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Research Interests

Fluorescence microscopy and spectroscopy instrumentations, Deep tissue imaging, Functional imaging of cellular systems, Single Protein Dynamics, Bio-micromechanics

Teaching Interests

Measurement and Instrumentation, Biomedical Engineering

Educational Background

Princeton University, Ph.D., 1992
Harvey Mudd College, B.S., 1986

MIT Service

1996-2000, Assistant Professor, Mechanical Engineering, MIT
2000-2005, Associate Professor, Mechanical Engineering and Division of Bioengineering, MIT
2005-Present, Professor, Mechanical Engineering and Division of Bioengineering, MIT

Principal Publications (last 5 years)

1. Teng, S. W., Tan, H. Y., Peng, J. L., Lin, H. H., Kim, K. H., Lo, W., Sun, Y., Lin, W. C., Lin, S. J., Jee, S. H., So, P. T. C., Dong, C. Y., "Multiphoton autofluorescence and second-harmonic generation imaging of the ex vivo porcine eye," *Invest Ophthalmol Vis Sci.*, 47, 1216-24 (2006)
2. Lee, W. C., Huang, H., Feng, G., Sanes, J. R., Brown, E. N., So, P. T. C., Nedivi, E., "Dynamic remodeling of dendritic arbors in GABAergic interneurons of adult visual cortex," *PLoS Biol.*, 4, e29 (2006)
3. Chung, E., Kim, D., So, P. T. C., "Extended resolution wide-field optical imaging: objective-launched standing-wave total internal reflection fluorescence microscopy," *Opt Lett.*, 31, 945-7 (2006)
4. Srivastava, A., Metaxas, A. C., So, P. T. C., Matsudaira, P., Ehrlich, D., Georgiou, G. E., "Numerical simulation of DNA sample preconcentration in



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FACULTY CLOUD

- microdevice electrophoresis," Electrophoresis, 26, 0000-0000 (2005)
5. So, P. T. C., Ragan, T., Bahlmann, K., Huang, H., Lee, R. T., "High Throughput Two-Photon Tissue Image Cytometry," Reviews in Fluorescence, 325-348 (2005).
 6. Laiho, L. H., Pelet, S., Hancewicz, T. M., Kaplan, P. D., So, P. T. C., "Two-photon 3-D mapping of tissue endogenous fluorescence species based on fluorescence emission spectra," J. Biomed. Opt., 10, 024016 (2005).
 7. Huang, H., Sylvan, J., Jonas, M., Barresi, R., So, P. T. C., Campbell, K. P., Lee, R.T., "Cell stiffness and receptors: evidence for cytoskeletal subnetworks," Am J Physiol Cell Physiol., 288, C72-80 (2005).
 8. Buehler, C., Kim, K. H., Greuter, U., Schlumpf N., So, P. T. C. So, "Single-photon counting multi-color multi-photon fluorescence microscope," J. of Fluorescence, 15, 41-51 (2005)**.
 9. Buehler, C., Dreessen, J., Mueller, K., So, P. T. C., Schilb, A., Hassiepen, U., Stoeckli, K. A., Auer, M., "Multi-photon excitation of intrinsic protein fluorescence and its application to pharmaceutical drug screening," Assay Drug Dev Technol., 3, 155-67 (2005).
 10. Dong, C. Y., Yu, B., Kaplan, P. D., So, P. T. C., "Performances of high numerical aperture water and oil immersion objective in deep-tissue, multi-photon microscopic imaging of excised human skin," Microsc Res Tech., 63, 81-6 (2004).
 11. Masters, B. R., So, P. T. C., "Antecedents of two-photon excitation laser scanning microscopy," Microsc Res Tech., 63, 3-11 (2004).
 12. Masters, B. R., So, P. T. C., Buehler, C., Barry, N., Sutin, J. D., Mantulin, W. W., Gratton, E., "Mitigating thermal mechanical damage potential during two-photon dermal imaging," J. Biomed. Opt., 9, 1265-70 (2004).

Scientific and Professional Societies

American Association for the Advancement of Science, American Physical Society, Biophysical Society,
The Society of Photo-Optical and Instrumentation Engineers

Honors and Awards

Esther and Harold E. Edgerton Chair, MIT, 1999-2002.
Ruth and Joel Spira Award for Distinguished Teaching, MIT, 2003
Frank E. Perkins Award for Excellence in Graduate Advising, MIT, 2004

Institutional and Professional Service (last 5 years)

NIH, Review Panel, SBIR Programs, SSS-7, 1997- present.
NIH, Review Panel, Shared Instrument Program, 1999- present.
Editorial board Member: Journal of Fluorescence, 2002-present.
SPIE Symposium, Two-Photon Microscopy Program Chair, 2000-present.
Gordon Research Conference, "Laser in Medicine and Biology," Vice-Chair Elect 2006, Chair Elect 2008.

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