

Curriculum vitae Prof. Dr. habil. Fred Lisdat

Birth: 20.09.1963, Berlin



a) Higher Education

1984-89 Study: Chemistry, Humboldt University Berlin

1988 Exchange student at the University of St. Petersburg (Russia)

1992 Phd: Dr. rer.nat., "summa cum laude"

Development and characterization of a reference element for the ion-sensitive field effect transistor (ISFET)

Humboldt University Berlin, Nernst Institute of Physical and Theoretical Chemistry

2004 Habilitation: Dr. rer. nat. habil.,

Sensorial detection of signal molecules using redox conversions at protein molecules

Potsdam University, Analytical Biochemistry

2004 Chair of Biosystems Technology at the Technical University of Applied Sciences Wildau

2014-23 Director of the Institute of Life Sciences and Biomedical Technologies Wildau

Since 2019 Study course director of Biosystems Technology/Bioinformatics at TUASW

b) Scientific Interests: biosensors, enzymatic recycling schemes, metabolite sensors, detection of reactive oxygen species and antioxidants, direct protein electrochemistry, label-free detection of DNA and DNA binding molecules and proteins, impedimetric detection of proteins and nucleic acids, artificial protein arrangements on electrodes, electron transfer through protein multilayers, protein engineering, quantum dots on electrodes for sensing applications, biofuel cells, carbon nanostructures, conducting polymers, macroporous electrodes, photobioelectrochemistry,

c) Awards and Scientific Organisations:

1987 Karl Marx Fellowship

1988 Prize of Humboldt University in the Translation Contest

1989 Prize of the Scientific Council at the National Conference of Young Chemists (Oral)

1989 Research Fellowship of the Town Berlin

2000-2021 President of BioHyTec Association Berlin-Brandenburg

2001 Guest Professorship at the University of Tokyo

2003-2017 Scientific Committee of the German Biosensor Symposia

Since 2011 Scientific Advisory Board of DiagnostikNet Association Berlin Brandenburg

2010-14 Scientific Advisory Board of the Centre of Molecular Diagnostics and Bioanalysis

Since 2011 Scientific Committee of the Dresdner Sensor Symposia

2012,14,18,22 Scientific Committee of German "Electrochemistry" Conference Series

Since 2012 Advisory Board of the Journal "Bioelectrochemistry" (Elsevier)

2013-2021 Secretary General of the Bioelectrochemical Society (BES)

2015/2017 Chair Elect/Chair of the Bioelectrochemistry Division of the International Society of Electrochemistry (ISE)

2016 Guest Professorship at the Tokyo University of Agriculture and Technology, Japan

2016 Guest Professorship at the Tokyo University of Technology, Japan

Since 2017 Scientific Committee of the European Biosensor Symposia (EBS)

2018-2024 Head group of the "Fachgruppe Chemo- und Biosensorik" of the Analytical Chemistry Division of the GdCH (Society of German Chemists)

d) Data (July. 2022)

i) Number of publications in peer-reviewed journals: 180

ii) H factor: 45

iii) other publications: 4 patents, 15 book chapters

iv) scientific organisations: Gesellschaft Deutscher Chemiker (GdCh), Dechema e.V., International Society of Electrochemistry (ISE), The Bioelectrochemical Society, Electrochemical Society (ECS), DiagnostikNet Berlin-Brandenburg

v) Conference organization

2013 8. German Biosensor Symposium (8. DBS), Wildau, Germany

2016 9. Workshop on Engineering of Functional Interfaces (ENFI), Wildau, Germany

2011,2012, 2014, 2018,

2020, 2022, 2024 Symposiums organization at the Annual Meeting of the International Society of Electrochemistry (ISE)

2013, 2015, 2017, 2019

2021, 2022 Symposiums organization at the Biannual Symposium of the Bioelectrochemical Society (BES)

2017, 2019 1st and 2nd European Biosensor Symposium, Potsdam/Germany, Florence/ Italy

2018 Organisation Committee of the International Meeting on Chemical Sensors, Vienna, Austria

2021 Chair: 3rd European Biosensor Symposium Online, Wildau, Germany

2024 Chair 19th International Meeting on Electroanalysis (ESEAC 2024)

e) 11 selected publications

1) S. C. Feifel, A. Kapp, R. Ludwig, F. Lisdat, "Nanobiomolecular multiprotein clusters on electrodes for formation of a switchable cascadic reaction scheme", **Angewandte Chemie** 2014, 53 (22), p. 5676-5679

2) Tanne, J., Schäfer, D., Khalid, W., Parak, W.J., and Lisdat, F., Light-Controlled Bioelectrochemical Sensor Based on CdSe/ZnS Quantum Dots. **Anal. Chem.** 83, (2011) 7778.

3) V. Scherbahn, M. T. Putze, B. Dietzel, T. Heinlein, J. J. Schneider, F. Lisdat, "Biofuel cell based on direct enzyme-electrode contacts using PQQ-dependent glucose dehydrogenase / bilirubin oxidase and modified carbon nanotube materials", **Biosensors and Bioelectronics** Vol. (2014) 61, p. 631-638

4) M. Riedel, J. Kartchemnik, M. J. Schöning, F. Lisdat, "Impedimetric DNA detection - Steps forward to sensorial application", **Analytical Chemistry** 86, (2014) p. 7867-7874

5) K. R. Stieger, S. C. Feifel, H. Lokstein, M. Hejazi, A. Zouni and F. Lisdat, "Biohybrid architectures for efficient light-to-current conversion based on photosystem I within scalable 3D mesoporous electrodes", **J. Mater. Chem. A**, Vol. 4, (2016) p. 17009-17017

6) Riedel M., Hölzel S., Hille P., Schörmann J., Eickhoff M. and Lisdat F., "InGaN/GaN nanowires as a new platform for photoelectrochemical sensors - detection of NADH", **Biosensors & Bioelectronics** 94, (2017) 298.

7) Riedel M, Lisdat F., "Integration of enzymes in polyaniline-sensitized 3D inverse opal TiO₂ architectures for light-driven biocatalysis and light-to-current conversion", **ACS Applied Materials & Interfaces**, 10(1) (2018) 267-77.

8) D. Ciornii, M. Riedel, K. R. Stieger, S. C. Feifel, M. Hejazi, H. Lokstein, A. Zouni, F. Lisdat, "Bioelectronic circuit on a 3D electrode architecture: Enzymatic catalysis interconnected with photosystem I", **Journal of the American Chemical Society**, Vol. 139 (46), (2017) p. 16478-16481

9) M. Riedel, J. Wersig, A. Ruff, W. Schuhmann, A. Zouni, F. Lisdat, "A Z-scheme inspired photobio-electrochemical H₂O/O₂ cell with 1V open-circuit voltage combining photosystem II and PbS quantum dots", **Angewandte Chemie**, 2019, International Edition, Vol. 58 (3), p. 801-805

10) M. Riedel, S. Höfs, A. Ruff, W. Schuhmann, F. Lisdat, "A tandem solar biofuel cell: Harnessing energy

from light and biofuels", **Angewandte Chemie**, International Edition, 2020, 60(4), pp. 2078-2083

11) S. Morlock, S. K. Subramanian, A. Zouni, F. Lisdat,

"Closing the green gap of photosystem I with synthetic fluorophores for enhanced photocurrent generation in photobiocathodes", **Chemical Science**, 2023, 14, 1696 - 1708