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EDUCATION

National University of Singapore, Singapore

Aug 2007 - Aug 2011

Ph.D. in Bioengineering, Advisor: Nanguang Chen, Ph.D.

Thesis title: Development of novel high-speed fluorescence sectioning microscopy (focal modulation microscopy) for applications in visualization of thick biological specimens

National University of Singapore, Singapore

Aug 2003 - Apr 2007

B.S. in Bioengineering

Student exchange program at Hong Kong University of Science and Technology, Hong Kong (Spring 2006)

RESEARCH EXPERIENCE

University of California, Davis, USA

Mar 2013 - Current

Postdoctoral Fellowship, Advisor: Vivek J. Srinivasan, Ph.D.

- Development of visible-light spectral domain Optical Coherence Tomography for monitoring oxygen metabolism in neuro-imaging and ophthalmology.
- Development of 1.7 μm Optical Coherence Tomography for deep imaging of subcortical brain regions in the mouse brain.

University of British Columbia, Canada

Feb 2012 - Jan 2013

Postdoctoral Fellowship, Advisor: Shuo Tang, Ph.D.

- Design and development of multiphoton microendoscope for in vivo early cancer detection.
- Development of multimodal and multiscale imaging system combining optical coherence tomography/microscopy and multiphoton microscopy for in vivo label-free imaging of biological tissues.

PUBLICATIONS

1. **S. P. Chong**, M. Bernucci, D. Borycki, H. Radhakrishnan, and V. Srinivasan “**Structural and functional human retinal imaging with a visible light OCT ophthalmoscope**,” *in preparation*
2. D. Borycki, O. Kholiqov, **S. P. Chong**, and V. Srinivasan “**Interferometric Near-Infrared Spectroscopy (iNIRS) for determination of optical and dynamical properties of turbid media**,” in *Optics Express* 24 (1), 329-354, 2016.
3. **S. P. Chong**, C. Merkle, Dylan F. Cooke, T. Zhang, H. Radhakrishnan, and V. Srinivasan “**Non-invasive in vivo imaging of subcortical brain regions in the mouse with 1.7 μm Optical Coherence Tomography**,” in *Optics Letters* 40 (21), 4911-4914, 2015.
4. **S. P. Chong**, C. Merkle, and V. Srinivasan “**Cerebral Metabolic Rate of Oxygen (CMRO₂) Assessed by Combined Doppler and Spectroscopic OCT**,” in *Biomedical Optics Express* 6 (10), 3941-3951, 2015.
5. **S. P. Chong**, C. Merkle, C. Leahy, H. Radhakrishnan, and V. Srinivasan “**Quantitative microvascular hemoglobin mapping using visible light spectroscopic Optical Coherence Tomography**,” in *Biomedical Optics Express* 6 (4), 1429-1450, 2015.

6. M. Shen, Y. Tian, **S. P. Chong**, J. Zhao, H. Zen, and S. Tang “**Quantifying the backscattering of second harmonic generation in tissues with confocal multiphoton microscopy**,” in *Journal of Biomedical Optics* 18 (11), 115003, 2013.
7. **S. P. Chong**, Tom Lai, Y. Zhou and S. Tang “**Tri-modal microscopy with multiphoton and optical coherence microscopy/tomography for multi-scale and multi-contrast imaging**,” in *Biomedical Optics Express* 4 (9), 1584-1594, 2013.
8. G. Gao, **S. P. Chong**, C. J. R. Sheppard, and N. Chen “**Considerations of aperture configuration in focal modulation microscopy from the standpoint of modulation depth**,” in *Journal of the Optical Society of America A* 28 (4), 496-501, 2011.
9. **S. P. Chong**, C. H. Wong, K. F. Wong, C. J. R. Sheppard, and N. Chen “**High-speed focal modulation microscopy using acousto-optical modulators**,” in *Biomedical Optics Express* 1 (3), 1026-1033, 2010.
10. **S. P. Chong**, C. H. Wong, C. J. R. Sheppard, and N. Chen “**Focal Modulation Microscopy: A Theoretical Study**,” in *Optics Letters* 35 (11), 1804-1806, 2010.
11. C. H. Wong, **S. P. Chong**, C. J. R. Sheppard, and N. Chen “**Simple spatial phase modulator for focal modulation microscopy**,” in *Applied Optics* 48 (17), 3238-3243, 2009.

BOOK CHAPTER

1. N. G. Chen, G. Gao and **S.P. Chong** “**Focal Modulation Microscopy: Principle and Techniques**,” in *Molecular Imaging*, Bernhard Schaller (Ed.), ISBN: 978-953-51-0359-2, InTech.

CONFERENCE PRESENTATIONS (SELECTED)

1. **S. P. Chong**, C. Merkle, H. Radhakrishnan, C. Leahy, and V. J. Srinivasan “**Oxygenation mapping with visible wavelength spectroscopic OCT**,” in *SPIE/BIOS Photonics West: Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XIX*, paper number 9312-44 , 07-12 Feb 2015 in San Francisco, California, USA.
2. **S. P. Chong**, C. Merkle, H. Radhakrishnan, C. Leahy, A. Dubra, Y. Sulai, and V. J. Srinivasan “**Optical Coherence Imaging of Microvascular Oxygenation and Hemodynamics**,” in *CLEO 2014: Applications and Technology*, 08-13 Jun 2014 in San Jose, California, USA.
3. **S. P. Chong**, S. Pant, and N. Chen “**Line-scan focal modulation microscopy for rapid imaging of thick biological specimens**,” in *Asia Communications and Photonics Conference and Exhibition*, 13-16 Nov 2011 in Shanghai, China.
4. **S. P. Chong**, G. Gao, C. J. R. Sheppard, and N. Chen “**High-speed focal modulation microscopy using acousto-optical modulators for visualization of thick biological specimens**,” in *SPIE/BIOS Photonics West: Biomedical Optics*, paper number 7904-11, 22-27 Jan 2011, San Francisco, California, USA.
5. **S. P. Chong**, C. H. Wong, K. F. Wong, C. J. R. Sheppard, and N. Chen “**High-speed focal modulation microscopy using acousto-optical modulators for thick biological samples**,” in *4th East Asian Pacific Student Workshop on Nano-biomedical Engineering*, 15-16 Dec 2010, National University of Singapore, Singapore. (Best Presenter Award)
6. **S. P. Chong**, C. H. Wong, K. F. Wong, C. J. R. Sheppard, and N. Chen “**High-speed focal modulation microscopy using acousto-optical modulators**,” in *International Conference on Experimental Mechanics*, 29 Nov - 1 Dec 2010, Kuala Lumpur, Malaysia.

REFERENCES

1. **Vivek Srinivasan**
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Email: vjsriniv@ucdavis.edu

2. **Nanguang Chen**

Associate Professor, Department of Bioengineering, National University of Singapore, Singapore

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3. **Colin J. R. Sheppard**

Professor, Italian Institute of Technology, Italy

Email: colinjrsheppard@gmail.com