

CURRICULUM VITAE

Personal Information

Name Petar Haralampiev Lambrev
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Education

1999-2003 **Ph.D. in biophysics**, "St. Kliment Ohridski" University of Sofia, Faculty of Biology, Department of Biophysics and Radiobiology.
Three-year full-time studentship supported by a state grant.
Dissertation title: Application of prompt and delayed chlorophyll fluorescence for analysis of the action of photosynthetic herbicides in intact leaves and thylakoid membranes of pea
Supervisor: Assoc. Prof. Dr. Vassilij Goltsev
Dissertation defended on 2 February 2004; voted 20 out of 20.

1993-1998 **M.Sc. in molecular biology**, "St. Kliment Ohridski" University of Sofia, Faculty of Biology, Department of Biophysics and Radiobiology.
Full-time studentship supported by a state grant.
Specialty: Biophysics and Radiobiology
Overall grade: Very good (5.26 out of 6.00)
Thesis title: Investigation of the action of low and high temperatures on the herbicide-induced changes in the luminescent properties of pea leaves
Supervisor: Assoc. Prof. Dr. Vassilij Goltsev
Thesis defended on 19 July 1998 with grade Excellent (6.00 out of 6.00).

1989-1993 National High School of Mathematics and Natural Sciences
"Acad. L. Chakalov" - Sofia
Specialty: Biotechnology with enhanced English learning
Overall grade: Excellent (5.72 out of 6.00)

Work Experience

- At present** **Research associate**, Bulgarian Academy of Sciences,
Institute of Biophysics
- 2002-2004** **Biologist**, Bulgarian Academy of Sciences, Institute of Biophysics
- 2000-2002** **Collaborative research outside the scope of the Ph.D. thesis:**
- Luminescence characterization of tobacco mutants and lichens (Dr. Detelin Stefanov, Inst. Plant Physiology, Sofia)
 - Prolonged action of residual atrazine concentrations on the photosynthetic characteristics in pea (Acad. Emanuil Karanov, Dr. Sergei Ivanov, Inst. Plant Physiology, Sofia)
 - Effects of DTT applied in vivo on the prompt and delayed fluorescence (Prof. Ivan Yordanov, Inst. Plant Physiology, Sofia)
 - Effects of different light, temperature, and CO₂ regimes on the photosynthesis of bean plants (Dr. Tsonko Tsonev, Maya Lambreva, Inst. Plant Physiology, Sofia)
 - Effects of heavy-metal poisoning in green algae (Dr. Kaloyan Christov, Inst. Plant Physiology, Sofia)
 - Effects of PEG treatment on the fluorescence properties of different barley cultivars (Dr. Georgi Georgiev, Konstantina Kocheva, Inst. Plant Physiology, Sofia)
 - Characterization of herbicide-resistant transgenic tobacco mutants (Dr. Veneta Kapchina, Biological Faculty, Sofia)
 - Resistance to cold stress in tobacco plants transformed to accumulate osmoprotectants (Dr. Dimitar Djilianov, Dr. Daniela Parvanova, AgroBioInstitute, Kostinbrod)

Other experience (part-time)

- 2002-2003** **System administrator**, RIP Internet Café, Sofia
- 2001-2002** **Network administrator**, "St. Kliment Ohridski" University of Sofia,
Faculty of Biology
- 2000** **Computer operator**, PRINTEX ART, Sofia
- 1995-1998** **Self-employed**, VISIA – Petar Lambrev, Sofia (desktop publishing)
- 1994** **Computer operator**, CONTRACT, Sofia
- 1993** **Computer operator**, MEDIPRINT, Sofia

Teaching Experience

(Gained at "St. Kliment Ohridski" University of Sofia, Faculty of Biology)

Practical courses

2002-2003	Biophysical Methods - 160 hours
2001-2002	Photobiology - 30 hours
2001-2002	Mathematical Modelling in Biology - 30 hours
1999-2002	Biophysics and Radiobiology - 380 hours
	<i>Total: 600 hours</i>

Graduate assistantship

2002	M.Sc. thesis assistantship <i>Graduate student:</i> Canko Markov <i>Thesis title:</i> Effects of PSII herbicides on the luminescent characteristics of pea leaves treated <i>in vivo</i>
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Memberships

2003	Faculty Council of the Biological Faculty, "St. Kliment Ohridski" University of Sofia
2001-2003	General Assembly and Student Council of the Biological Faculty, "St. Kliment Ohridski" University of Sofia
2001-	Bulgarian Biomedical Society
2001-	Union of the Physicists in Bulgaria
2000-2003	Joint Research Project, SCOPES 2000-2003 Program, Swiss National Science Foundation

Scientific grants and awards

2003	Best poster presentation award, X Jubilee Scientific Session of the Biological Faculty, "St. Kliment Ohridski" University of Sofia.
2003	Research project grant, National Science Fund, No. K-1303 <i>Title:</i> Transmembrane electrotransfer of anti-tumor agents and DNA <i>Co-ordinator:</i> Assoc. Prof. Dr. Yana Tsoneva
2000	Research project grant, Swiss National Science Foundation, No. 7BUPJ062408.00/1. <i>Title:</i> Heat-induced changes in susceptibility of PS2 to carbamide/triazine and phenol type herbicides as assessed by chlorophyll fluorescence (prompt and delayed) methods <i>Co-ordinator:</i> Prof. Reto J. Strasser.

Professional Skills

Chlorophyll fluorescence analysis

- Registration and interpretation of chlorophyll a fluorescence signals - induction kinetic curves; quenching analysis, quenching recovery; temperature curves
- JIP-test analysis
- Single- and multiple-turnover flash fluorescence spectroscopy
- Quantitative imaging of chlorophyll fluorescence
- Analysis of delayed fluorescence signals - induction curves of sub- and millisecond delayed fluorescence; dark decay kinetics in millisecond, second and minute time-domains; delayed fluorescence temperature curves

Other biophysical and plant physiology methods

- Oxygen electrode measurements in liquid and gas phase
- Photosynthetic gas exchange
- Cell microelectrophoresis
- Absorption spectroscopy – ΔA_{820} (PS1 activity), ΔA_{505} , ΔA_{518}
- Photoinduced light-scattering changes – ΔA_{535}

Biochemical methods

- Isolation of thylakoid membranes
- Determination of chlorophyll and protein concentration, lipid peroxidation products

Other

- General laboratory techniques
- Numerical and statistical data analysis

Languages

Bulgarian (*native*)

English (*spoken and written*)

Russian (*spoken, ability to translate from*)

Computer skills

The software listed is mastered at an advanced or professional () level.*

Programming languages

Visual Basic, Visual Basic for Applications

C, C++

PHP

Experience in developing software for acquisition and processing of spectroscopic data, relation databases, etc.

Image processing and analysis

Adobe Photoshop *

Professional experience in preparing images for press printing.

Word processing, page layout and prepress

Microsoft Word *

Corel Draw *

Adobe PageMaker *

Professional experience in pre-press preparation of books, scientific journals, high-school textbooks, dictionaries, technical literature, etc.

Web publishing

HTML, CSS

Javascript

Macromedia Dreamweaver, Microsoft Frontpage

Macromedia Flash

Data analysis and graphing

Microsoft Excel *

Statsoft Statistica

Microcal Origin, SPSS SigmaPlot

ChemWindow

Databases and bibliography software

MySQL, Microsoft Access

Reference Manager, Endnote

Multimedia

Adobe Premiere, MGI VideoWave and others

Networking

Design, construction, and administration of Windows-based local networks

Publications

1. **Kocheva, K. V., Busheva, M. C., Georgiev, G. I., Lambrev, P. H., Goltsev, V. N.** (2004) Influence of short term osmotic stress on the photosynthetic activity of barley seedlings. *Biol. Plant.* (In press)
2. **Parvanova, D., Popova, A., Zaharieva, I., Lambrev, P., Konstantinova, T., Taneva, S., Atanassov, A., Goltsev, V., Djilianov, D.** (2004) Low temperature tolerance of tobacco plants transformed to accumulate proline, fructans or glycine betaine. Variable fluorescence evidences. *Photosynthetica* **42**: 179-185
3. **Kocheva, K., Lambrev, P., Georgiev, G., Goltsev, V., Karabaliev, M.** (2004) Evaluation of chlorophyll fluorescence and membrane injury in the leaves of barley cultivars under osmotic stress. *Bioelectrochem.* **63**: 121-124
4. **Goltsev, V., Zaharieva, I., Lambrev, P., Yordanov, I., Strasser, R. J.** (2003) Simultaneous analysis of prompt and delayed chlorophyll a fluorescence in leaves during the induction period of dark to light adaptation. *J. Theor. Biol.* **225**: 171-183
5. **Lambrev, P., Ivanov, S., Goltsev, V.** (2003) Effects of prolonged action of sub-herbicide concentrations of atrazine on the photosynthetic function of pea plants. *Compt. Rendu. Acad. Bulg. Sci.* **56**: 59-62
6. **Goltsev, V., Yordanov, I., Stefanov, D., Zaharieva, I., Lambrev, P., Strasser, R. J.** (2001) Simultaneous analysis of variable and delayed chlorophyll fluorescence during induction period in photosynthetic apparatus. In: *Proceedings of the 12th International Congress of Photosynthesis*, CSIRO Publishing, Melbourne
7. **Lambrev, P., Goltsev, V.** (2001) pH dependence of the effects of diuron, atrazine and dinoseb on the luminescent properties of thylakoid membranes. *Bulg. J. Plant Physiol.* **27**: 85-100
8. **Lambrev, P., Goltsev, V.** (1999) Temperature affects herbicide-sensitivity of pea plants. *Bulg. J. Plant Physiol.* **25**: 54-66

Contributions to scientific conferences

(The name of the presenting author is underlined)

1. Goltsev, V., Zaharieva, I., Chernev, P., Lambrev, P., Strasser, R.J. Origin of kinetic components of millisecond delayed chlorophyll fluorescence. *XIII International Congress of Photosynthesis*, 29 August – 3 September 2004, Montreal, Canada
2. Goltsev, V., Lambrev, P., Zaharieva, I., Chernev, P., Strasser, R.J. Kinetics of the delayed chlorophyll a fluorescence registered in milliseconds time range in whole leaves treated with Photosystem II herbicides. *Photosynthesis and Post-genomic era: From Biophysics to molecular Biology, a Path in the Research of Photosystem II*, 25-28 August 2004, Trois-Rivieres, Canada
3. Kocheva, K., Lambrev, P., Georgiev, G., Goltsev, V. The effect of PEG 8000 treatment on chlorophyll fluorescence and membrane injury in the leaves of two barley cultivars. *X Jubilee Scientific Session of the Biological Faculty, "St. Kliment Ohridski" University of Sofia*, 20-21 November 2003, Sofia, Bulgaria
4. Lambrev, P., Goltsev, V., Strasser R. J. The effect of temperature on the sensitivity of Photosystem 2 to the herbicide atrazine applied *in vivo*. *X Jubilee Scientific Session of the Biological Faculty, "St. Kliment Ohridski" University of Sofia*, 20-21 November 2003, Sofia, Bulgaria
5. Slavov, Ch., Lambrev, P., Strasser, R. J., Goltsev, V. Study of dynamics of temperature effect on PS II in barley leaves treated with diuron, atrazine and dinoseb. *X Jubilee Scientific Session of the Biological Faculty, "St. Kliment Ohridski" University of Sofia*, 20-21 November 2003, Sofia, Bulgaria
6. Goltsev, V., Zaharieva, I., Lambrev, P., Chernev, P., Slavov, Ch., Yordanov, I., Strasser, R. J. Analysis of millisecond dark relaxation kinetics of chlorophyll a delayed fluorescence in leaves during the induction period of dark to light adaptation. *13th Balkan Biochemical Biophysical Days and Meeting on Metabolic Disorders*, 12-15 October 2003, Kusadasi, Turkey
7. Lambrev, P., Goltsev, V., Strasser, R. J. Prompt and delayed chlorophyll fluorescence of intact leaves in the presence of photosynthetic herbicides. *13th Balkan Biochemical Biophysical Days and Meeting on Metabolic Disorders*, 12-15 October 2003, Kusadasi, Turkey
8. Kocheva, K., Georgiev, G., Goltsev, V., Lambrev, P., Karabaliyev, M. Evaluation of chlorophyll fluorescence and membrane injury in the leaves of barley cultivars under osmotic stress. *XVII International Symposium on Bioelectrochemistry and Bioenergetics*, 19-24 June 2003, Florence, Italy
- 9.

- Goltsev, V., Zaharieva, I., Lambrev, Maldonado-Rodrigues, R., Strasser, R. J.** Luminescent control of biotic and abiotic stress effects in plants. *European Workshop on Environmental Stress and Sustainable Agriculture*, 7-12 September 2002, Varna, Bulgaria
10. **Lambrev, P., Goltsev, V.** Activity of photosynthetic herbicides in intact pea leaves measured by prompt and delayed chlorophyll fluorescence. *European Workshop on Environmental Stress and Sustainable Agriculture*, 7-12 September 2002, Varna, Bulgaria
 11. **Katerova, Z., Ivanov, S., Lambrev, P., Goltsev, V., Karanov, E.** Effect of residual atrazine concentrations on chlorophyll fluorescence parameters, growth and chlorophyll content of pea plants (*Pisum sativum* L.). *13th Congress of FESPP*, 1-6 September 2002, Heraclion, Greece
 12. **Lambrev, P., Markov, C., Goltsev, V.** Influence of light on the herbicide effect of diuron by in vivo treatment. *9th Scientific Session of the Biological Faculty, "St. Kliment Ohridski" University of Sofia*, 29-30 November 2001, Sofia, Bulgaria
 13. **Goltsev, V., Yordanov, I., Stefanov, D., Zahareiva, I., Lambrev, P., Strasser, R. J.** Simultaneous analysis of variable and delayed chlorophyll fluorescence during induction period in photosynthetic apparatus. *12th International Congress on Photosynthesis*, 18-23 August 2001, Brisbane, Australia
 14. **Lambrev, P., Goltsev, V.** pH-induced changes in the herbicide activity of atrazine, diuron and dinoseb in pea thylakoid membranes. *5th National Congress on Biochemistry, Biophysics and Molecular Biology*, 29-31 March 2001, Sofia, Bulgaria
 15. **Lambreva, M., Tsonev, Ts., Lambrev, P.** Changes in the parameters of chlorophyll fluorescence kinetics in bean plants subjected to different regimes of temperature, light intensity and CO₂ concentration. *5th National Congress on Biochemistry, Biophysics and Molecular Biology*, 29-31 March 2001, Sofia, Bulgaria
 16. **Lambrev, P., Goltsev, V.** On the effect of temperature on herbicide sensibility of the photosynthetic apparatus in pea leaves. *8th Scientific Session of the Biological Faculty, "St. Kliment Ohridski" University of Sofia*, 27-28 May 1999, Sofia, Bulgaria
 17. **Doltchinkova, V., Georgieva, M., Lambrev, P.** Effects of valinomycin on ionic-exchange processes and surface charge density in pea thylakoids. *7th Scientific Session of the Biological Faculty, "St. Kliment Ohridski" University of Sofia*, 29-30 May 1999, Sofia, Bulgaria

Scientific Interests

- **Photosynthesis:** mechanisms of the light reactions; photosynthesis as stress indicator; kinetic and thermodynamic modelling of photosynthetic reactions.
- **Plant stress:** Plant response to environmental stress conditions; acclimation and adaptation mechanisms.
- **Biophysical methods in photosynthesis research:** Chlorophyll fluorescence and delayed fluorescence; use of luminescence methods for quantification of photosynthetic stress responses; use of luminescence methods to study herbicide action; imaging techniques.

References

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