Wolfgang Drexler, PhD

Academic Record (highlights only)

- 1984 - 1991: *Electrical Engineering* at the Technical University Vienna, Austria (1991: Master of Science; 1995: PhD - obtained with first-class honours)
- 1991 - 1998: *Assistant Professor*, Institute of Medical Physics, University Vienna
- 1998 - 1999: Research Associate @ ***MIT, Cambridge, USA***
- 2000 - 2006: *Associate Professor* of Medical Physics, Centre for Biomedical Engineering and Physics, Medical University Vienna
- 2006-2009: ***Full Professor*** (Distinguished Research Professor) ***of Biomedical Imaging***, ***Head of the Biomedical Imaging Group*** and *Director of Research* at ***Cardiff University, Wales, UK***
- Since October 2009: ***Full Professor*** of Medical Physics and the ***Head of the Center for Medical Physics and Biomedical Engineering*** at the Medical University of Vienna, Austria.
- Since 2010: ***Honorary Distinguished Professor*** Cardiff University, UK

Awards (highlights only – out of 10)

- 2001: Austrian ***START Award*** from the Austrian Science Fund FWF (most prestigious Austrian research award of (€ 1.090.088,-- for scientists under 35 years of age)
- 2007: ***COGAN Award*** from the American Association for Research in Vision and Ophthalmology for important contributions to research in ophthalmology and visual science, Miami, USA
- 2012: ***Edridge Green Medal 2012*****,** The Royal College of Ophthalmologists, Liverpool, U.K.

Research Record – Scientific Esteem

- More than ***190 publications*** in peer reviewed journals, ***h-index: 66 (Scopus), 58 (Web of Sciences)***
- More than ***26000 citations*** **–** more than ***13000 citations*** since 2013
- >70 publications with ***more than 100 citations – 3 papers cited more than 1000 times***
- First, co-author or corresponding author of more than *600 conference proceedings or abstracts*
- Scientific output includes publications in ***Nature Medicine*** (2001) – first author and ***PNAS*** (Proceedings of the National Academy of Sciences of America, 2006) – corresponding author
- (Co)Editor of 12 books, including "Optical Coherence Tomography: Technology and Applications", 1st (2008) and 2nd (2015) edition: more then ***4200 books and downloads sold***; ***> 330.000 chapter downloads*** (2nd edition)
- More than ***230 invited or keynote talks*** since 2000; ***> 60 invited talks*** in the ***last 5 years***
- More than ***€ 14.6 million research grant income*** since 2000; ***> € 6.2 million*** in the ***last 5 years*** – highlights include:
  - FAMOS (***EU Project FP7-STREP; coordinator***; total project costs: € 13.404.446), 2012-2015.
  - ***Christian Doppler Laboratory*** 2002-06 & 2010-12 (total budget: € 1.756.934).
  - "In vivo ultrahigh resolution optical coherence tomography", ***START Award, FWF***, (€ 1.090.088) 2001-2007.

Research grants (selection of on-going projects out of 35; total funding: > **€ 14.600.000)**

1. W. Drexler, R. Leitgeb, M. Pircher "Tomography across the scales" (FWF-SFB coordinator: O. Scherzer; € 3.300.000 requested funding; ***€ 960.000*** MUW funding), 2018-2026
2. W. Drexler, "OCTChip" (H2020-ICT-2015, 688173; ***coordinator***; € 4.889.950; ***€ 513.125*** for MUW), 2016-2019.
3. W. Drexler, R. Leitgeb, "MIB" (H2020-PHC-2015, 667933; € 5.983.808; ***€ 718.725*** for MUW), 2016-2020.
4. R. Leitgeb, W. Drexler, "FBI" (H2020-MSCA-ITN-2016; 721766; € 3.902.716; ***€ 767.802*** for MUW), 2016-2020.
5. W. Drexler, R. Leitgeb, "ESOTRAC" (H2020-ICT-2016-1, 732720; € 4.000.602; ***€ 527.500*** for MUW), 2017-2020.
6. R. Leitgeb, W. Drexler, "MOON" (H2020-ICT-2016-1, 732969; € 3.694.635, ***€ 730.202*** for MUW), 2016-2020.
7. S. Preisser, B. Fischer, W. Drexler, "3D PAT INTRAOP" (FFG BRIDGE; ***€ 405.858***) 2016-2019.
8. P. Müller , R. Hainberger, W. Drexler, "COHESION" (FFG BRIDGE, 848463: € 1.868.923; ***€ 260.700*** for MUW) 2016-2019.

List of Publications

Publications in peer reviewed journals (selection of most relevant ones - out of >193)

1. Erchova I, Tumlinson AR, Fergusson J, White N, Drexler W, Sengpiel F, Morgan JE, „Optophysiological Characterisation of Inner Retina Responses with High-Resolution Optical Coherence Tomography“, ***Sci Rep. 2018*** Jan 29;8(1):1813. doi: 10.1038/s41598-018-19975-x.
2. Chen Z, Rank E, Meiburger KM, Sinz C, Hodul A, Zhang E, Hoover E, Minneman M, Ensher J, Beard PC, Kittler H, Leitgeb RA, Drexler W, Liu M. “Non-invasive multimodal optical coherence and photoacoustic tomography for human skin imaging”, ***Sci. Rep. 2017*** Sci Rep. 2017 Dec 21;7(1):17975. doi: 10.1038/s41598-017-18331-9.
3. Andreana M., Le T., Hansen A., Verhoef A., Jensen O., Andersen P., Slezak P. Drexler W., Fernández A., Unterhuber A.: „Epi-detecting label-free multimodal imaging platform using a compact diode-pumped femtosecond solid-state laser“, *Journal of Bio. Opt.* 22 (9), 091517-1 to 7, 2017
4. Preisser S, Rohringer W, Liu M, Kollmann C, Zotter S, Fischer B, Drexler W. “All-optical highly sensitive akinetic sensor for ultrasound detection and photoacoustic imaging”. *Biomed Opt Express*. 2016 Sep 19;7(10):4171-4186. eCollection 2016 Oct 1. PubMed PMID: 27867723; PubMed Central PMCID: PMC5102516.
5. Liu M, Chen Z, Zabihian B, Sinz C, Zhang E, Beard PC, Ginner L, Hoover E, Minneman M, Leitgeb RA, Kittler H, Drexler W. “Combined multi-modal photoacoustic tomography, optical coherence tomography (OCT) and OCT angiography system with an articulated probe for in vivohuman skin structure and vasculature imaging”. *Biomed Opt Express*. 2016 12;7(8):3390-3402. 2016.
6. Drexler W, Liu M, Kumar A, Kamali T, Unterhuber A, Leitgeb RA. “Optical coherence tomography today: speed, contrast, and multimodality”. *J Biomed Opt.* 2014 Jul;19(7):071412. doi: 10.1117/1.JBO.19.7.071412. PubMed PMID: 25079820.
7. Esmaeelpour M, Kajic V, Zabihian B, Othara R, Ansari-Shahrezaei S, Kellner L, Krebs I, Nemetz S, Kraus MF, Hornegger J, Fujimoto JG, Drexler W, Binder S. “Choroidal Haller's and Sattler's layer thickness measurement using 3-dimensional 1060-nm optical coherence tomography”. ***PLoS One.*** 2014 Jun 9;9(6):e99690. doi: 10.1371/journal.pone.0099690. eCollection 2014.
8. Tudor D, Kajić V, Rey S, Erchova I, Považay B, Hofer B, Powell KA, Marshall D, Rosin PL, Drexler W, Morgan JE. “Non-invasive detection of early retinal neuronal degeneration by ultrahigh resolution optical coherence tomography”. ***PLoS One.*** 2014 Apr 28;9(4):e93916. doi: 10.1371/journal.pone.0093916. eCollection 2014. PubMed PMID: 24776961.
9. Liu M, Schmitner N, Sandrian MG, Zabihian B, Hermann B, Salvenmoser W, Meyer D, Drexler W. “In vivo three dimensional dual wavelength photoacoustic tomography imaging of the far red fluorescent protein E2-Crimson expressed in adult zebrafish”. *Biomed Opt Express*. 2013 Aug 29;4(10):1846-55. doi: 10.1364/BOE.4.001846. eCollection 2013. PubMed PMID: 24156048; PubMed Central PMCID: PMC3799650.
10. Akca BI, Považay B, Alex A, Wörhoff K, de Ridder RM, Drexler W, Pollnau M. “Miniature spectrometer and beam splitter for an optical coherence tomography on a silicon chip”. *Opt Express*. 2013 Jul 15;21(14):16648-56. doi: 10.1364/OE.21.016648.
11. W. Drexler, J. G. Fujimoto, "State-of-the-art retinal optical coherence tomography," ***Prog Retinal Eye Res*** 27 (1), 45-88**,** 2008.
12. L. P. Hariri, Z. Qiu, A. R. Tumlinson, D. G. Besselsen, E. W. Gernere, N. A. Ignatenko, B. Povazay, B. Hermann, H. Sattmann, J. McNally, A. Unterhuber, W. Drexler, J. K. Barton, "Serial Endoscopy in Azoxymethane Treated Mice Using Ultra-High Resolution Optical Coherence Tomography," *Cancer Biol The*r 6(11): 1753-1762, 2007.
13. K. Bizheva, R. Pflug, B. Hermann, B. Povazay, H. Sattmann, E. Anger, H. Reitsamer, S. Popov, J.R. Tylor, A. Unterhuber, P. Qui, P.K. Ahnlet, W. Drexler, “Optophysiology: depth resolved probing of retinal physiology with functional ultrahigh resolution optical coherence tomography”, ***PNAS (Proc. of the National Academy of Sciences of America)*** 103 (13): 5066-5071, 2006.
14. U. Schmidt-Erfurth, R. A. Leitgeb, S. Michels, B. Povazay, S. Sacu, B. Hermann, C. Ahlers, H. Sattmann, C. Scholda, A.F. Fercher, W. Drexler (corresponding author), “Three-dimensional ultrahigh resolution optical cpherence tomography of macular pathologies”, *Invest. Ophthalmol. Vis. Sci.*, 46 (9), 3393-3402, 2005.
15. A. Unterhuber, B. Považay, B. Hermann, H. Sattmann, A. Chavez-Pirson, W. Drexler (corresponding author),” In vivo reintal optical coherence tomography at 1040 nm – enhanced penetration into the choroids”, *Opt. Exp.* 13(9), 3252-3258, 2005.
16. B. Hermann, E. J. Fernández, A. Unterhuber, H. Sattmann, A.F. Fercher, W. Drexler (corresponding author)[1], P. M. Prieto, P. Artal, “Adaptive optics ultrahigh resolution optical coherence tomography”, *Optics Letters* 29 (18), 1-3, 2004.
17. W. Drexler, “Ultrahigh resolution optical coherence tomography”, *Journal Biomed Optics*, 9(1), 47-74, 2004.
18. W. Drexler (corresponding author), H. Sattmann, B. Hermann, T.H. Ko, M. Stur, A. Unterhuber, C. Scholda, O. Findl, M. Wirtitsch, J.G. Fujimoto, A.F. Fercher, “Enhanced visualization of macular pathology using ultrahigh resolution optical coherence tomography”, *Arch Ophthalmol*, 121, 695-706, 2003.
19. W. Drexler, U. Morgner, R.K. Ghanta, J.S. Schuman, F.X. Kärtner, E.P. Ippen, J.G. Fujimoto, “Ultrahigh resolution optical coherence tomography of the human retina,” ***Nature Medicine***, Vol 7, No. 4, 502-507, 2001.
20. W. Drexler, U. Morgner, F. X. Kärtner, C. Pitris, S. A. Boppart, X. D. Li, E. P. Ippen, J. G. Fujimoto, "In vivo ultrahigh resolution optical coherence tomography," *Optics Letters,* Vol. 24, No. 17, 1221-1223, 1999.
21. A.F. Fercher, W. Drexler, C.K. Hitzenberger, T. Lasser, „Optical Coherence Tomography“, ***Reports on Progress in Physics***, 6: 239-303, 2003.
22. W. Drexler, O. Findl, L. Schmetterer, C.K. Hitzenberger and A.F. Fercher, "Eye elongation during accommodation in humans - differences between emmetropes and myopes, " *Investigative Ophthalmology & Visual Science* 39 (11), 2140-2147, 1998.
23. W. Drexler, O. Findl, R. Menapace, G. Rainer, C. Vass, C.K. Hitzenberger, A.F. Fercher, "Partial coherence interferometry: a novel approach to biometry in cataract surgery," *American Journal of Ophthalmology*, Vol. 126, No. 4, 524-534, 1998.
24. W. Drexler, A. Baumgartner, O. Findl, C.K. Hitzenberger, A.F. Fercher, "Biometric investigation of changes in the anterior eye segment during accommodation," *Vision Research*, Vol. 37, No. 19, 2789-2800, 1997.
25. W. Drexler, A. Baumgartner, O. Findl, C.K. Hitzenberger, H. Sattmann, A.F. Fercher, "(Sub)micrometer precision biometry of the anterior segment of the human eye," *Investigative Ophthalmology & Visual Science*, Vol. 38, No. 7, 1304-1313, 1997.
26. A.F. Fercher, W. Drexler C.K. Hitzenberger, “Optical ocular tomography,“ *Neuro-Ophthalmology*, Vol. 18, No. 2, 39-49, 1997.
27. W. Drexler, C.K. Hitzenberger, H. Sattmann, A.F. Fercher, "Measurement of the thickness of fundus layers by partial coherence tomography," *Optical Engineering*, Vol. 34, No. 3, 701-710, 1995.
28. A.F. Fercher, C.K. Hitzenberger, W. Drexler, G. Kamp, H. Sattmann, "In vivo optical coherence tomography," *American Journal of Ophthalmology*, Vol. 116, No. 1, 113-114, 1993.
29. C.K. Hitzenberger, W. Drexler, C. Dolezal, F. Skorpik, M. Juchem, A.F. Fercher, H.D. Gnad, "Measurement of the axial length of cataract eyes by laser Doppler interferometry," *Investigative Ophthalmology & Visual Science*, Vol. 34, 1886-1893, 1993.
30. C.K. Hitzenberger, W. Drexler, A.F. Fercher, "Measurement of corneal thickness by laser Doppler interferometry," *Investigative Ophthalmology & Visual Science,* Vol. 33, 98-103, 1992.