BIOGRAPHICAL SKETCH Angelika Unterhuber

PERSONAL INFORMATION

Name: Ass. Prof. Dr. Angelika Unterhuber
ORCID ID: 0000-0002-1000-4393
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HIGHER EDUCATION

2002–2006 University Vienna, Vienna University of Technology, Austria (PhD),
PhD thesis: “Development of compact broadband light sources for ultra-high resolution optical coherence tomography”
1997 Exchange student at University of Pisa, Italy, Prof. Tonelli
1990–1998 Vienna University of Technology, Austria (MSc tech. physics),
Master thesis: “Development and mode locking of tunable, diode pumped Ho3+ lasers”

APPOINTMENTS/ POSITIONS

2015- current Ass. Prof., Center for Medical Physics and Biomedical Engineering
2013- 2015 Postdoc, Center for Medical Physics and Biomedical Engineering
2011–2012 Marie Curie Fellow, Center for Medical Physics and Biomedical Engineering
2010 Senior research scientist, Femtolasers Produktions GmbH, Austria
2006–2009 Research Associate, School of Optometry,Cardiff University, UK,
1998–2002 Product manager, Femtolasers Produktions GmbH, Austria
1997–2005 Laser maintenance (e.g. CO2), laser writing,ILS, Austria
1996–1997 Laser development (1–3 µm) for dentistry, Laser Medical Systems, Austria

FELLOWSHIPS AND AWARDS

► A. Unterhuber, “3D3CSI - Three-dimensional Clinical Coherent Chemically-sensitive Imaging”, Marie Curie Intra-European-Fellowship (IEF), 255178/3D3CSI, € 170.481,20.
► A. Unterhuber et al., “Optical Coherence Tomography at 1040 nm – Enhanced Visualization of the Choroid”, ARVO Abstracts. Invest. Opht. & Visual Science, 2006, Travel grant $ 1.000,00.
► Unterhuber, et al., “Optophysiology using functional ultrahigh-resolution OCT: from in vitro animal to in vivo human measurements”, 6138-16, BIOS2006, Nomination for Pascal Rol Award.
► A. Unterhuber, et al., “Ultrahigh resolution optical coherence tomography: Biomedical application of state of the art broad bandwidth light sources”, LASE 2004, Poster Award $ 500,00.
► A. Unterhuber, et al., “Simultaneous dual wavelength eye tracked ultrahigh resolution retinal and choroidal optical coherence tomography”, Feature of the week/permanent OCT news

SELECTED THIRD PARTY FUNDS/ONGOING PROJECTS

Multimodal, Functional Bio-Photonics Imaging – FBI (ETN)
Multi-modal, Endoscopic Biophotonic Imaging of Bladder Cancer - MIB-H2020.eu

SELECTED COLLABORATION PARTNERS

Prof. Wolfgang Drexler/PhD Mengyang Liu (MUW), multimodal photoacoustic imaging (PAT), Prof. Rainer Leitgeb (MUW), OCT angiography, Prof. Wolfgang Birkfellner (MUW) image reconstruction, data management, Prof. Kishan Dholakia, Raman spectroscopy (St. Andrews), Prof. Peter Andersen multimodal imaging (DTU), Prof. Jürgen Popp, Raman spectroscopy (Jena), Dr. Bernd Sumpf light source and Raman development (Ferdinand Braun Institute)

PROFESSIONAL AND SCHOLARLY ACTIVITIES

Research in the field of multimodal functional biophotonic imaging to transfer novel label-free non-invasive technologies and fusing as well as adapting them for application in the clinical environment. Supervisor of 2 PhD students in the framework of 2 biophotonic imaghing European Union projects.

PUBLICATION SUMMARY

53 peer-reviewed journal articles, 59 peer-reviewed proceedings papers, contribution to 4 book chapters in edited books, >20 oral and poster presentations ; Google Scholar: 3927 citations, h-index 31;

TOP 10 SELECTED PEER-REVIEWED PUBLICATIONS (*most relevant to proposal)

► R. A. Leitgeb, W. Drexler, A. Unterhuber, B. Hermann, T. Bajraszewski, T. Le, A. Stingl, A. F. Fercher, “Ultrahigh resolution Fourier domain optical coherence tomography”, Optics Express 12 (10), 2156-2165 (2004). doi: 10.1364/OPEX.12.002156.

► M. Andreana, T. Le, A.K. Hansen, A.J. Verhoef, O.B. Jensen, P.E. Andersen, P. Slezak, W. Drexler, A. Fernández and A. Unterhuber,” Epi-detecting label-free multimodal imaging platform using a compact diode-pumped femtosecond solid-state laser”, J. Biomed. Opt. 22 (9), 091517 (2017), doi: 10.1117/1.JBO.22.9.091517.

► T. Kamali, B. Povazay, S. Kumar, Y. Silberberg, B. Hermann, R. Werkmeister, W. Drexler, and A. Unterhuber,“ Hybrid single-source online Fourier transform coherent anti-Stokes Raman scattering/optical coherence tomography”, Opt. Lett. 39 (19), 5709-12 (2014), doi: 10.1364/OL.39.005709.

► S. Kumar, T. Kamali, J.M. Levitte, O. Katz B. Hermann, R.M. Werkmeister, B. Povazay, W. Drexler, A. Unterhuber, and Y. Silberberg, “Single-pulse CARS based multimodal nonlinear optical microscope for bioimaging”, Opt. Express 23 (10), 13082-13098 (2015), doi: 10.1364/OE.23.013082.

► M. Liu, B. Maurer, B. Hermann, B. Zabihian, M.G. Sandrian, A. Unterhuber, B. Baumann, E.Z. Zhang, P.C. Beard, W.J. Weninger, and W. Drexler, “Dual modality optical coherence and whole-body photoacoustic tomography imaging of chick embryos in multiple development stages”, Biomed. Optics Express 5 (9), 3150-3159 (2014), doi: 10.1364/BOE.5.003150.

► P. Piksarv, D. Marti, T. Le, A. Unterhuber, L.H. Forbes, M.R. Andrews, A. Stingl, W. Drexler, P.E. Andersen, and K.Dholakia, “Integrated single- and two-photon light sheet microscopy using accelerating beams”, Sci Rep. 7 (1), 1435 (2017), doi: 10.1038/s41598-017-01543-4.

► A. Kumar, T. Kamali, R. Platzer, A. Unterhuber, W. Drexler, and R.A. Leitgeb, “Anisotropic aberration correction using region of interest based digital adaptive optics in Fourier domain OCT”, Biomed. Opt. Express 6 84), 1124-1134 (2015), doi: 10.1364/BOE.6.001124.

► L. P. Hariri, Z. Qiu, A. R. Tumlinson, D. G. Besselsen, E. W. Gernere, N. A. Ignatenko, B. Považay, B. Hermann, H. Sattmann, J. McNally, A. Unterhuber, W. Drexler, and J. K. Barton, “Serial Endoscopy in Azoxymethane Treated Mice Using Ultra-High Resolution Optical Coherence Tomography,” Cancer Biol Ther 6 (2007), doi: 10.4161/cbt.6.11.4852.

► K. Bizheva, A. Unterhuber, B. Hermann, B. Povazay, H. Sattmann, A. F. Fercher, W. Drexler, M. Mei, R. Holzwarth, M. Kempe, B. Zimmermann, “Visualization of brain morphology in an animal model using ultrahigh resolution optical coherence tomography”, Journal Biomed Optics 9(4), 719-724 (2004), doi: 10.1117/1.1756920.

► K. Bizheva, R. Pflug, B. Hermann, B. Povazay, H. Sattmann, P. Qiu, E. Anger, H. Reitsamer, S. Popov, J. R. Taylor, A. Unterhuber, P. Ahnelt and W. Drexler, “Optophysiology: Depth-resolved probing of retinal physiology with functional ultrahigh-resolution optical coherence tomography”, Proc Natl Acad Sci U S A 103(13), 5066-5071 (2006), doi: 10.1073/pnas.0506997103.

► A. Unterhuber, B. Hermann, H. Sattmann, B. Považay, W. Drexler, G. Tempea, V. Yakovlev, C. Schubert, E. M. Anger, P. K. Ahnelt, M. Stur, J. E. Morgan, T. Le, A. Stingl, “Compact, low cost Ti:Al2O3 laser for in vivo ultrahigh resolution optical coherence tomography”, Opt. Lett. 28 (11), 905-907 (2003). doi: 10.1364/OL.28.000905.