

# CURRICULUM VITAE

Dr. Georgia Zahariou

## CONTACT INFORMATION

Address : 600 Rue Fenieres B023, Thoiry, France  
Tel. 0033 450415471, 0030 6944607362  
e-mail: [gzahar@ims.demokritos.gr](mailto:gzahar@ims.demokritos.gr)

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## PERSONAL DETAILS

Date of birth: 02.02.1976  
Place of birth: Athens, Greece  
Nationality: Greek  
Spoken Languages: Greek (native), English (very good), French (currently following courses)

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## EDUCATION

**Ph.D.:** Physics, National and Kapodistrian University of Athens and Institute of Material Science, NCSR "Demokritos", 2008.

**Thesis:** *"Spin-Spin interaction between metallic centers and free radicals of bioinorganic systems. Study of Photosynthetic Water Splitting Mechanism"*

**M.Sc.:** Section of Solid State Physics, National and Kapodistrian University of Athens, 2002.

**Thesis:** *"Dielectric Studies of bioactive molecules"*

**Diploma:** Physics, National and Kapodistrian University of Athens, 1999

**Undergraduate Thesis:** *"Structural Study of the protein Concanavalin A"*

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## EMPLOYMENT

2010 – 2011 : Post Doctoral Fellow, Biophysical Lab of Photosynthesis, Department of Chemical Sciences, University of Padova, Italy (Group of Prof. Donatella Carbonera).

- *Study of Artificial Photosynthetic Samples, using the Electron Paramagnetic Resonance (EPR) technique and theoretical modeling with "easyspin" simulation software (manuscript in preparation).*

- *Study of CPTIO spin trap for the NO detection of plants, using the EPR technique.*

2008 – 2010 : Post Doctoral Fellow, Laboratory of EPR spectroscopy and Photosynthesis, Institute of Material Science, National Center of Scientific Research “Demokritos”, Agia Paraskevi, Attiki, Greece (Group of Dr. Vasili Petroulea)

*-Study of the function of natural photosynthetic membranes, using the EPR at X-band and Q-band.*

*-Study of the ISPG protein, using the EPR at X-band*

*-Study of the tetronic acids coordinated with Co(II) and Cu(II) ions, using the X-band EPR technique*

2002 – 2008 : Ph.D Fellow, Laboratory of EPR spectroscopy and Photosynthesis, Institute of Material Science, National Center of Scientific Research “Demokritos”, Agia Paraskevi, Attiki, Greece (under supervision of Dr. Vasili Petroulea)

*-Determination of the interaction between the free radicals and metal complexes, during the Photosynthetic process, using the EPR technique at X-band and Q-band*

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## EXPERIMENTAL TECHNIQUES

1. Thermally Simulated Depolarization Currents (TSDC) spectroscopy
2. Continuous Wave Electron Paramagnetic Resonance (EPR) spectroscopy (X-band and Q-band)
3. Time Resolved EPR spectroscopy
4. Isolation of Photosystem II-enriched thylakoid membranes
5. Calcium depletion from isolated Photosystem II-enriched thylakoid membranes
6. Chlorium depletion from isolated Photosystem II-enriched thylakoid membranes

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## RESEARCH EXPERIENCE

1. Bioactive tetramic and tetronic acids coordinated with Co(II) and Cu(II) metal ions
2. Natural and Artificial Photosystem II
3. ISPG protein
3. Spin -Trap CPTIO
4. Theoretical simulation of the EPR spectra

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## COMPUTING SKILLS

1. Matlab programming
  2. Spectrum simulating using Easyspin
  3. C++ programming
  3. Analysis software Origin
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## TEACHING EXPERIENCE

2010-2011 Undergraduate diploma students assistant supervisor, lab of EPR and Photosynthesis, Department of Chemical Science, University of Padova, Italy

2004 -2009 Undergraduate diploma students assistant supervisor, Institute of Materials Science, NCSR Demokritos, Athens, Greece

1999 - 2003 Teaching assistant in the undergraduate Physics Lab, Section of Solid State Physics, Department of Physics, University of Athens, Greece

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## SCHOLARSHIPS AND AWARDS

1. 11.2002-05.2007 : Scholarship by Institute of Material Science, NCSR "Demokritos" , Athens, Greece

2. 4<sup>th</sup> Poster Award (out of 700) at 14<sup>th</sup> International Congress of Photosynthesis, 23.07.2007-27.07.2007, Glasgow, Scotland (Zahariou G. and Petrouleas V. "Temperature dependence of the  $S_0Y_Z^*(+MeOH)$ ,  $S_1Y_Z^*$  and  $S_2Y_Z^*(+MeOH)$  intermediates states of Photosystem II")

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## CONFERENCES

1. 18<sup>th</sup> Greek Conference of Solid State Physics and Material Physics, 15.09.2002-19.09.2002, Crete Island, Greece

2. 14<sup>th</sup> International Congress of Photosynthesis, 23.07.2007-27.07.2007, Glasgow, Scotland

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## SUMMER SCHOOLS

1. "FEBS/EU Practical Training Course in Role of Metals in Biology", 19/05/2003-29/05/2003, University of Louvain La Neuve, Belgium

2. "European Summer School and Cost Training School", 17/07/2005-24/07/2005, Wiesbaden, Germany

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## SEMINARS

1. "EPR studies of the Oxidation States and the Metalloradical Intermediate States of the Oxygen Evolving Complex of Photosystem II", 26.11.2011, Laboratory of Physics of Complex Matter, EPFL, Lausanne, Switzerland

2. "Study of the Metallo-Radical Intermediate States of the Oxygen Evolving Complex of Photosystem II", 09.07.2010, Department of Chemical Sciences, University of Padova, Italy
  3. "Study of the S<sub>2</sub>TyrZ• metalloradical state of the modified Photosystem II", 30.11.2007, Institute of Materials Physics, NCSR "Demokritos", Athens, Greece
  4. "Study of the S<sub>1</sub>TyrZ• and S<sub>2</sub>TyrZ• metalloradical states of MeOH-containing Photosystem II", 21.12.2005, NCSR "Demokritos", Athens, Greece
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## CONFERENCE PROCEEDINGS

1. Zahariou, G., Ioannidis, N., Sioros, G. and Petrouleas, V. (2007) "The progressive exchange-narrowing of the S<sub>0</sub>Yz•, S<sub>1</sub>Yz• and S<sub>2</sub>Yz• spectra reveals the unperturbed spectrum of TyrZ• in oxygen-evolving PSII preparations: a rapid scanning EPR investigation in the temperature range 4.2-240 K", in *Proceedings 14<sup>th</sup> Congress of Photosynthesis*, Glasgow, Scotland, p.p.547-550
  2. Ioannidis, N., Zahariou, G. and Petrouleas, V. (2007) "Probing tyrosine Z• of the functional Photosystem II at temperatures close to the onset of the S-state transitions. An EPR investigation employing rapid scans", in *Proceedings 14<sup>th</sup> Congress of Photosynthesis*, Glasgow, Scotland, p.p.439-442
  3. Sanakis, Y., Sarrou, J., Zahariou, G. and Petrouleas, V. (2007) "Q-band EPR studies of the S<sub>3</sub> state of the OEC of the Photosystem II" in *Proceedings 14<sup>th</sup> Congress of Photosynthesis*, Glasgow, Scotland, p.p.481-484
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## POSTER PRESENTATIONS

1. Zahariou G. and Petrouleas V. "Does the "doublet" EPR signal, observed in Ca<sup>2+</sup>-depleted Photosystem II preparations, originate from radical spin-coupled pair or from radical-manganese interaction?" European EPR Summer School and COST Training School, 17/07/2005-24/07/2005, Wiesbaden, Germany
  2. Zahariou G. and Petrouleas V. "Temperature dependence of the S<sub>0</sub>Yz•(+MeOH), S<sub>1</sub>Yz• and S<sub>2</sub>Yz•(+MeOH) intermediates states of Photosystem II", 14<sup>th</sup> International Congress of Photosynthesis, 23/07/07-27/07/07, Glasgow, Scotland.
  3. Petrouleas V., Ioannidis N., Zahariou G., Sarrou J., Sioros G., Sanakis Y. "Recent EPR studies of the OEC of Photosystem II. (A) Trapping tyrosyl Z<sup>□</sup> in action. (B) The critical S<sub>3</sub> integer-spin state of the Mn cluster", 14<sup>th</sup> International Congress of Photosynthesis, 23/07/07-27/07/07, Glasgow, Scotland.
  4. Zahariou G., Vassilikou-Dova A. "Dielectric behaviour of bioactive tetramic acid and its complexes with Cu(II) and Co(II)" 18<sup>th</sup> Greece Conference of Solid State Physics- Material Science, 15/09/2002-18/09/2002, Crete Island, Greece
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**PUBLICATIONS**

1. Chrysina M., Zahariou G., Sanakis, Y., Ioannidis N. and Petrouleas V. (2011) "Conformational Changes of the  $S_2Y_2\cdot$  Intermediate of the  $S_2$  to  $S_3$  transition in PSII" *Journal of photochemistry and photobiology B* 104 : 72-79
2. Chrysina M., Zahariou G., Ioannidis N. and Petrouleas V. (2010) "Conversion of the  $g=4.1$  EPR signal to the multiline conformation during the  $S_2$  to  $S_3$  transition of the oxygen evolving complex of Photosystem II" *Biochimica et Biophysica Acta* 1797 : 487-493
3. Xiao Y., Zahariou G., Sanakis Y. and Liu P. (2009) "IspG Enzyme Activity in the Deoxyxylulose Phosphate Pathway: Roles of the Iron-Sulfur Cluster" *Biochemistry* 48: 10483-10485
4. Athanasellis G., Zahariou G., Kikionis S., Igglessi-Markopoulou O. and Markopoulos J. (2008) "Coordination behavior of 3-ethoxycarbonyl tetronic acid towards Cu(II) and Co(II) metal ions" *Bioinorganic Chemistry and Applications* 2008, Article ID 547915, 6 pages
5. Ioannidis N., Zahariou G. and Petrouleas V. (2008) "The EPR spectrum of Tyrosine  $Z\cdot$  and its Decay Kinetics in  $O_2$ - Evolving Photosystem II preparations" *Biochemistry* 47: 6292-6300
6. Zahariou G., Ioannidis N., Sioros G. and Petrouleas V. (2007) "The Collapse of the Tyrosine  $Z\cdot$  - Mn Spin-Spin Interaction above  $\sim 100K$  Reveals the Spectrum of Tyrosine  $Z\cdot$ . An Application of Rapid-Scan EPR to the Study of Intermediates of the Water Splitting Mechanism of Photosystem II" *Biochemistry* 46: 14335-14341
7. Ioannidis N., Zahariou G. and Petrouleas V. (2006) "Trapping of the  $S_2$  to  $S_3$  state Intermediate of the Oxygen-Evolving Complex of Photosystem II" *Biochemistry* 45: 6252-6259
8. Zahariou G.K., Gavrielatos E., Kalogeras I.M., Athanasellis G., Vassilikou-Dova A., Igglessi-Markopoulou O. and Markopoulos J. (2002) "Dielectric studies of bioactive tetramic acid and its complexes with Cu(II) and Co(II)" *Radiation Effects and Defects in Solids* 157: 6, 1057-1062