Curriculum Vitae: Christoph K. Hitzenberger, PhD

Last affiliation

Center for Medical Physics and Biomedical Engineering
Medical University of Vienna
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A-1090 Vienna, Austria
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Education

1983: PhD from University of Vienna
1975 – 1983: Study of Physics and Mathematics, University of Vienna
1967 – 1975: High School: Bundesgymnasium Wien VIII
1963 – 1967: Elementary School

Career history

Since Oct. 2022: retired Professor
2008 - 2022: Vice Chair of the Center for Medical Physics and Biomedical Engineering, Medical University of Vienna
2006 - 2022: Program Coordinator: PhD Program “Medical Physics”, Medical University of Vienna
July 2007 – March 2009: "Specially Assigned Professor", Kyoto University
1999 – 2004: Vice Chair of the Department of Medical Physics, Univ. of Vienna
1997 - 2022: Tenured Professor, Department of Medical Physics, Univ of Vienna (now: Center for Medical Physics and Biomedical Engineering, Medical University of Vienna)
1993: Habilitation in Medical Physics
1987 – 1997: Assistant Professor, Dept. of Medical Physics, Univ. of Vienna
1983 – 1987: Post Doc, Department of Solid State Physics, Univ. of Vienna

Research

Principal fields of research: Biomedical Optics. Low coherence interferometry (LCI) and optical coherence tomography (OCT). Pioneering work in these fields since 1987.

Major contributions to these fields: Introduction of the optical A-scan (heterodyne LCI) for *in vivo* intraocular ranging (this “optical A-scan” is the equivalent of a one-dimensional image, the basic element of an OCT scan); measurements of intraocular distances in humans *in vivo* (1990); *in vivo* OCT tomogram of a human retina (1993); numerous applications of LCI in cataract patients (since 1993); participation in the development of the LCI-based "IOL-Master" (Carl Zeiss, Inc.). First demonstration of Spectral Domain (SD) OCT principle (1995); first demonstration of sensitivity advantage of SD OCT (2003). SD OCT is now the worldwide used standard OCT technology due to its 2-3 orders of magnitude higher sensitivity as compared to former time domain OCT.

Main research interests at present: Contrast enhancement and generation techniques in OCT, polarization sensitive OCT, Doppler OCT, multidirectional OCT. *Major contributions to these fields:* development of first PS OCT instrument for simultaneous imaging of retardation and axis orientation of birefringent tissue (2001); development of PS OCT retinal scanner (2004); first high-speed 3D SD PS-OCT retinal scanner (2005); discovery of light depolarization by retinal pigment epithelium (RPE) (2004-2005); numerous studies of clinical PS-OCT applications (ongoing, since 2006). Development of multi-beam OCT for imaging of retinal microvasculature, for quantitative Doppler OCT for absolute flow measurements, and for directionally sensitive OCT (since 2010).

Scientific publications (as author or co-author)

Papers in international, peer reviewed journals: 202

Book chapters: 11

Contributions to national and international conferences: > 400

Invited lectures: > 80

H-Index: 63 / 74 (Web of Science core collection / all data bases), 85 (Google Scholar); total number of citations: > 15000 / > 21000 (Web of Science core / all), > 33000 (Google Scholar)

Patents

US Patents no. 6,137,585; 6,288,784; 6,307,634; 9,279,660; US 10,136,807. WO Patent no. 2010/122118 A1

Several pending patent applications

Awards and Honors (most important)

Österreichisches Ehrenkreuz für Wissenschaft und Kunst 1. Klasse, Republik Österreich: 2017 (Austrian Cross of Honour for Science and Art, First Class)

Fritz J. and Dolores H. Russ Prize, US National Academy of Engineering: 2017

Fellow of SPIE: 2013

Fellow of Optica (former Optical Society of America (OSA)): 2013

"Specially Assigned Professor", Kyoto University (2007 – 2009)

Award of the Hoechst Foundation for the Advancement of Medical Research in Austria: 1992

(Plus, numerous awards for my group members and PhD students)

Service to the Scientific Community

Editorships (5 most important)

Chair, Board of Editors, Optica Publishing (2023-2026)

Editor-in-Chief for *Biomedical Optics Express* (2016-2021)

Advisory Editor for *Biomedical Optics Express* (2010-2015 and since 2022)

Associate Editor for *Optics Express* (2003-2009)

Guest Editor of Biomed. Opt. Express feature issue: BIOMED 2012, BIOMED 2014 (lead)

Conference organization (5 most important)

2020 & 2022: Vice Conference Chair & Conference Chair: Optica BIOMED: Optical Coherence Tomography, Fort Lauderdale, FL

2014 & 2016: Vice Conference Chair & Conference Chair: OSA BIOMED, Optical Tomography and Spectroscopy, Miami & Fort Lauderdale, FL

2009 & 2011: Program Chair & General Chair: European Conferences on *Biomedical Optics ECBO*, Munich, Germany

2008 & 2010: Vice Chair & Conference Chair: Gordon Res. Conference: *Lasers in Medicine and Biology*, Plymouth, NH

1997 – 2023: Program Committee Member: *Coherence Domain Optical Methods in Biomedical Science and Clinical Applications, BiOS*, San Jose & San Francisco, CA

Christoph K. Hitzenberger Vienna, April 2025