

## Fu-Jen Kao

Professor

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### Academic background:

1983 Bachelor of Science Bachelor of Science (BA) in Physics at the National Taiwan University

1988 Master of Science in Physics at Cornell University

1993 Doctor of Philosophy (PhD) in Physics at Cornell University

### Professional career:

1993-2002: Associate Professor, Department of Physics, National Sun Yat-sen University

2002-2003: Professor, Department of Physics, National Sun Yat-sen University

2003-2006: Professor, Institute of Electro-Optical Engineering, National Sun Yat-sen University

2003-2004: Chief of Research and Planning, Office of Research Affairs, National Sun Yat-sen University

2004-2011: Director, Institute of Biophotonics, National Yang-Ming University

2006-2011: Associate Dean, Office of Research and Development, National Yang-Ming University

2010-2011: Director, Incubation Center, National Yang-Ming University

2004- present: Professor, Institute of Biophotonics, National Yang-Ming University

2012-2014: Vice President and the Director of International Affairs of the Physics Society of ROC, Taiwan

2014- present: President of the Physics Society of ROC, Taiwan

### Research interests:

Physics, Optics, Biophotonics

### Main publications: (Since 2010)

1. Wen-Jie Lin, Chih-Yung Yang, Ying-Chih Lin, Meng-Chun Tsai, Chu-Wen Yang, Chien-Yi Tung, Pei-Yun Ho, Fu-Jen Kao and Chi-Hung Lin, Phafin2 modulates the structure and function of endosomes by a Rab5-dependent mechanism, *Biochemical and Biophysical Research Communications* **391**, p1043-1048 (2010).
2. Vladimir Ghukasyan, Chih-Chun Hsu, Chia-Rung Liu, **Fu-Jen Kao\*** and Tzu-Hao Cheng, Fluorescence lifetime dynamics of eGFP in protein aggregates with expanded polyQ, *J. Biomed. Opt.* **15**, 016008 (2010).
3. Ping-Chun Huang, Tai-Yu Chiu, Li-Chun Wang, Hsiao-Chuan Teng, Fu-Jen Kao and De-Ming Yang, Visualization of the Orai1 Homodimer and the Functional Coupling of Orai1-STIM1 by Live-Cell Fluorescence Lifetime Imaging, *Microscopy and Microanalysis* **16**, 313-326 (2010).
4. Xin Li, **Fu-Jen Kao\***, Chien-Chin Chuang, and Sailing He, "Enhancing fluorescence of quantum dots by silica-coated gold nanorods under one- and two-photon excitation," *Opt. Express* **18**, 11335-11346 (2010)
5. Yung-En Kuo, Cheng-Chi Wu, Yoichiro Hosokawa, Yasuyo Maezawa, Kazunori Okano, Hiroshi Masuhara, Fu-Jen Kao, Local stimulation of cultured myocyte cells by femtosecond laser-induced stress wave, *Appl Phys A* 101: 597–600 (2010).
6. Tatyana Buryakina, Pin-Tzu Su, Vladimir Gukassyan, Wan-Jr Syu, and **Fu-Jen Kao\***, "Monitoring cellular metabolism of 3T3 upon wild type E. coli infection by mapping NADH with FLIM", *Chinese Opt. Lett.* **8**, 931-933 (2010)
7. Thilo Dellwig, Matthew R. Foreman, and **Fu-Jen Kao\***, "Coherent Long-distance Signal Detection Using Stimulated Emission: a Feasibility Study", *Chinese Journal of Physics* **48**, 873-884 (2010).

8. Aaron D. Slepko, Andrew Ridsdale, Trista Ning, Joe Wang, Adrian F. Pegoraro, Douglas J. Moffatt, John P. Pezacki, Fu-Jen Kao and Albert Stolow, Forward-Collected FLIM-CARS Microscopy, *J. Biomed. Opt.*, 16(02), 021103 (2011).
9. Po-Yen Lin, Hong-Chou Lyu, Chin-Ying Stephen Hsu, Chia-Seng Chang, and **Fu-Jen Kao\***, Imaging carious dental tissues with multiphoton fluorescence lifetime imaging microscopy, *Biomedical Optics Express* 2, pp. 149-158 (2011). <http://www.opticsinfobase.org/boe/abstract.cfm?uri=boe-2-1-149>.
10. R. Hristu, S.G. Stanciu, S.J. Wu, F.-J. Kao, Optical beam induced current microscopy of photonic quantum ring lasers, *Appl Phys B*, DOI 10.1007/s00340-011-4441-3 (2011)
11. R. Hristu, S. G. Stanciu, F.-J. Kao and G. A. Stanciu, Two-photon excited photoluminescence of photonic quantum ring laser structures *Appl Phys B*, DOI: 10.1007/s00340-011-4813-8 (2011).
12. Thilo Dellwig, Po-Yen Lin and **Fu-Jen Kao\***, Long-distance Fluorescence Lifetime Imaging Using Stimulated Emission, *J. Biomed. Opt.* 17, 011009 (2012).  
<http://dx.doi.org/10.1117/1.JBO.17.1.011009>.
13. Po-Yen Lin, Shin-Shian Lee, Chia-Seng Chang, and **Fu-Jen Kao\***, Long working distance fluorescence lifetime imaging with stimulated emission and electronic time delay, *Optics Express*, Vol. 20, Issue 10, pp. 11445-11450 (2012), <http://dx.doi.org/10.1364/OE.20.011445> Also selected for the [Virtual Journal for Biomedical Optics \(VJBO\)](#), Editor Andrew Dunn and Anthony Durkin, Vol. 7, Iss. 7, June 25, 2012.
14. Tatyana Yu. Buryakina, Pin-Tzu Su, Wan-Jr Syu, C. Allen Chang, Hsiu-Fang Fan, **Fu-Jen Kao\***, Metabolism of HeLa Cells Revealed through Autofluorescence Lifetime upon Infection with enterohemorrhagic *Escherichia coli*, *J. Biomed. Opt.*, Vol 17(10), 101503 (May 21, 2012). doi:10.1117/1.JBO.17.10.101503.
15. Nirmal Mazumder, Jianjun Qiu, Matthew R. Foreman, Carlos Macías Romero, Chih-Wei Hu, Han-Ruei Tsai, Peter Török, and **Fu-Jen Kao\***, Polarization-resolved Second Harmonic Generation Microscopy with a four-channel Stokes-polarimeter, *Optics Express*, Vol. 20, Iss. 13, pp. 14090–14099 (2012), <http://dx.doi.org/10.1364/OE.20.014100> . Also selected for the [Virtual Journal for Biomedical Optics \(VJBO\)](#), Editor Andrew Dunn and Anthony Durkin, Vol. 7, Iss. 8, August 2, 2012.
16. Jianhong Ge, Cuifang Kuang, Shin-Shian Lee, and **Fu-Jen Kao\***, Fluorescence lifetime imaging with pulsed diode laser enabled stimulated emission, *Optics Express*, Vol. 20, Iss. 27, pp. 28216–28221 (2012). Also selected for the [Virtual Journal for Biomedical Optics \(VJBO\)](#), Editor Andrew Dunn and Anthony Durkin, Vol. 8, Iss. 1, February 4, 2013.
17. Gitanjal Deka, Wei-Wen Wu, **Fu-Jen Kao\***, *In vivo* Wound Healing Diagnosis with Second Harmonic and Fluorescence Lifetime Imaging, *J. Biomed. Opt.* 18(6), 061222, 2013
18. N. Mazumder, J. Qiu, M. R. Foreman, C. M. Romero, P. Török, and **F.J. Kao\***, “Stokes vector based polarization resolved second harmonic microscopy of starch granules,” *Biomed. Opt. Express* 4 (4), 538-547, 2013.
19. Nirmal Mazumder, Rodney K. Lyn, Raganath Singaravelu, Andrew Ridsdale, Douglas J. Moffatt, Chih-Wei Hu, Han-Ruei Tsai, John McLauchlan, Albert Stolow, **Fu-Jen Kao\***, John Paul Pezacki, [Fluorescence Lifetime Imaging of Alterations to Cellular Metabolism by Domain 2 of the Hepatitis C Virus Core Protein](#), *PLoS One* 8(6), e66738, 2013.
20. [Sheng-Fan Wang](#), [Yueh-Ching Chou](#), [Nirmal Mazumder](#), [Fu-Jen Kao](#), [Leslie D. Nagy](#), [F. Peter Guengerich](#), [Cheng Huang](#), [Hsin-Chen Lee](#), [Ping-Shan Lai](#), [Yune-Fang Ueng](#), [7-Ketocholesterol induces P-glycoprotein through PI3K/mTOR signaling in hepatoma cells](#), *Biochemical Pharmacology* 86, 548-560, 2013.
21. I-Te Hsieh, Cheryl Ching-Hsiu Yang, Chun-Yu Chen, Guo-She Lee, Fu-Jen Kao, Kuan-Liang Kuo, Terry Bo-Jau Kuo, Uninterrupted Wireless Long-Term Recording of Sleep Patterns and Autonomic Function in Freely Moving Rats, *J. of Medical and Biological Engineering* 33( 1), 79-86, 2013.
22. Po-Yen Lin, Yi-Cheng Lin, Chia-Seng Chang, **Fu-Jen Kao\***, Fluorescence Lifetime Imaging Microscopy with Sub-diffraction Limited Resolution, *Japanese Journal of Applied Physics* 52(2), pp. 028004-3, 2013.
23. Nirmal Mazumder, Chih-Wei Hu, Jianjun Qiu, Matthew R. Foreman, Carlos Macías Romero, Peter Török, and **Fu-Jen Kao\***, Revealing molecular structure and orientation with Stokes vector resolved second harmonic generation microscopy, *Methods*, 2013 (<http://dx.doi.org/10.1016/j.ymeth.2013.07.019> ).

24. Kazunori Okano, Ai Matsui, Yasuyo Maezawa, Ping-Yu Hee, Mie Matsubara, Hideaki Yamamoto, Yoichiroh Hosokawa, Hiroshi Tsubokawa, Yaw-Kuen Li, **Fu-Jen Kao**,\* and Hiroshi Masuhara, In situ laser micropatterning of proteins for dynamically arranging living cells, Lab on a Chip 13 (20), 4078-4086, 2013.
25. Gitanjal Deka, Kazunori Okano, and **Fu-Jen Kao**\*, Dynamic photo-patterning of cells in situ by Q-switched Nd:YVO4 laser, J. Biomed. Opt., 19 (1), 011012, 2014.
26. Ming-Kuan Lu<sup>1</sup>, Feng-Chen Chang<sup>1</sup>, Wen-Zhe Wang<sup>1</sup>, Chih-Cheng Hsieh<sup>2\*</sup>, and Fu-Jen Kao\*, Compact LED lighting Ring for Video-Assisted Thoracic Surgery, J. Biomed. Opt., 2014 (accepted).

#### **Books**

1. Peter Török and Fu-Jen Kao (Eds.), Optical Imaging and Microscopy-Techniques and Advanced Systems, Springer, Berlin, 2007.

**ISBN-10:** 354069563X

**ISBN-13:** 978-3540695639



2. Hanry Yu, Ping-Chin Cheng, Pao-Chun Lin, and Fu-Jen Kao (Eds.), Multi-modality Microscopy, World Scientific Publishing Company, 1st edition (May 8, 2006).

**ISBN-10:** 9812565337

**ISBN-13:** 978-9812565334



#### **Awards & Honors:**

1. 1994, 2000, 2001 NSC Class A award (the award is cancelled since 2002 as a policy change of NSC)
2. 1998, Excellence Award on Academic-Industrial Collaboration for “Small Frame Solid State Laser”, Ministry of Education.
3. 2002-2014, NSC Grant Fellowship (as a replacement for NSC Class A award)