

Curriculum Vitae

Name: Fiolka, Reto Birthdate: September 9, 1980
Place of birth: Zurich, Switzerland Nationalities: Swiss and German
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Education:

2009 Ph.D., ETH Zurich
Advanced light microscopy at the nanotechnology group, ETH, Zurich, Switzerland. Supervisor: Prof. Andreas Stemmer
2007 Analytical and quantitative light microscopy course, Woods Hole, MA
2006 M.S. in mechanical engineering, ETH Zurich
Focus: numerical fluid dynamics and nanotechnology

Professional Experience:

2016-present Assistant Professor, department of cell biology, UTSW, Dallas, TX
Focus: advanced 3D microscopy for *in vitro* and *in vivo* imaging
2013-2016 Instructor in the department of cell biology, UTSW, Dallas, TX
Focus: light-efficient and rapid 3D microscopy
2011-2013 Postdoctoral researcher at HHMI Janelia Farm Research Campus, Ashburn, VA. Supervisor: Meng Cui
Focus: adaptive optics
2009-2011 Postdoctoral researcher at HHMI Janelia Farm Research Campus, Ashburn, VA. Supervisor: Mats Gustafsson
Focus: super resolution microscopy
2003 Internship at Contraves Space, Seebach, Switzerland, Department of material technology.
Focus: testing, quality control, and documentation of composite structures for satellites.
2001 Internship at RUAG Aerospace, Dubendorf, Switzerland
Focus: Introduction to basics of manufacturing techniques.

Teaching Experience:

2013-present Microscopy and spectroscopy course, UTSW, Dallas, TX
2008 & 2009 Quantitative and analytical light microscopy course, ETH Zurich
2005 Practical course in viscosimetry at the institute for mechanical systems, ETH, Zurich
2004 Mathematica introductory course for students in mechanical engineering, ETH, Zurich

Honors and recognition:

2012 Plenary talk at the focus on microscopy conference in Singapore
2015 Honorable mention at the Nikon small world photomicrography competition
2016 Microscope images exhibited at "The Art of Systems Biology and Nanoscience" event at the Gerald Peters Gallery, Santa Fe, NM

Peer-reviewed Publications:

1. J. Chu, ..., R. Fiolka, ..., M.Z. Lin. *A bright cyan-excitable orange fluorescent protein facilitates dual-emission microscopy and enhances bioluminescence imaging in vivo*, Nature biotechnology **34**, 760-767, 2016
2. K. Dean, ..., and R. Fiolka. *Diagonally Scanned Light-Sheet Microscopy for Fast Volumetric Imaging of Adherent Cells*, Biophysical Journal **110** (6), 1456-1465, 2016
3. E. S. Welf, M.K. Driscoll, K. Dean, Schaefer C, .. , and R.Fiolka, *Quantitative Multiscale Cell Imaging in Controlled 3D Microenvironments*. Developmental Cell **36**, 1-14, 2016
4. K. Dean, P. Roudot, E. Welf, G. Danuser and R. Fiolka, *Deconvolution-free Subcellular Imaging with Axially Swept Light Sheet Microscopy*, Biophysical Journal **108** (12), 2807-2815, 2015
5. K. Dean and R. Fiolka, *Uniform and scalable light-sheets generated by extended focusing*, Optics Express **22** (21), 26141-26152, 2014
6. R. Fiolka, *Seeing more with structured illumination microscopy*, Methods in Cell Biol. **123**:295-313, 2014
7. K. Wicker, O. Manula, G. Best, R. Fiolka and R. Heintzmann *Phase optimisation for structured illumination microscopy* Optics Express **28** (2) 2032-40, 2013
8. R. Fiolka, *Three-dimensional live microscopy beyond the diffraction limit*, Journal of Optics **15**, 1-9, 2013
9. K. Si, R. Fiolka, and M.Cui, *Breaking the spatial resolution barrier via iterative sound-light interaction in deep tissue microscopy*, Scientific Reports **2**, 748, 2012
10. R. Fiolka, K. Si, and M. Cui, *Complex wavefront corrections for deep tissue focusing using low coherence backscattered light*, Optics Express **20**, 16532-16543, 2012
11. K.Si, R.Fiolka, and M.Cui, *Fluorescence imaging beyond the ballistic regime by ultrasound-pulse-guided digital phase conjugation*, Nature Photonics **6**,657–661, 2012
12. R. Fiolka, L. Shao, E.H. Rego and M.G.L. Gustafsson, *Time-lapse two-color 3D imaging of live cells with doubled resolution using structured illumination*, PNAS **109** (14), 5311-5315, 2012
13. R. Fiolka, K. Wicker, R. Heintzmann, and A. Stemmer, *Simplified approach to diffraction tomography in optical microscopy*, Optics Express **17** (15), 12407-12417, 2009
14. R. Fiolka, M. Beck, and A. Stemmer, *Structured illumination in total internal reflection fluorescence microscopy using a spatial light modulator*, Opt. Lett. **33**, 1629-1631, 2008A.
15. Stemmer, M. Beck and R. Fiolka, *Widefield fluorescence microscopy with extended resolution*, Histochem. Cell Biol. **130** (5), 807-817, 2008R. Fiolka, Y. Belyaev, H. Ewers and A. Stemmer, *Even illumination in total internal reflection fluorescence microscopy using laser light*, Microsc. Res. Tech. **71**, 45-50, 2008
16. R. Fiolka, A. Stemmer, and Y. Belyaev, *Virtual slit scanning microscopy*, Histochem. Cell Biol. **128**, 6, 499-505, 2007

Patent Applications:

R. Fiolka and K. Dean, *UNIFORM AND SCALABLE LIGHT-SHEETS GENERATED BY EXTENDED FOCUSING*, U.S. Application No. 62/155980 and 62/273918

R.Fiolka, *LIGHT-SHEET MICROSCOPE WITH PARALLELIZED 3D IMAGE ACQUISITION*, U.S. Application No. 62/321496

