Curriculum vitae

Name: Dr. László Nagy

Personal information

Place and date of birth: Kiskunfélegyháza, Hungary, 1957
Marital status: married, three children
Office address: Szeged University, Institute of Medical Physics and Informatics,
6720, Korányi fasor 9. Tel.: (36)-(62)-545-077
E-mail: lnagy@sol.cc.u-szeged.hu
Position: Associate professor

Education and degrees

1. *M. Sc. in biology and chemistry* at József Attila University, Szeged, Hungary, 1982. *Title of thesis:* The photosynthetic properties of Chlorella pyrenoidosa (supervisor: Dr. Tamás Herczeg)
2. *Dr. Univ.* in biophysics at József Attila University, Szeged, Hungary, 1984. *Title of thesis:* The physical-chemical properties of photosynthetic membranes (supervisor: Dr. Endre Lehoczki)
3. *Ph.D.* in biological science at the Hungarian Academy of Sciences, 1999. *Title of thesis:* Structure and functions in photosynthetic reaction centers of prokaryotic organisms (supervisor: Dr. Péter Maróti)

Positions

1. *high school teacher, 1981-1987*: Mikes Kelemen High School, Battonya, Hungary.
2. *assistant professor, 1987-1990:* József Attila University, Department of Biophysics.
3. *associate professor,* University of Szeged (until 2000: József Attila University), Department of Medical Physics and Biophysics (until 2004: Department of Biophysics).

Special training, lab visits

1. Biological Research Centre, Department of Plant Physiology, Szeged, Hungary, (sup. Dr. Magdolna Droppa), UNDP International Training Course on Selected Topics on Modern Molecular Biology, *1990-91, research fellow*
2. Imperial College of Science, Technology and Medicine, Department of Biochemistry, AFRC Photosynthesis Research Group, London, UK (head: Prof. James Barber), *1991-1992, Hungarian Academy of Sciences - Royal Society - Soros Foundation fellowship,*
3. Weizmann Institute of Science, Department of Biological Chemistry Rehovot, Israel (Professor Shmuel Malkin's group), *two short Soros Foundation visits in 1998 and 2000,*
4. CNR Centro Studi Chimico-Fisico Interazione Luce Materia C/O Dip. Chimica, Universita di Bari (Dr. Massimo Trotta's group), *several short visits (few weeks to few months) since 1999, NATO-CNR joint fellowship, TÉT Italian-Hungarian bilateral travel grant, MTA/CNR research cooperation*
5. Kyoto University, Department of Chemistry, Japan (Prof. Masahide Terazima's group), *several short visits (few weeks to few months) in 2002 to 2009, Japan Society for Promotion of Science Fellowship, Kyoto University travel grant, NKTH, TÉT bilateral project*
6. Concordia University, Department of Physics, Montreal, Canada (Prof. Laszlo Kalman's group), *16/04/2007-16/07/2007, visitor scientist*
7. University of Salento, Department of Material Sciences, (Prof. livia Giotta's group), *several short ERASMUS visits (few weeks to few months) in 2007 to 2012,*
8. Universidad Autonóma de San Luis Potosí, Mexico, San Luis Potosí (Alma Gabriela Palestino Escobedo), *08/07/2011-22/07/2011, MTA/CONACYT research cooperation*

9. CEA Saclay, l'Institut de Biologie et de Technologies de Saclay, Franciaország (Prof. Alberto Mezzetti), *COST STM visit*
10. University of Medicine and Pharmacy of Tîrgu Mures, Department of Biophysics (Romania), *10/05/2015-12/05/2015, ERASMUS Fellowship, (Prof. Szakács Julianna)*
11. Gaziosmanpaşa University, Tokat, Törökország (2016, ERASMUS fellowship, Prof. Bilge Cadirchi))

Teaching experience:

Regular courses

- *high school teaching:* biology and chemistry
- *biophysical practicals* for medical students and biology students
- "*Introduction to biophysics*" lectures for biology students
- "*Biophysics*" lectures for biology students
- "*Medical physics*" lectures and seminars for medical students

Special courses:

- "*Biophysics of photosynthesis*" for undergraduate and PhD students
- "*Experimental methods in photosynthesis research*" for undergraduate and PhD students
- "*Bacterial photosynthesis*" for Ph.D. students
- "*Time resolved absorption change measurements*" for Ph.D. students
- *Environmental physics*

International teaching

- "*Functions of quinones and inhibitors in reaction centers of photosynthetic bacteria*" Practical demonstration at "Spectroscopic methods in Energy Converting Membranes", International Summer School, July 1-August 14, 1993, Szeged, Hungary
- "*Flash kinetic study of electron transfer in bacterial reaction centers embedded in chromatophores, phospholipid vesicles and micells*" Practical demonstration at "Structure and dinamics of photosynthetic membranes" International Summer School, August 23-26, - 1998, Szeged, Hungary
- EREASMUS lectures at University of Salento (2007, 2009)
- diploma works for master's degree in the frame of ERASMUS (2 students from University of Salento)
- "*Photosynthetic reaction center protein in hybrid/nanostructures*", EBSA Biophysics Course on Solar Energy, Biological and Biomimetic Solutions, 27-31 Aug 2011 – Szeged, Hungary
- "*Photosynthetic energy conversion in spectroelectrochemical cell*", 2015, ERASMUS summer training (anil Diblen, Turkey)
- "*Removal of pharmaceutical compounds in aqueous effluents by a method of treatment based on the coupling of adsorption and advanced oxidation techniques*", 2015, PhD internship course (Sarrai Abd Elaziz, University of Yahia Fares, Algeria
- "*Advanced biophysics laboratory", "Diploma work*", ERASMUS courses (Greta Urbonaitė, Ieva Bagdanavičiūtė, BSc, Vytautas Magnus University, Lituania

Supervising thesis works*:*

- *more than 50 diploma works, 4 PhD students (graduated)*

International teaching:

- Special courses in summer schools, ERASMUS teaching (lectures, mobility exchanges)
- Co-supervising (diploma works, PhD thesis works): University of Salento, University of Rome „La Sapienza"(***Italy***), University Yahia Fares, Medea (***Algeria***), Gaziosmanpaşa University, Tokat, (***Turkey*)**, Babeș-Bolyai University, Cluj Napoca (***Romania***), Vytautas Magnus University, Kaunas, (***Lithuania***)

Research area:

Research fields: charge separation and stabilization in photosynthetic reaction centers, photosynthetic herbicides, membrane lipids and the photosynthetic electron transport, photothermal processes (photoacoustics, transient grating), bio-nano composite materials, carbon nanotubes

Technics used: biochemical preparative methods for protein purification, steady state and time resolved (in ms and μs time scale) absorption spectroscopy, fluorescence spectroscopy (steady state, fl. polarisation, fluorescence induction, delayed luminescence), flash induced oxygen evolution measurements, photoacoustics, transient grating

Projects (PI or participant)

- Proton gradient in photosynthetic membrane in vitro: generation, detection and influences on the primary photochemical processes, MTA-CNR bilateral project, 2007-2009
- Bacterial Photosynthesis: artificial photosystems and bioremediation. MTA-CNR bilateral project, 2010-12
- SCOPES 2009-2012: "Fabrication and investigation of carbon nanotube based sensors and (bio)nanocomposite materials" SNSF IZ73Z0_128037/1, Joint Research Projects, Swiss National Science Foundation
- Conversion of visible light energy by carbon nanocomposites: energy harvesting and photocatalysis, SWISS-HUNGARIAN COOPERATION PROGRAMME, S/H/7/2/20
- EU COST Photosynthetic proteins for technological applications: biosensors and biochips (PHOTOTECH), 2011-2015, work group leader, member of the management committee
- Conformation and thermodynamics in photosynthetic reaction centers, Hungarian-Japanese bilateral project, 2008-2009
- Projects for education developments: EFOP3.6.1-16, EFOP-3.6.2-16-2017-00005. TÁMOP-4.1.2.A/1-11/1-2011-0013
- GINOP-2.3.2-15-2016-00009 Isotope Climatology and Environmental Research Centre (ICER)
- OTKA (Hungarian): 7 grants in the fields of molecular biology and photosynthesis

Publications (selected):

- Nagy, László and Magyar, Melinda (2022) *No Alternatives to Photosynthesis: From Molecules to Nanostructures.* In: Jeschke, P., & Starikov, E.B. (Eds.). Agricultural Biocatalysis : Theoretical Studies and Photosynthesis Aspects. Taylor&Francis (Jenny Stanford Publishing), New York, pp. 3-39, eBook ISBN 9781003313076, https://doi.org/10.1201/9781003313076
- Sipka G, Nagy L, Magyar M, Akhtar P, Shen J-R, Holzwarth AR, LambrevPH, Garab G. (2022) Light-induced reversiblere organizations in closed Type II reaction centrecomplexes: physiological roles and physicalmechanisms. Open Biol. 12:220297. https://doi.org/10.1098/rsob.220297
- Bíborka Boga, István Székely, Monica Focșan, Monica Baia, Tibor Szabó, László Nagy, Zsolt Pap (2022) Sensor surface *via* inspiration from Nature: The specific case of electron trapping in TiO2/WO3(·0.33H2O) and reaction center/ WO3(·0.33H2O) systems, Applied Surface Science, 572, 151139, 10.1016/j.apsusc.2021.151139
- Kata Hajdu, R. Fabiola Balderas-Valadez, Alessandro Carlino, Vivechana Agarwal, László Nagy (2022) Porous silicon pillar structures/photosynthetic reaction centre protein hybrid for bioelectronic applications, Photochemical & Photobiological Sciences, 21(1), 13–22 (2022), DOI: 10.1007/s43630-021-00121-y
- Tibor Szabo, Radmila Panajotović, Jasna Vujin, Tijana Tomašević-Ilić, Ieva Bagdanavičiūtė, Greta Urbonaitė, Richard Cseko, Klara Hernadi, Gyorgy Varo and Laszlo

Nagy (2021) Photosynthetic reaction-center/graphene biohybrid for optoelectronics, Journal of Nanoscience and Nanotechnology, 21, 2342-2350

Knowledge of languages: English: fluent speaking, writing and reading; Russian and German: poor speaking and reading, Italian: poor speaking and reading

Szeged, 2023. 09. 13.