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MAJOR RESEARCH INTERESTS

1. Diffuse optical tomography and its applications in medical diagnoses
2. Optical coherence tomography
3. Focal modulation microscopy
4. Nanophotonics
5. Time-resolved spectroscopy
6. Light transport in turbid media

SELECTED PUBLICATIONS

1. E. L. Lim, J. Teng, S. S. Ang; J. Dong, S. Chua, K. Shanmugasundaram, and N. Chen, "The near-diffraction limited operation of submicron-ridge laser arrays," *IEEE Journal of Quantum Electronics* (accepted).
2. Y. Xu, J. Singh, S. Thevapriya and N. Chen, "Two-axis gimbal-less electrothermal micromirror for large angle circumferential scanning," *IEEE Journal of Selected Topics in Quantum Electronics* (accepted).
3. J. Cheng, Y. Zhang, P. Gopalakrishnakone and N. Chen, "Use of the Upside-Down Method to Prepare Porous Polymer Films with Tunable Surface Pore Sizes," *Langmuir* 25 (1), 51–54, (2009)
4. N. Chen, C. H. Wong and C. J. R. Sheppard, "Focal Modulation Microscopy," *Optics Express* 16 (23), 18764-18769 (2008).
5. Y. Xu, J. Singh, C. S. Premachandran, A. Khairyanto, K. W. S. Chen, N. Chen, C. J. R. Sheppard and M. Olivo, "Design and development of a 3D scanning MEMS OCT probe using a novel SiOB package assembly," *Journal of Micromechanics and Microengineering* 18 125005 (2008).
6. W. Mo and N. Chen, "Fast time domain diffuse optical tomography using pseudorandom bit sequences," *Optics Express* 16 (18), 13643-13650 (2008).
7. Q. Zhang, H. W. Soon, H. T. Tian, S. D. Fernando, Y. Ha and N. Chen, "Pseudo Random Single Photon Counting for Time Resolved Optical Measurement," *Optics Express* 16 (17), 13233-13239 (2008).
8. L. LIU, F. Diaz, L. Wang, B. Loiseaux, J. Huignard, C. J. R. SHEPPARD and N. Chen, "Super-resolution along extended depth of focus with binary-phase filters for Gaussian beam". *Journal of the Optical Society of America A - Optics Image Science and Vision* 25 (8), 2095-2101 (2008).
9. J. Singh, J. H. S. Teo, Y. Xu, C. S. Premachandran, N. Chen, R. Kotlanka, M. Olive and C. J. R. SHEPPARD, "A two axes scanning SOI MEMS micromirror for endoscopic bioimaging". *Journal of Micromechanics and Microengineering* 18, 025001(2008).
10. X. Song, D. Wang, N. G. Chen, J. Bai, and H. Wang, "Reconstruction for free-space fluorescence tomography using a novel hybrid adaptive finite element algorithm," *Optics Express* 15 (26), 18300-18317 (2007).
11. L. Liu, C. J. R. Sheppard, and N. G. Chen, "Double-reflection polygon mirror for high-speed optical coherence microscopy," *Optics Letters* 32, 3528-3530 (2007).
12. L. Liu, C. Liu, C. H. Wong, C. J. R. Sheppard, and N. G. Chen, "Binary-phase spatial filter for real-time swept source optical coherence microscopy," *Optics Letters* 32, 2375-2377 (2007).
13. Y. Xu, J. Singh, C. J. R. Sheppard, and N. G. Chen, "Ultra long high resolution beam by multi-zone rotationally symmetrical complex pupil filter," *Optics Express* 15 (10), 6409-6413 (2007)
14. N. G. Chen, "Controlled Monte Carlo method for arbitrary geometries," *Applied Optics* 46 (10), 1597-1603 (2007).
15. C. Liu, N. G. Chen, and C. Sheppard, "Nano-illumination based on self-imaging inside the sub-wavelength metallic slit," *Applied Physics Letters* 90 (1), Art. No. 011501 (2007).