

**1. Papers in Refereed Journals**

1. “Broadband absorption and ab initio results on the CF  $C^2\Sigma^+ - X^2\Pi$  system”,  
J. Luque, E.A. Hudson, J.P. Booth and I.D. Petsalakis,  
J. Chem. Phys. 118, 1206 (2003).
2. “Theoretical ab initio study of the electronic states of KrH and KrH<sup>+</sup>. Quantum defect and complex coordinate calculations on the Rydberg states of KrH”,  
I.D. Petsalakis, G. Theodorakopoulos and R.J. Buenker,  
J. Chem. Phys. 119, 2004 (2003).
3. “Theoretical study of the induced attachment of benzene to Si(111) 7X7”,  
I.D. Petsalakis, J.C. Polanyi and G. Theodorakopoulos,  
Surface Science 544, 162 (2003).
4. “States of the CH<sub>3</sub>C radical conducive to the formation of the C<sub>2</sub>H<sub>3</sub>O<sup>+</sup> ion”,  
A. Metropoulos,  
Chem. Phys. Lett. 368, 701 (2003).
5. “A possible pathway for the formation of the C<sub>2</sub>H<sub>3</sub>O<sup>+</sup> chemi-ion”,  
A. Metropoulos,  
Chem. Phys. Lett. 375, 26 (2003).
6. “Ab initio investigation of the ground state properties of PO, PO<sup>+</sup>, and PO<sup>-</sup>”,  
A. Metropoulos, A. Papakondylis and A. Mavridis,  
J. Chem. Phys. 119, 5981 (2003).
7. “On the feasibility of chemi-ion formation in the system CH<sub>2</sub>CH ( $\tilde{a}^4A'$ ) + O ( $^3P$ )”,  
A. Metropoulos,  
J. Chem. Phys. 119, 12029 (2003).
8. “A theoretical study on the solvolytic reactivity of the [Re<sub>3</sub>( $\mu$ -Cl<sub>3</sub>)Cl<sub>9</sub>]<sup>n-</sup> clusters (n=3,4) using ab initio and density functional theory calculations”,  
N. Psaroudakis, K. Mertis, D.G. Liakos and E.D. Simandiras,  
Chem. Phys. Lett. 369, 490 (2003).
9. “Solution of the many-electron many-photon problem for strong fields: Application to Li<sup>-</sup> in one and two-color laser fields”,  
Th. Mercouris and C.A. Nicolaides,  
Phys. Rev. A 67, 063403 (2003).
10. “Tunneling dissociation from a double well via path integrals”,  
Th. G. Douvropoulos and C.A. Nicolaides,  
J. Chem. Phys. 119, 8235 (2003).
11. “Calculation of n=3 intrashell resonance states of He<sup>-</sup> and of isoelectronic atoms”,  
N.A. Piangos and C.A. Nicolaides,

- Phys. Rev. A 67, 052501 (2003).
12. “Aspects of the theory and computation of resonances, with applications to field-free and field-dressed resonance states in atomic physics”,  
C.A. Nicolaidis,  
Int. J. Theor. Phys. 42, 2145 (2003).
13. “Thermodynamic instabilities in one dimensional particle lattices: a finite-size scaling approach”,  
N. Theodorakopoulos,  
Phys. Rev. E 68, 026109 (2003).
14. “Thermal denaturation of a helicoidal DNA model”,  
M. Barbi, S. Lepri, M. Peyrard and N. Theodorakopoulos,  
Phys. Rev. E 68, 061909 (2003).
15. “Preparation and characterization of 5,6-Dimethyl-5,6-dihydro-[1,4] diselenino[2,3-d][1,3]dithiole-2-thione and similar compounds”,  
G.C. Papavassiliou, G.A. Mousdis, G.C. Anyfantis, N. Assimomytis and B.R. Steele,  
Z. Naturforsch. B 58, 813 (2003).
16. “Crystal structure and optical properties of 4-[4-(Dimethylamino)styryl]-1-methylpyridinium lead tribromide”,  
G.C. Papavassiliou, G.A. Mousdis, A. Terzis and C.P. Raptopoulou,  
Z. Naturforsch. B 58, 815 (2003).
17. “Evidence for a metallic, but unusual ground state in  $\tau$ -conductors”,  
K. Murata, T. Konoike, K. Iwashita, H. Yoshino, T. Sasaki, K. Hiraki, T. Takahashi, Y. Nishio, K. Kajita, and G.C. Papavassiliou,  
Synth. Met. 133-134, 103 (2003).
18. “Giant Shubnikov-de Haas oscillations in  $\tau$ -conductors”,  
T. Konoike, K. Iwashita, T. Sasaki, K. Hiraki, T. Takahashi, G.C. Papavassiliou, H. Yoshino and K. Murata,  
Synth. Met. 133-134, 157 (2003).
19. “Low temperature ground state of  $\tau$ -type organic conductors”,  
K. Hiraki, T. Takahashi, T. Konoike, H. Yoshino, K. Murata and G.C. Papavassiliou,  
Synth. Met. 133-134, 159 (2003).
20. “Reflection spectroscopy of  $\tau$ -phase organic conductors under the magnetic field”,  
H. Yoshino, M. Inoue, H. Tajita, R. Sakamoto, J. Yamazaki, T. Konoike, G.C. Papavassiliou and K. Murata,  
Synth. Met. 135-136, 555 (2003).
21. “Shubnikov-de Haas oscillations and low temperature electronic structure in  $\tau$ -phase conductors”,  
T. Konoike, K. Iwashita, I. Nakano, H. Yoshino, T. Sasaki, T. Takahashi, Y. Nogami, J.S. Brooks, D. Graf, C.H. Mielke, G.C. Papavassiliou and K. Murata,  
Synth. Met. 135-136, 615 (2003).

22. “New donor molecules and their  $\tau$ -phase conducting salts”,  
G.C. Papavassiliou, G.A. Mousdis, A. Terzis, C.P. Raptopoulou K. Murata. T. Konoike, H. Yoshino, A. Graja and A. Łapiński,  
Synth. Met. 135-136, 651 (2003).
23. “Anomalous specific heat of  $\tau$ -type organic conductors”,  
Y. Nishio, K. Nara, K. Kajita, H. Yoshino, K. Murata and G.C. Papavassiliou,  
Synth. Met. 135-136, 667 (2003).
24. “Optical properties of the conducting salt  $\tau$ -(P-S,S-DMEDT-TTF)<sub>2</sub>(AuBr<sub>2</sub>)(AuBr<sub>2</sub>)<sub>y</sub> (y $\approx$ 0.75)”,  
A. Lapinski, A. Graja, G.C. Papavassiliou and G.A. Mousdis,  
Synth. Met. 139, 405 (2003).
25. “Shubnikov-de Haas oscillations and Fermi surface of  $\tau$ -phase conductors”,  
T. Konoike, K.-I. Iwashita, I. Nakano, H. Yoshino, T. Sasaki, Y. Nogami, J. S. Brooks, D. Graf, C. H. Mielke, G.C. Papavassiliou and K. Murata,  
Physica E 18, 188 (2003).
26. “High magnetic field-induced insulating phase in an organic conductor”,  
J.S. Brooks, D. Graf, E. Choi, L. Balicas, K. Storr, C.H. Mielke and G.C. Papavassiliou,  
Phys. Rev. B 67, 153104 (2003).
27. “Infrared studies of borate glasses”,  
E.I. Kamitsos,  
Phys. Chem. Glasses 44, 79 (2003).
28. “Spectroscopic study of As<sub>2</sub>S<sub>3</sub> glasses doped with Dy, Sm and Mn”,  
M.S. Iovu, S.D. Shutov, A.M. Andriesh, E.I. Kamitsos, C.P.E. Varsamis, D. Furniss, A.B. Seddon and M. Popescu,  
J. Non-Cryst. Solids 326&327, 306 (2003).
29. “Neutron scattering studies of vitreous germania”,  
E. Fabiani, M. A. Gonzalez, S. Caponi, A. Fontana, M. Montagna, O. Pilla, F. Rossi and C.P.E. Varsamis,  
J. Non-Cryst. Solids 322, 7 (2003).
30. “Vibrational dynamics of ‘strong’ glasses: the case of v-SiO<sub>2</sub> and v-GeO<sub>2</sub>”,  
O. Pilla, A. Fontana, S. Caponi, F. Rossi, G. Viliani, M.A. Gonzalez E. Fabiani and C.P.E. Varsamis,  
J. Non-Cryst. Solids 322, 53 (2003).
31. “FT-Raman spectroscopy as diagnostic tool of Congo red binding to amyloids”,  
V.A. Iconomidou, G.D. Chryssikos, V. Gionis, A. Hoenger and S.J. Hamdrakas,  
Biopolymers (Biospectroscopy) 72, 185 (2003).
32. “Use of FT-NIR spectroscopy for the on-line monitoring of formaldehyde-based resin synthesis”,  
E. Dessipri, E. Minopoulou, G.D. Chryssikos, V. Gionis, A. Paipetis and C. Panayiotou,

Eur. Polym. Journal 39, 1533 (2003).

33. “Use of NIR for structural characterization of urea formaldehyde resins”,  
E. Minopoulou, E. Dessipri, G.D. Chryssikos, V. Gionis, A. Paipetis and C. Panayiotou,  
Int. J. Adhesion & Adhesives 23, 473 (2003).

34. “Nanostructured imaging of biological specimens in vivo with laser plasma X-ray contact microscopy”,  
A.C. Cefalas, E. Sarantopoulou, Z. Kollia, P. Argitis, E. Tegou, T.W. Ford, A.D. Stead, C. N. Danson, D. Neely and S. Kobe,  
Mater. Sci. Eng. C 23, 105 (2003).

35. “Magnetic moment of the  $4f^8$  and  $4f^75d$  electronic configurations of  $Tb^{3+}$  ions in wide band gap fluoride dielectric crystals”,  
E. Sarantopoulou, S. Kobe, Z. Kollia, P.J. McGuinness and A.C. Cefalas,  
IEEE Transactions on Magnetism 39, 3426 (2003).

36. “Magnetic and optical properties of single  $4f^n$  and mixed  $4f^{n-1}5d$  electronic configurations of trivalent rare earth ions in wide band gap dielectric crystals”,  
E. Sarantopoulou, S. Kobe, Z. Kollia, B. Podmiljšak, P.J. McGuinness, G. Dražic and A.C. Cefalas,  
J. Magn. Magn. Mater. 267, 182 (2003).

37. “Control over nano-crystallization in turbulent flow in the presence of magnetic fields”,  
S. Kobe, G. Dražic, P.J. McGuinness, T. Meden, E. Sarantopoulou, Z. Kollia and A.C. Cefalas,  
Mater. Sci. Eng. C 23, 811 (2003).

38. “Photodissociation dynamics of DNA bases”,  
E. Sarantopoulou, Z. Kollia, A.C. Cefalas, S. Kobe and Z. Samardžija,  
J. Biolog. Physics 29, 149 (2003).

39. “The challenges of 157-nm nanolithography: surface morphology of silicon-based copolymers”,  
E. Sarantopoulou, Z. Kollia, K. Kocevar, I. Musevic, S. Kobe, G. Dražic, E. Gogolides, P. Argitis, and A.C. Cefalas,  
Mater. Sci. Eng. C 23, 995 (2003).

40. “Removing Foxing stains from old paper at 157 nm”,  
E. Sarantopoulou, Z. Samardžija, S. Kobe, Z. Kollia and A.C. Cefalas,  
Appl. Surf. Sci. 208-209, 311 (2003).

41. “VUV and low energy electron impact study of electronic state spectroscopy of  $CF_3I$ ”,  
N.J. Mason, P. Limao Viera, S. Eden, P. Kendall, S. Pathak, A. Dawes, J. Tennyson, P. Tegeder, M. Kitajima, M. Okamoto, K. Sunohara, H. Tanaka, H. Cho, S. Samukawa, S. V. Hoffmann, D. Newnham and S.M. Spyrou,  
Int. J. Mass Spectr. 223-224, 647 (2003).

42. “High resolution photo-absorption studies of acrylonitrile,  $C_2H_3CN$  and acetonitrile,  $CH_3CN$ ”,

S. Eden, P. Limao-Vieira, P. Kendall, N. J. Mason, S. V. Hoffmann and S. M. Spyrou,  
Eur. Phys. J. D 26, 201 (2003).

## **2. Papers in Proceedings of International and National Conferences**

1. “Recent developments and applications of the state-specific approach to excited states and their dynamics”,  
C.A. Nicolaides,  
In “The Fundamental World of Quantum Chemistry”, vol. II, E.J. Brandas and E.S. Kryachko (Eds.), Kluwer Acad. Publishers, (2003), pp. 93.
2. “Irreversibility in the framework of Hermitian and nonHermitian treatments of resonance states”,  
C.A. Nicolaides,  
in “Irreversible Quantum Dynamics”, F. Benatti and R. Floreanini (Eds.), Lecture Notes in Physics, Springer-Verlag, (2003), pp. 357-370.
3. “Generalization of Laguerre orbitals toward an accurate, concise and practical analytic atomic wave function”,  
Z. Xiong, N.C. Bacalis,  
Proc. Int. Conf. Comput. Meth. in Sci. and Eng. (2003), T.E. Simos (Ed.), World Scientific (2003), pp. 687-691.
4. “Phase transitions in homogeneous biopolymers: basic concepts and methods”,  
N. Theodorakopoulos,  
in “Localization and energy transfer in nonlinear systems”, L. Vazquez, R.S. MacKay and M.P. Zorzano (Eds.), World Scientific (2003), pp. 130-152; cond-mat/0210188.
5. “Critical dynamics of DNA denaturation”,  
N. Theodorakopoulos, M. Peyrard and T. Dauxois,  
in “Localization and energy transfer in nonlinear systems”, L. Vazquez, R.S. MacKay and M.P. Zorzano (Eds.), World Scientific (2003), pp. 239-247; cond-mat/0211287.
6. “Organic Metals Based on Tetrathiafulvalene and 1,2,dithiolene metal complexes”,  
G.A. Mousdis, G.C. Papavassiliou, G.C. Anyfantis, N. Psaroudakis, A. Terzis, K. Raptopoulou, N. Asimomitis, D. Papaxatsis and K. Murata,  
Proc. XIX Greek Conf. on Solid State Physics and Materials Science, Thessaloniki, Greece, September 2003, pp. 311-314 (in Greek).
7. “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, Thessaloniki, Greece, September 2003, pp. 609-612 (in Greek).
8. “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, Thessaloniki, Greece, September 2003, pp. 593-596 (in Greek).

9. "Synthesis and characterization of urea-formaldehyde resins",  
E. Minopoulou, C. Panayiotou, E. Dessipri, A. Paipetis, V. Gionis and G.D. Chryssikos,  
Proc. 4<sup>th</sup> Greek Chem. Eng. Conf. (Patras, May 2003), pp. 309-312 (in Greek)
10. "Analytical electron microscopy of Tm clusters in optical grade CaF<sub>2</sub>",  
G. Drazic, S. Kobe, E. Sarantopoulou and A.C. Cefalas,  
Proc. 39<sup>th</sup> Int. Conf. on Microelectronics, Devices and Materials and the Workshop on  
Embedded Systems, Oct. 1-3, 2003. Ptuj Slovenia, G. Pignatell and A. Zemva (Eds.), I.Sorli,  
Ljubljana (MIDEM-Society for Microelectronics, Electronic Components and Materials)  
2003, pp. 393-398 [COBISS.SI-ID 17814823].
11. "Dispersion of electrogyration in photorefractive Bi<sub>12</sub>GeO<sub>20</sub>",  
N.C. Deliolanis, I.M. Kourmoulis, G. Asimellis, A.G. Apostolidis, A.G. Vanidis, N.A.  
Vainos,  
Proc. XIX Greek Conference on Solid State Physics and Materials Science, Thessaloniki,  
Greece, September 2003, pp. 245-248 (in Greek).
12. "Pulsed laser deposition of thin films: elimination of particulates by second laser  
irradiation",  
E. Gyorgy, I.N. Mihailescu, M. Kompitsas and A. Giannoudakos,  
Proc. 12<sup>th</sup> Intern. School Quant. Electr. "Laser Physics and Applications", 23-27 Sept. 2002,  
Varna BG, SPIE Vol. 5226 (2003), pp. 327-334.
13. "New technique for particulates elimination in pulsed laser deposition of thin films",  
M. Kompitsas, A. Giannoudakos, E. Gyorgy and I.N. Mihailescu,  
Proc. XIX Greek Conference on Solid State Physics and Materials Science, Thessaloniki,  
Greece, September 2003, pp. 237-240 (in Greek).

### **3. Publications in Technical Journals**

1. "Partikel-freie lasergestützte Schichtabscheidung" (Special Journal on Photonics),  
E. Gyorgy, I.N. Mihailescu, M. Kompitsas and A. Giannoudakos,  
Photonik 1, 10 (2003) (in German).
2. "Partikel-freie lasergestützte schichtabscheidung mit einem synchronisierten zwei-laser  
system" (Special Journal on Photonics),  
E. Gyorgy, I.N. Mihailescu, M. Kompitsas and A. Giannoudakos,  
Photonik 2, 48-51 (2003) (in German).

### **4. Patents**

1. "Use of near infrared spectroscopy in composite panel production",  
E. Dessipri, G.D. Chryssikos, V. Gionis, A. Paipetis and G. Kalousis,  
US6, 639,044 B2, Granted 28.10.2003.  
(priority data: 09/886,947 – 21.06.2001, US).
2. "Method for assessing remaining useful life and overall quality of laminating paper",  
E. Dessipri, G.D. Chryssikos, V. Gionis, A. Paipetis and P. Nakos,

International Publication Number WO 02/061 404 A1, Int'l publ. date 22.09.2003.  
(priority data: 0102688.9-05.02.2001, GB).

## **5. Dissertations**

### **a. PhD theses**

1. “Theory and calculations of the electronic correlation in the continuous spectrum. Single and double ionisation”,  
C. Haritos, supervisors Th. Mercouris and C.A. Nicolaidis, University of Patras (2003).

### **b. MSc theses**

1. “Polymer adsorption of the water-germanium interface: Monitoring by ATR spectroscopy in the mid infrared”,  
I. Keskini, supervisor G.D. Chryssikos, University of Athens, Chemistry Department (2003).

2. “Organophilisation of phyllosilicates: A near-infrared investigation of the conformation of aliphatic chains”,  
P. Gavalas, supervisor V. Gionis, University of Athens, Chemistry Department (2003).

3. “Growth of zinc and zinc oxide thin film structures by pulsed laser deposition and study of their optical properties”,  
A. Tsigara, supervisors M. Kompitsas, N. Vainos and K. Kosmidis, University of Ioannina, Dept. of Physics (2003).

4. “Optical properties determination and thickness of NiO thin films grown by Pulsed Laser Deposition (PLD)”,  
E. Tylipaki, supervisors M. Kompitsas and F. Roubani-Kalantzopoulou, National Technical University of Athens, Chem. Eng. Dept. (2003).