CURRICULUM VITAE

Name: László Kálmán
Born: Dánszentmiklós (Hungary), 1964
Nationality: Hungarian
Education:

-1986. B.S in Chemical Engineering,
-1988. M.S in Chemical Engineering,
-1998. Ph.D. in physics (biophysics) at University of Szeged, Hungary, Supervisor: Prof. Dr. Péter Maróti

Short term postgraduate studies:

-1992. Bowdoin Collage International Infrared Course organized by Hungarian Chemical Society of Hungarian Academy of Sciences.
-1993. Spectoscopic Methods in Energy Converting Membranes, Summer School, Szeged, Hungary;
-1996. Assembly and Organization of the Photosynthetic Apparatus: Photosystems, Antennae and Reaction Centers. Summer School, Rehovot, Israel;

Visits:

-1996. "Balaton" Short term bilateral French-Hungarian fellowship at Centre Genetique Moleculaire, CNRS Gif/Yvette, France at Dr. Pierre Sebban's laboratory (3 weeks),
-1998-2000. Postdoctoral Research Associate at Department of Chemistry & Biochemistry, Arizona State University, Tempe, Arizona, U.S.A. (24 months). Advisor: Prof. Dr. James P. Allen
-2001- present. Faculty Research Associate at Department of Chemistry & Biochemistry, Arizona State University, Tempe, Arizona, U.S.A. (27+ months). Advisor: Prof. Dr. James P. Allen

Positions held:

-1988-90 Research and development engineer - Industry
-1990-92 Department engineer at Institute of Biophysics JATE University, Szeged, Hungary
-1992-98 Teaching and research assistant,
-1998- present Assistant Professor at Department of Biophysics, University of Szeged (on leave as Faculty Research Associate at ASU).

Teaching experience:

- Biophysics for undergraduates (juniors) lecturing, grading; 4 semesters,
- Biophysics lab instructor (junior, senior and graduate level); total of 9 years,
- Medical physics lab instructor (freshmen); total of 9 years,
- Co-author of two laboratory textbooks (medical and biophysics) at JATE University,
- Biological proton pumps : (for graduate students); 2 semesters

Foreign language knowledge: English written, spoken; German written, spoken.
Membership: Hungarian Biophysical Society.
Research interest: electron and proton transfer in photosynthetic bacteria, evolution of oxygenic photosynthesis.
Awards:

- Young Biophysical Scientist Award of the Hungarian Biophysical Society, (1995 and 1997)
- Award for "Development of Teaching Biophysics" of the Hungarian Biophysical Society (1995).
- Young Investigator Award at Gordon Research Conference on Photosynthesis: Biochemical aspects. New England College, Henniker, New Hampshire. U.S.A. (1999).
- "Bolyai János" research fellowship award of the Hungarian Academy of Sciences (2000)

LIST OF PUBLICATIONS

1. **Kálmán L.**, Turzó K. and Maróti P.:Probing reaction centre protonation by electrochromic changes of cofactors in *Rhodobacter sphaeroides*; *Photosynthetica 28 (2)*, 185-194 (1993).

2. **Kálmán L.** and Maróti P.: Stabilization of reduced primary quinone by proton uptake in reaction centers of *Rhodobacter sphaeroides*; *Biochemistry* 33 (31), 9237-9244 (1994).

3. **Kálmán L.**, Sebban P. and Maróti P.: Acid-base titration of isolated reaction centers of *Rhodobacter sphaeroides*; in *Photosynthesis: From light to Biosphere*, Vol. I, 799-802 Ed. Mathis P., Cluwer Academic Publishers (1995).

4. **Kálmán L.**, Gajda T., Sebban P. and Maróti P.: pH-metric Study of Micellular Solutions of Reaction Centers from Photosynthetic Bacteria: Protonatable Groups Equlibrate with the Bulk Phase. *Biochemistry* 36 (15), 4489-4496 (1997).

5. Miksovska J., **Kálmán L.**, Schiffer M., Maróti P., Sebban P. and Hanson D.K.: In Bacterial Reaction Centers Fast Delivery of the Second Proton to Q_B Can be achieved Without L212Glu, *Biochemistry* 36, 12216-12226 (1997).

6. **Kálmán L.** and Maróti P.: Conformation Activated Protonation in Reaction Centers of photosynthetic bacterium Rhodobacter sphaeroides, *Biochemistry* 36, 15269-15276 (1997).

7. **Kálmán L.**, Sebban P., Schiffer M., Hanson D.K. and Maróti P.: Flash Induced Changes in Buffering Capacity of Reaction Centers from Photosynthetic Bacteria Reveal Complex Interaction Between the Quinone Pockets, *Biochim. Biophys. Acta, Bioenergetics* 1365, 513-521 (1998).

8. **Kálmán L.**, LoBrutto R., Allen J. P. and Williams, J. C.: Tyrosine Oxidation in Modified Bacterial Reaction Centers Mirrors Reactions in Photosystem II. *Nature* 402, 696-699, (1999).

9. Narváez A. J.,**Kálmán L.**, LoBrutto R., Allen J. P and Williams, J. C.: Influence of the Protein Environment on the Properties of a Tyrosyl Radical in Reaction Centers from *Rhodobacter sphaeroides*, *Biochemistry* 41, 15253-15258 (2002).

10. **Kálmán L.**, Allen, J. P. and Williams, J. C.: Mimicking the Properties of the Oxigen-Evolving Complex in Purple Bacterial Reaction Centers, *in Photosystem II: The Water/Plastoquinone Oxido-Reductase in Photosynthesis* (Ed. Wydrzynski, T and Satoh, K., Eds.) Chapter 35. *in press* (2004)

11. **Kálmán L.**, Williams, J. C. and Allen J. P.: Proton Release upon Oxidation of Tyrosine in Reaction Centers from *Rhodobacter sphaeroides*, *FEBS Letters* 545*,* 193-198 (2003).

12. **Kálmán L.**, LoBrutto, R., Williams, J. C. and Allen J. P.: Manganese Oxidation in Reaction Centers from *Rhodobacter sphaeroides*, *Biochemistry 42,* 11016-11022 (2003*)*

13. **Kálmán L.**, LoBrutto, R., Narváez, A. J., Williams, J. C. and Allen J. P.: Correlation of Proton Release and Electrochromic Shifts of the Optical Spectrum due to Oxidation of Tyrosine in Reaction Centers from *Rhodobacter sphaeroides*, *Biochemistry* in press (2003).

14. **Kálmán L.**, Narváez, A. J., LoBrutto, R., Williams, J. C. and Allen J. P.: Mechanism of Tyrosine Oxidation in Highly Oxidizing Bacterial Reaction Centers. Submitted to *Biochemistry.*

15. **Kálmán L.**, Haffa, A. L. M., Williams, J. C., Woodbury, N. W. and Allen J. P. Reduction of the Oxidized Bacteriochlorophyll Dimer by Ferrocene is Dependent upon the Driving Force. To be submitted to *Photosynth. Res.*

16. Thielges, M. C., Uyeda, G, **Kálmán L.**, Camara-Artigas, A., Allen J. P and Williams, J. C.: Design of a Manganese Binding Site in Bacterial Reaction Centers. To be submitted to *Proc. Natl. Acad. Sci. USA.*

17. **Kálmán L.**, Williams, J. C. and Allen J. P.: Light-Induced Conformational Changes in the Vicinity of the Primary Donor in Reaction Centers from *Rhodobacter sphaeroides.* To be submitted to *Biochemistry.*

Posters of conferences:

Poster presenter

Kálmán L., Turzó K. and Maróti P.:Probing reaction centre protonation by electrochromic changes of cofactors in *Rhodobacter sphaeroides*; Poster at FESPP Workshop on the Environmental Factors Affecting Photosystem II, 1992. Szeged, Hungary; #2

Kálmán L. and Maróti P.:Proton transfer in Q_A substituted reaction centres of the photosynthetic bacteria. Absracts of the 11th International Biophisics Congress, July 25-30, 1993 Budapest, Hungary; E1.59

Kálmán L. and Maróti P.: Stabilization of reduced primary quinone by proton uptake in reaction centers of *Rhodobacter sphaeroides*. Gordon Research Conference on Protons and Membrane Reactions. 1994. Ventura, California, USA.

Kálmán L. and Maróti P.: Exposure of protonatable amino acids in bacterial reaction centre from purple bacteria.: Biophysics of Photosynthesis: Primary processes in photosynhesis, ESF Conference, 1994. York, England.

Kálmán L., Sebban P. and Maróti P.: Acid-base titration of isolated reaction centers of *Rhodobacter sphaeroides*; Photosynthesys Research: Poster abstracts of the Xth International Congress of Photosynthesis, 1995 Montpellier, France, P-3-4-103

Maróti P. and **Kálmán L.**: Protonation of redox and conformational states of bacterial reaction centers tracked by photoinduced changes in buffering capacity; Gordon Research Conference on Photosynthesis: Biochemical aspects. 1996. New Hampton, New Hampshire. USA.

Maróti P., Osváth Sz. and **Kálmán L.** Proton coupled electron transfer to Q_B in reaction centers of photosynthetic bacteria. 12th International Congress on Photobiology. 1996. Wienna, Austria.

Kálmán L., Williams, J. C. and Allen J. P.: Properties of Bacterial Reaction Centers with Highly Oxidizing Bacteriochlorophyll Dimers: XIth International Congress on Photosynthesis, Budapest, Hungary, 1998, SYS 4 - P5.

Maróti P., Turzó K., **Kálmán L.** and Laczkó, G.: Role of protonation in charge stabilization in reaction centers of photosynthetic bacteria; Proton Solvation and Proton Mobility: Research Workshop of The Israel Science Foundation, 1998, Neve-Ilan, Israel, # 25.

Kálmán L., LoBrutto R., Williams, J. C. and Allen J. P.: Tyrosine Oxidation in Modified Bacterial Reaction Centers Mirrors Reactions in Photosystem II. Gordon Research Conference on Photosynthesis: Biochemical aspects. 1999. New England College, Henniker, New Hampshire. USA.

Allen J. P, **Kálmán L.**, Narváez A. J , LoBrutto R., and Williams, J. C. :Tyrosine oxidation in modified reaction centers from *Rhodobacter sphaeroides* . 12th International Congress on Photosynthesis, Brisbane, Australia (2001)

Conference and invited talks:

Kálmán L. and Maróti P.: Light induced protonational changes in quinone substituted reaction centres isolated from *Rhodobacter sphaeroides*. Laser Laboratory for Fast Reactions in Biology, Department of Biochemistry, George S. Wise Faculty of Life Sciences, Tel Aviv University, Ramat Aviv 69978, Israel (1996).

Kálmán L. and Maróti P.: Conformational changes induced by continuous illumination in bacterial reaction center; Centre de Genetique Moleculaire, CNRS, Gif sur Yvette, France 1996).

Kálmán L., Williams, J. C. and Allen J. P.: Tyrosine Radicals in Bacterial Reaction Centers: 8th Western Photosynthesis Conference, Pacific Grove, California, U.S.A. (1999)

Kálmán L., LoBrutto R., Williams, J. C. and Allen J. P.: Tyrosine Oxidation in Modified Bacterial Reaction Centers Mirrors Reactions in Photosystem II. Young Investigators Talk in Gordon Research Conference on Photosynthesis: Biochemical aspects. New England College, Henniker, New Hampshire. U.S.A. (1999).

Kálmán L., Narváez A. J., LoBrutto R., Williams, J. C. and Allen J. P.: Replacement of the Putative Proton Acceptors Alters the pH-dependent Pattern of Tyrosine Oxidation in Modified Reaction Centers from *Rhodobacter sphaeroides.* 9th Western Photosynthesis Conference, Pacific Grove, California, U.S.A. (2000).

Kálmán L., Narváez A. J., LoBrutto R., Williams, J. C. and Allen J. P: Tyrosine Oxidation in Modified Reaction Centers from *Rhodobacter sphaeroides.* 9th European Society of Photobiology Congress, Lillehammer, Norway, (2001).