presence of relatively weak dc electric fields”,  
A. Vegiri,  
Pure Appl. Chem. 76, 215 (2004).
13. “Clustering and percolation in lithium borate glasses”,  
A.Vegiri and C.P.E. Varsamis,  
J. Chem. Phys. 120, 7689 (2004).
14. “New ambient pressure organic superconductor with  $T_c=8.1$  K based on unsymmetrical donor ethylenedithiotetrathiafulvalene:  $\beta$ -(EDT-TTF) $_4$ Hg $_{2.83}$ I $_8$ ”,  
E. Zhilyaeva, O. Kazheva, S. Torunova, R. Lyubovskaya, O. Dyachenko, G. Mousdis, G.C. Papavassiliou, J. Perenboom, S. Pesotskii and R. Lyubovskii,  
Synth. Met. 140, 151 (2004).
15. “Possible quantum Hall effect in the two-dimensional organic conductor,  $\tau$ -(EDO-S, S-DMEDT-TTF) $_2$ (AuBr $_2$ ) $_{1+y}$  in the two-Fermi surface system”,  
K. Murata, T. Nakanishi, H. Yoshino, T. Konoike, J. Brooks, D. Graf, G.C. Papavassiliou.  
J. de Physique IV 114, 343 (2004).
16. “New ambient pressure organic superconductor with  $T_c = 8.1$  K:  
(EDT-TTF) $_4$ Hg $_{3.8}$ I $_8$ ”,  
R. Lyubovskaya, E. Zhilyaeva, S. Torunova, G. Mousdis, G. Papavassiliou, J. Perenboom, S. Pesotskii and R. Lyubovskii,  
J. de Physique IV 114, 463 (2004).
17. “New donor molecules, precursors of conducting salts”,  
G.C. Papavassiliou, G.A. Mousdis, A. Terzis, C. Paptopoulou, K. Murata, L. Li and H. Yoshino,  
J. de Physique IV 114, 569 (2004).
18. “Synthesis of some new electron  $\pi$ -donors containing methoxy groups”,  
G.A. Mousdis, G.C. Papavassiliou, N. Psaroudakis and G.C. Anyfantis,  
Z. Naturforsch. B 59, 839 (2004).
19. “Some new findings in  $\tau$ -phase: organic conductors”,  
G.C. Papavassiliou, G.A. Mousdis, G.C. Anyfantis, K. Murata, T. Nakanishi, L. Li, H. Yoshino, H. Tajima, M. Inoue, T. Konoike, J.S. Brooks, E.S. Choi and D. Graf,  
Materials Science-Poland 22, 365 (2004).
20. “Structural and physical properties of  $\tau$ -(EDO-S,S-DMEDT-TTF) $_2$ (AuBr $_2$ ) $_{1+y}$  and  $\tau$ -(P-S,S-DMEDT-TTF) $_2$ (AuBr $_2$ ) $_{1+y}$ ”

G.C. Papavassiliou, G. Mousdis, G. C. Anyfantis, K. Murata, L. Li, H. Yoshino, H. Tajima, T. Konoike, J.S. Brooks, D. Graf, E.S. Choi, Z. Naturforsch. A 59, 952 (2004).

21. “A new quantum Hall effect in the two-dimensional organic conductor,  $\tau$ -(EDO-S,S-DMEDT-TTF)<sub>2</sub>(AuBr<sub>2</sub>)<sub>(1+y)</sub>”, K. Murata, H. Yoshino, T. Nakanishi, T. Konoike, J. Brooks, D. Graf, C. Mielke and G.C. Papavassiliou, Current Applied Physics 4, 488 (2004).

22. “Structural investigation of superionic AgI-containing orthoborate glasses”, C.P.E. Varsamis, E.I. Kamitsos, M. Tatsumisago and T. Minami, J. Non-Cryst. Solids, 345&346, 93 (2004).

23. “Raman spectra of As<sub>x</sub>Se<sub>100-x</sub>, As<sub>40</sub>Se<sub>60</sub>, and As<sub>50</sub>Se<sub>50</sub> glasses doped with metals”, M.S. Iovu, E.I. Kamitsos and C.P.E. Varsamis, Moldavian J. Phys. Sci. 3, 286 (2004).

24. “Dependence of sodium borate glass structure on depth from the sample surface”, P.M. Machowski, C.P.E. Varsamis and E.I. Kamitsos, J. Non-Cryst. Solids 345&346, 213 (2004).

25. “Thermosensitive non-covalently bonded block copolymerlike micelles from interpolymer complexes”, D. Topouza, K. Orfanou and S. Pispas, J. Polym. Sci. Part A: Polym. Chem. 42, 6230 (2004).

26. “Micelles of poly(isoprene-b-2-vinylpyridine-b-ethylene oxide) terpolymers in aqueous media and their interaction with surfactants”, G. Koutalas, S. Pispas and N. Hadjichristidis, Eur. Phys. J. E 15, 457 (2004).

27. “Diblock copolymer adsorption from the aqueous micellar phase to solid surfaces: Real time monitoring by ATR spectroscopy in the mid-infrared”, E. Keskin, V. Gionis, G.D. Chryssikos, I. Hiotelis, C. Toprakcioglu, N. Stavrouli and C. Tsitsilianis, Macromol. Symp. 205, 117 (2004).

28. “Polymorphism and devitrification of nifedipine under controlled humidity: a combined FT-Raman, IR and Raman microscopic investigation” (invited paper), K.L.A. Chan, O.S. Fleming, S.G. Kazarian, D. Vassou, G.D. Chryssikos and V. Gionis, J. Raman Spectroscopy 35, 353 (2004).

29. “Pulsed laser deposited lead-germanate glass systems”, A. Tsigara, L. Velli, A. Giannoudakos, C.P.E. Varsamis, M. Kompitsas, N.A. Vainos and E.I. Kamitsos, Appl. Phys. A 79, 1319 (2004).

30. “Metal/metal-oxide/metal etalon structures grown by pulsed laser deposition”,  
N.A. Vainos, A. Tsigara, J. Manasis, A. Giannoudakos, G. Mousdis, N. Vakakis, M. Kompitsas, A. Klini and F. Roubani-Kalantzopoulou,  
*Appl. Phys. A* 79, 1395 (2004).
31. Answer to the comments on the paper “Modulation of period of quantum beats from optical emissions from the excited electronic states of mercury triatomic clusters” [*Synth. Met.* 124 (2001) 267],  
E. Sarantopoulou, C. Skordoulis, A.C. Cefalas and A. Vourdas,  
*Synth. Met.* 140, 113 (2004).
32. “Observation of cluster formation of rare earth ions in wide band gap fluorine dielectric crystals using transmission electron microscopy”,  
G. Dražić, S. Kobe, E. Sarantopoulou, Z. Kollia and A.C. Cefalas,  
*Appl. Surf. Science* 226, 120 (2004).
33. “Nanometric size control and treatment of historic paper manuscript and prints with laser light at 157 nm”,  
Z. Kollia, E. Sarantopoulou, A.C. Cefalas, S. Kobe, Z. Samardžija.  
*Appl. Phys. A* 79, 379 (2004).
34. “Fabrication of magnetic SmFe films by pulsed laser deposition at 157 nm”,  
E. Sarantopoulou, S. Kobe, K. Žužek-Rozman, Z. Kollia, G. Dražić and A.C. Cefalas.  
*IEEE Transactions on Magnetism* 40, 2943 (2004).
35. “Deposition of particulate-free thin films by two synchronized laser sources: effects of ambient gas pressure and laser fluence”,  
E. Gyorgy, I.N. Mihailescu, M. Kompitsas and A. Giannoudakos,  
*Thin Solid Films* 446, 178 (2004).
36. Comments on the paper “Modulation of period of quantum beats from optical emissions from the excited electronic states of mercury triatomic clusters” by E. Sarantopoulou et al (Eds.) [*Synth. Met.* 124 (2001) 267],  
M. Kompitsas,  
*Synth. Met.* 140, 109 (2004).
37. “Particulates formation and solutions for their elimination during pulsed laser deposition”,  
E. György, I.N. Mihailescu, M. Kompitsas and A. Giannoudakos,  
*J. Optoelectr. Adv. Mater.* 6, 39 (2004).

<b>2. Papers in Proceedings of International and National Conferences</b>
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1. “Lowest energy path of oxygen near CH: A combined configuration interaction and tight-binding approach”,  
N.C. Bacalis, A. Metropoulos, D.A. Papaconstantopoulos,  
*Proc. Int. Conf. Computational Meth. Sci. and Eng.*, Athens (2004), Lecture Series on Computer and Computational Sciences, Vol 1, T.E. Simos and G. Maroulis (Eds), VSP International Science Publishers (2004), pp. 1015-1021.

2. “Infrared study of CuI-containing phosphate and molybdophosphate superionic glasses”,  
C.P.E. Varsamis, E.I. Kamitsos, T. Minami and N. Machida,  
Proc. XX Int. Congr. Glass, Kyoto, Japan, 2004. T. Yoko (Ed.), The Ceramic Society of  
Japan, Tokyo, 2004, ISBN 4-931298-43-5 C3858 Y10000E, pp. 1-6, paper O-10-015.
3. “Structural investigation of fluoride phosphate glasses”,  
D. Moncke, D. Ehrst, L. Velli, C.P.E. Varsamis and E.I. Kamitsos,  
Proc. XX Int. Congr. Glass, Kyoto, Japan, 2004. T. Yoko (Ed.), The Ceramic Society of  
Japan, Tokyo, 2004, ISBN 4-931298-43-5 C3858 Y10000E, pp. 1-6, paper P-10-030.
4. “Short-range order structure of alkaline-earth borate glasses”,  
N. Ohtori, Y. Suzuki, K. Takase, K. Handa, E.I. Kamitsos and N. Umesaki,  
Proc. XX Int. Congr. Glass, Kyoto, Japan, 2004. T. Yoko (Ed.), The Ceramic Society of  
Japan, Tokyo, 2004, ISBN 4-931298-43-5 C3858 Y10000E, pp. 1-6, paper O-10-005.
5. “Studies of ionic borate glasses by molecular dynamics”,  
C.P.E. Varsamis, A. Vegiri and E.I. Kamitsos,  
Proc. XIX Greek Conf. on Solid State Physics and Materials Science, C.B. Lioutas (Ed.),  
Thessaloniki, Greece, (September 2004), pp. 609-612 (in Greek).
6. “Structure of  $x\text{PbO}-(1-x)\text{SiO}_2$  glasses by infrared and Raman spectroscopy”  
Y.D. Yiannopoulos, C.P.E. Varsamis and E.I. Kamitsos,  
Proc. XIX Greek Conf. on Solid State Physics and Materials Science, C.B. Lioutas (Ed.),  
Thessaloniki, Greece, (September 2004), pp. 593-596 (in Greek).
7. “Synthesis and characterization of urea-formaldehyde resins”,  
E. Minopoulou, E. Dessipri, G.D. Chryssikos, V. Gionis, A. Paipetis and C. Panayiotou,  
Proc XIX Greek Conf. on Solid State Physics and Materials Science, C.B. Lioutas (Ed.),  
(Thessaloniki, September 2004), pp. 483-486 (in Greek).
8. “THz-bridge: a European project for the study of the interaction of Terahertz radiation  
with biological systems”  
G.P. Gallerano, E. Grosse, R. Korenstein, M. Dressel, W. Mäntele, M.R. Scarfl, A.C. Cefalas, P.  
Taday, R.H. Clothier and P. Jepsen,  
Proc. Conference Digest of the 2004 Joint 29<sup>th</sup> International Conference on infrared and  
millimeter waves and 12<sup>th</sup> International Conference on Terahertz Electronics (2004), pp. 817-  
818.
9. “Laser grown photonic structures”  
N.A. Vainos,  
Proc. SPIE, ROMOPTO 2003: Seventh Conference on Optics, Valentin I. Vlad (Ed.) (2004),  
5581, pp.1-11; Plenary Paper.

<b>3. Book Chapters</b>
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1. “Tetrachalcogenafulvalenes with four additional heteroatoms”,  
G.C. Papavassiliou,

in “TTF Chemistry: Fundamental Applications of Tetrathiafulvalene”, J.-I. Yamada and T. Sugimoto (Eds.), Kodansha-Springer, Tokyo, 2004, Chap. 2, pp. 35-58 (Invited review article).

2. “Statistical physics of localized vibrations”,  
N. Theodorakopoulos,  
in “Energy Localisation and Transfer”, T. Dauxois, A. Litvak-Hinenzon, R. MacKay & A. Spanoudaki (Eds.), Advanced Series on Nonlinear Dynamics, World Scientific (2004), Vol. 22, pp. 341-353.

#### **4. Patents**

1. “Use of near infrared spectroscopy in composite panel production”,  
E. Dessipri, G.D. Chryssikos, V. Gionis, A. Paipetis and G. Kalousis,  
RSA 2003/4758, Granted 29.09.2004  
(Priority data: 02/051898 A1 – 04.07.2002, WO).

#### **5. Dissertations**

##### **a. PhD theses**

1. “Optical properties of the  $4f^{n-1}5d$  electronic configurations of the trivalent rare earth ions in the wide band gap crystals”,  
Z. Kollia, supervisors A.C. Cefalas and A.A. Serafetinides, National Technical University of Athens (2004).

2. “Laser spectroscopy of Rydberg states on Zn and Cd in a thermionic diode”,  
C. Baharis, supervisors M. Kompitsas and A. Bolovinos, University of Ioannina, Dept. of Physics (2004).