

1. Papers in Refereed Journals

1. “Ab initio spin-orbit CI calculation of the potential curves and radiative lifetimes of low-lying electronic states of lead monofluoride”,
K. Das, I.D. Petsalakis, H.P. Lieberman and R.J. Buenker,
J. Chem. Phys. 116, 608 (2002).

2. “On the construction and use of ab initio quantum defect functions for the Rydberg spectra of molecules”,
G. Theodorakopoulos, I.D. Petsalakis and M.S. Child,
Rus. J. Phys. Chem. 76, S95 (2002).

3. “Complex coordinate calculations on predissociating states of diatomic molecules”,
I.D. Petsalakis, G. Theodorakopoulos and R.J. Buenker,
Rus. J. Phys.Chem. 76, S1 (2002).

4. “Potential energy curves and dipole transition moments for excited electronic states of XeKr and ArNe”,
I.D. Petsalakis, G. Theodorakopoulos, H.- P. Liebermann and R.J. Buenker,
J. Chem. Phys. 117, 3639 (2002).

5. “The ab initio potential energy surface and vibration-rotation energy levels of $X^2\Sigma^+$ MgOH”,
J. Koput, S. Carter, K.A. Peterson and G. Theodorakopoulos,
J. Chem. Phys. 117 1529 (2002).

6. “Ab initio calculations on electronic states of CaOH”,
G. Theodorakopoulos, I.D. Petsalakis, H.- P. Liebermann, R.J. Buenker and J. Koput,
J. Chem. Phys. 117, 4810 (2002).

7. “The importance of the diabatic channels to the chemi-ionization reaction $O(^3P) + CH(a^4\Sigma^-) \rightarrow HCO^+(X^1\Sigma^+) + e^-$ ”,
A. Metropoulos,
J. Chem. Phys. 116, 6376 (2002).

8. “An accurate description of the ground and excited states of SiH”,
A. Kalemou, A. Mavridis and A. Metropoulos,
J. Chem. Phys. 116, 6529 (2002).

9. “Properties of doubly excited states of H^- and He associated with the manifolds from $N=6$ to $N=25$ ”,
S.I. Themelis, Y. Komninos and C.A. Nicolaidis,
European Phys. J. D 18, 277 (2002).

10. “Degree of validity of models for the description of doubly excited states of H^- and He”,
C.A. Nicolaidis, S.I.Themelis and Y.Komninos,
J. Phys. B 35, 1831 (2002).

11. “Stationarity coefficients and short-time deviations from exponential decay in atomic resonance states”,
Th. Mercouris and C.A. Nicolaides,
Phys. Rev. A 65, 012112 (2002).
12. “Theory and computation of the matrix elements of the full interaction of the electromagnetic field with an atomic state. Application to the Rydberg and the continuous spectrum”,
Y. Komninos, Th. Mercouris and C.A. Nicolaides,
Phys. Rev. A 65, 043412 (2002).
13. “Electric dipole vs. full interaction in the dynamics of laser excitation of Rydberg wavepackets”,
Th. Mercouris, Y. Komninos and C.A. Nicolaides,
J. Phys. B 35, 1439 (2002).
14. “Attosecond dynamics of electron correlation in doubly excited atomic states”,
C.A. Nicolaides, Th. Mercouris and Y. Komninos,
J. Phys. B 35, L271 (2002).
15. “He⁻²D weakly bound triply excited resonances: Interpretation of previously unexplained structures in the experimental spectrum”,
N.A. Piangos, Y. Komninos and C.A. Nicolaides,
Phys. Rev. A 66, 032721 (2002).
16. “Time asymmetry, nonexponential decay, and complex eigenvalues in the theory and computation of resonance states”,
C.A. Nicolaides,
Int. J. Quantum Chem. 89, 94 (2002).
17. “Physical constraints on nonstationary states and nonexponential decay”,
C.A. Nicolaides,
Phys. Rev. A 66, 022118 (2002).
18. “Time-dependent tunnelling via path integrals. Connection to results of the quantum mechanics of decaying states”,
T.G. Douvropoulos and C.A. Nicolaides,
J. Phys. B 35, 4453 (2002).
19. “Theoretical resolution of the H⁻ resonance spectrum up to the n=5 threshold, III: States of ³P⁰ symmetry”,
M. Bylicki and C.A. Nicolaides,
Phys. Rev. A 65, 012504 (2002).
20. “Thermodynamic instabilities in one dimension: correlations, scaling and solitons”,
T. Dauxois, N. Theodorakopoulos and M. Peyrard,
J. Stat. Phys. 107, 869 (2002).
21. “Electric field induced transitions in water clusters”,

- S. V. Shevkunov and A. Vegiri,
J. Mol. Struct. THEOCHEM 593, 19 (2002).
22. “Translational dynamics of a cold water cluster in the presence of an external uniform electric field”,
A. Vegiri,
J. Chem. Phys. 116, 8786 (2002); Virtual Journal of Biological Physics Research – May 2002.
23. “An improved synthesis of Nickel-bis[5,6-dihydro-1,4-dioxine-2,3-dithiolat], Ni(edo)₂”,
G.C. Papavassiliou, G.A. Mousdis, and G.C. Anyfandis,
Z. Naturforsch. B 57, 707 (2002).
24. “Preparation, structure and optical properties of [CH₃SC(NH₂)₂]₃SnI₅, [CH₃SC(NH₂)₂]₂[HSC(NH₂)₂]₂SnBr₄, [CH₃C₅H₄NCH₃]₂PbBr₃ and [C₆H₅CH₂SC(NH₂)₂]₄Pb₃I₁₀”,
C.P. Raptopoulou, A. Terzis, G.A. Mousdis, and G.C. Papavassiliou,
Z. Naturforsch. B 57, 645 (2002).
25. “Giant Shubnikov-de Haas oscillation and the new metallic state in the organic τ -type conductors”,
T. Konoike, K. Murata, K. Iwashita, H. Yoshino, T. Sasaki, K. Hiraki, T. Takahashi, Y. Nishio, K. Kajita, H. Tajima and G.C. Papavassiliou,
J. Phys. Chem. Solids 63, 1245 (2002).
26. “Electrical and magnetic properties of weak ferromagnetic organic conductor τ -(EDO-S,S-DMEDT-TTF)₂(AuBr₂)_{1+y} (y=0.75) and its analogs”,
H. Yoshino, T. Konoike, K. Murata, G.C. Papavassiliou, T. Sasaki, T. Yamamoto, and H. Tajima,
Mol. Cryst. Liq. Cryst. 376, 171 (2002).
27. “Mysterious thermal properties of τ -(EDO-5,5-DMEDT-TTF)₂(AuBr₂)_{1+y} and τ -(P-S,S-DMEDT-TTF)₂(AuBr₂)_{1+y} (y ~ 0.75)”,
Y. Nishio, K. Nara, K. Kajita, H. Yoshino, K. Murata and G.C. Papavassiliou,
Mol. Cryst. Liq. Cryst. 379, 107 (2002).
28. “Electronic structure of novel cation radical salts in high magnetic fields”,
J.S. Brooks, L. Balikas, K. Storr, B.H. Ward, S. Uji, T. Terashima, C. Terakura, J.A. Schlueter, R.W. Winter, J. Mohtasham, G.L. Gard, G.C. Papavassiliou and M. Tokumoto,
Mol. Cryst. Liq. Cryst. 380, 109 (2002).
29. “Magnetic field-induced density wave transition in a tau-phase organic conductor”,
D. Graf, L. Balicas, J.S. Brooks, C. Mielke and G.C. Papavassiliou,
Int. J. Modern Phys. B 16, 3105 (2002).
30. “Shubnikov- de Haas oscillations in a 2D organic conductor τ -(EDO-S,S-DMEDT-TTF)₂(AuBr₂)_{1+y} (y~0.75)”,
T. Konoike, K. Iwashita, H. Yoshino, K. Murata, T. Sasaki, and G.C. Papavassiliou,
Phys. Rev. B 66, 245308 (2002).

31. "Hybrid molecular materials based upon organic π -donor and inorganic metal complexes: Conducting salts of bis(ethylenediseleno) tetrathiafulvalene (BEST) with octahedral anions hexacyanoferrate (III) and nitroprusside",
M. Clemente-Leon, E. Coronado, J.R. Galan-Maskaros, Gimezez-Saiz, C.J. Gomez-Garcia, J.M.Fabre, G.A. Mousdis, and G.C. Papavassiliou,
J. Solid State Chem. 168, 616 (2002).
32. "Exciton dynamics in synthetic one dimensional semiconductor $C_{10}H_7CH_2NH_3PbI_3$ ",
T. Goto, N. Oshima, G. Mousdis and G.C. Papavassiliou,
Nonlinear Optics 29, 379 (2002).
33. "Origin and properties of the nearly constant loss in crystalline and glassy ionic conductors",
A. Rivera, J. Santamaria, C. Leon, J. Sanz, C.P.E. Varsamis, G.D. Chryssikos and K.L. Ngai,
J. Non-Cryst. Solids 307-310, 1024 (2002).
34. "Medium range order in glass and the germanate anomaly effect",
Y.D. Yiannopoulos, C.P.E. Varsamis and E.I. Kamitsos,
Chem. Phys. Lett. 359, 246 (2002).
35. "Determination of the complex refractive index of materials via infrared measurements",
C.P.E. Varsamis,
Appl. Spectroscopy 56, 1107 (2002).
36. "Molecular dynamics investigation of lithium borate glasses: local structure and ion dynamics",
C.P.E. Varsamis, A. Vegiri and E.I. Kamitsos,
Phys. Rev. B 65, 104203 (2002).
37. "Cation dynamics in lithium borate glasses",
C.P.E. Varsamis, A. Vegiri and E.I. Kamitsos,
J. Non-Cryst. Solids 307-310, 956 (2002).
38. "Optical basicity and refractivity of germanate glasses",
E.I. Kamitsos, Y.D. Yiannopoulos and J.A. Duffy,
J. Phys. Chem. B 106, 8988 (2002).
39. "Cation mass dependence of the nearly constant dielectric loss in alkali triborate glasses",
A.Rivera, C. Léon, C.P.E. Varsamis, G.D. Chryssikos, K.L. Ngai, C.M. Roland and L.J. Buckley,
Phys. Rev. Lett. 88, 125902 (2002).
40. "Chalcogenide vitreous semiconductors doped with metals: properties and applications",
M.S. Iovu, S.D. Shutov, A.M. Andriesh, E.I. Kamitsos, C.P.E. Varsamis, D. Furniss, A.B. Seddon and M. Popescu,
Moldovan J. Phys. Sci. 1, 84 (2002).

41. "Vacuum ultraviolet and ultraviolet emission bands of $\text{LiLuF}_4:\text{Tb}^{3+}$ crystals in the spectral range from 157 to 200nm",
E. Sarantopoulou, Z. Kollia and A.C. Cefalas,
Microelectron. Eng. 61-62, 133 (2002).
42. "He₂ 60-90nm photon source for investigating photodissociation dynamics of potential X-UV resists",
A.C. Cefalas, E. Sarantopoulou, P. Argitis and E. Gogolides,
Microelectron. Eng. 61-62, 157 (2002).
43. "Crystal field splitting of the 4f5d electronic configuration of Pr^{3+} ions in wide band gap fluoride dielectric crystals",
E. Sarantopoulou, Z. Kollia, A.C. Cefalas, V.V. Semashko, R. Yu. Abdulsabirov, A.K. Naumov, S.L. Korableva, T. Szczurek, S. Kobe and P.J. McGuinness,
Opt. Commun. 208, 345 (2002).
44. "Crystal field splitting of highly excited electronic states of the $4f^{n-1} 5d$ electronic configuration of trivalent rare earth ions in wide band gap crystals",
A.C. Cefalas, S. Kobe, Z. Kollia, E. Sarantopoulou,
Crystal Engineering 5, 203 (2002).
45. "Nucleation and crystallization of CaCO_3 in applied magnetic fields",
S. Kobe, G. Drazic, A.C. Cefalas, E. Sarantopoulou and J. Strazisar,
Crystal Engineering 5, 243 (2002).
46. "A non destructive determination of rare earth ion concentration in laser crystals",
S. Kobe, B. Podmiljsak, P.J. McGuinness, E. Sarantopoulou, Z. Kollia, A. Vourdas and A.C. Cefalas,
Crystal Engineering 5, 307 (2002).
47. "X-ray microanalysis of optical materials for 157 nm photolithography",
G. Drazik, E. Sarantopoulou, S. Kobe, Z. Kollia and A.C. Cefalas,
Crystal Engineering 5, 327 (2002).
48. "Temperature and pressure dependence of Raman-active phonons of CaMoO_4 : an anharmonicity study",
E. Sarantopoulou, C. Raptis, S. Ves, D. Christofilos, G.A. Kourouklis,
J. Phys.: Condens. Matter 14, 8925 (2002).
49. "Evaluation of siloxane and polyhedral silsesquioxane copolymers for 157nm lithography",
V. Bellas, E. Tegou, I. Raptis, E. Gogolides, P. Argitis, H. Iatrou, N. Hatzichristidis, E. Sarantopoulou and A.C. Cefalas,
J. Vac. Sci. Technol. B 20, 2902 (2002).
50. "Holographic recording mechanisms of gratings in indium oxide films using 325 helium-cadmium irradiation"
C. Grivas, S. Mailis, R.W. Eason, E. Tzamali and N.A. Vainos,
Appl. Phys. A 74, 457 (2002).

51. "Particulates-free Ta thin films obtained by pulsed laser deposition: the role of a second laser in the laser-induced plasma heating",
E. Gyorgy, I.N. Mihailescu, M. Kompitsas and A. Giannoudakos,
Applied Surface Science 195, 270 (2002).
52. "Time-resolved fluorimetry of two-fluorophore organic systems using artificial neural networks",
S.A. Dolenko, T.A. Dolenko, V.V. Fadeev, I.V. Gerdova and M. Kompitsas,
Opt. Commun. 213, 309 (2002).

2. Papers in Proceedings of International and National Conferences

1. "Theoretical ab initio study of radiative transitions of Xe*-Kr",
I.D. Petsalakis, G. Theodorakopoulos and R.J. Buenker,
Proceedings of the International Seminar on Atomic Interactions and Differential Scattering,
J. Grosser (Ed), St. Andreasberg, Germany, 18-21 March 2002, pp.35-39.
<http://www.ampap.uni-hannover.de/is/>
2. "Potential energy surfaces for MOH systems, M=Be,Mg, Ca",
G. Theodorakopoulos,
Proceedings of the International Seminar on Atomic Interactions and Differential Scattering,
J. Grosser (Ed), St. Andreasberg, Germany, 18-21 March 2002, pp.11-13.
<http://www.ampap.uni-hannover.de/is/>
3. "Fractal singularities and the rate of multiphoton dissociation",
V. Constantoudis and C.A. Nicolaidis,
In "Current Developments in Atomic, Molecular and Chemical Physics with Applications",
M. Mohan (Ed.), Kluwer Plenum (2002), pp. 25-30.
4. "Some organic-inorganic hybrid semiconductors obtained from melts",
G.C. Papavassiliou, I.B. Koutselas, G.A. Mousdis and G.J. Papaioannou,
in "Molecular Low-Dimensional and Nanostructured Materials for Advanced Applications",
A. Graja et al (Eds.), Kluwer Academic Publishers, The Netherlands (2002), pp. 319-322.
5. "Local structure and spectroscopy of metal ions in glass",
E.I. Kamitsos,
in "Structure of Glass", Proc. Int. Symposium on Glass Structure, Athens, Greece, 2001. G.
Kordas, P. Cryssikopoulou (Eds.), Ion Press, Athens, Greece, 2002, pp. 177-194 (invited
review article)
6. "Spectroscopical study of As₂S₃ glasses doped with Dy, Sm and Mn",
M.S. Iovu, S.D. Shutov, A.M. Andriesh, E.I. Kamitsos, C.P.E. Varsamis, A.B. Seddon, D.
Furniss and M. Popescu,
In CAS 2002 Proc., Sinaia, Romania (2002), vol. 2, pp. 283-286.
7. "Optical properties of As₂S₃ glasses doped with Dy, Sm and Mn",
M.S. Iovu, S.D. Shutov, A.M. Andriesh, E.I. Kamitsos, C.P.E. Varsamis, A.B. Seddon, D.
Furniss and M. Popescu,

Proc. 3rd Int. Conf. on “Microelectronics and Computer Science”, Moldova (2002), vol. 1, pp. 66-69.

8. “Spectroscopical study of As₂S₃ and As₂Se₃ 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,

In Extended Abstracts XIII Int. Symp. On non-oxide Glasses and New Optical Glasses”, Pardubice, Czech Rep. (2002), vol. 2, pp. 480-483.

9. “Spectroscopic studies of bulk As₂S₃ glasses and amorphous films doped with Dy, Sm and Mn”,

M.S. Iovu, S.D. Shutov, A.M. Andriesh, E.I. Kamitsos, C.P.E. Varsamis, A.B. Seddon, D. Furniss and M. Popescu,

Proc. XI Feofilov Symposium on “Spectroscopy of crystals activated by rare-earth and transition metal ions”, Kazan, Russia (2002), A.A. Karlyanskii, B.Z. Malkin and S.I. Nikitin (Eds.), SPIE vol. 4766, pp. 97-105.

10. “The magnetic moment of trivalent rare earth ions in ionic laser crystals”,

S. Kobe, B. Podmiljsak, P.J. McGuinness, G. Drazic, E. Sarantopoulou, Z. Kolia and A.C. Cefalas,

Proc. 17th International Workshop on Rare Earth Magnets and their applications, G.C. Hadjipanayis and M.J. Bonder (Eds.), Newark, Delaware, USA (August 18-22, 2002), pp. 228-234.

11. “VUV spectroscopy of nominally pure and rare-earth ions doped LiCaAlF₆ single crystals as promising materials for 157 nm photolithography”,

A.C. Cefalas, E. Sarantopoulou, Z. Kolia, R.Y. Abdulsabirov, S.L. Korableva, A.K. Naumov, V.V. Semashko, S. Kobe and P.J. Mc Guinness,

Proc. XIth Feofilov Symposium “Spectroscopy of crystals activated by rare-earth and transition metal ions”, A. Kaplyanskii, B. Malkin and S. Nikitin (Eds.), Kazan, Russia (24 – 28 Sept. 2001), SPIE Int. Soc. Opt. Eng. vol. 4766, pp. 171-178.

12. “Resists for 157 nm lithography”,

E. Sarantopoulou, Z. Kolia and A.C. Cefalas, P. Argitis and E. Gogolides,

Proc. International Conf. “Lasers 2001”, 3-7 December 2001, Tucson Arizona, USA. (2002), pp. 252-257.

13. “Restoration of historic paper using vacuum ultraviolet lasers”,

E. Sarantopoulou, Z. Kolia and A.C. Cefalas,

Proc. International Conf. “Lasers 2001”, 3-7 December 2001, Tucson Arizona, USA. (2002), pp. 288-293 (invited talk).

3. Chapters in Books

1. “Spectroscopy and applications of diatomic and triatomic molecules assisted by Laser light at 157.6 nm”,

A.C. Cefalas and E. Sarantopoulou,

Invited review article in “Ultraviolet spectroscopy and UV lasers”, P. Misra and M.A. Dubinskii (Eds.), Marcel and Dekker, New York 2002, pp. 191-227.

2. “VUV laser spectroscopy of trivalent rare earth ions in wide band-gap fluoride crystals”, E. Sarantopoulou and A.C. Cefalas, Invited review article in “Ultraviolet spectroscopy and UV lasers”, P. Misra and M.A. Dubinskii (Eds.), Marcel and Dekker, New York 2002, pp. 281-336.

4. Patents

1. “Use of near infrared spectroscopy in composite panel production”, E. Dessipri, G.D. Chryssikos, V. Gionis, A. Paipetis and G. Kallousis, International Publication Number WO 02/051898 A1, International publication data 04.07.2002. (priority data: 00315522.6 -22.12.2000, GB; 0115184.4 - 20.06.2001, GB).

5. Dissertations

a. PhD theses

1. “Low-lying atomic excitation spectrum via global optimization of the wave function (An atomic configuration via generalization of Laguerre type orbitals)”, Z. Xiong, supervisors N.C. Bacalis and M.I. Velgakis, University of Patras, Engineering Science Department (2002).

b. MSc theses

1. “Theoretical calculations on inorganic materials: Structure and spectroscopy” D.G. Liakos, supervisors E.D. Simandiras and A.T. Tsatsas, University of Athens, Dept. of Chemistry (2002).
2. “Spectroscopic study of the interactions between polyethylene glycol (PEG) and nifedipine”, D. Vassou, supervisors V. Gionis and G.D. Chryssikos, University of Athens, Chemistry Department (2002).
3. “Design and development of Surface Enhanced Raman scattering substrates for the vibrational characterization of polymers”, S. Kemidis, supervisors G.D. Chryssikos and V. Gionis, University of Athens, Chemistry Department (2002).
4. “Growth of inorganic composite thin film structures and new material structures by pulsed laser deposition”, G. Papazissimos, supervisors M. Kompitsas and N. Vainos, Universities of Heriot-Watt/ St. Andrews (2002).
5. “Particulate reduction by use of laser methods in material growth using pulsed laser deposition”, L. Athanasekos, supervisors M. Kompitsas and N. Vainos, Universities of Heriot-Watt / St. Andrews (2002).