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1967 University of Tokyo, Bachelor of Science in Physics
1968 University of Tokyo, Master of Science in Physics
1972 University of Tokyo, PhD degree

Professional Experience:

1972–1980 Senior research assistant in Institute of Physical and Chemical Research (RIKEN)
1977–1979 Invited temporary member of the technical staff in Bell Laboratory in USA
1980–1994 Associate professor of the Graduate School of Science of the University of Tokyo
1994–present Full professor of the Graduate School of Science of the University of Tokyo

Membership:

Optical Society of America
Physical Society of Japan
Japan Society of Applied Physics
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Awards:

1995: Scientific Achievement Award from the Chemical Society of Japan
2000: Fellow of the Optical Society of America
2003: Scientific Achievement Award from the Spectroscopy Society of Japan
2005: Scientific Achievement Award from the Matsuo Foundation,
2005: Scientific Achievement Award from the International Vibrational Spectroscopy Conference
2005: Foundation For The Advancement Outstanding Scholarship

Publication in last five years (2003~2008)

(1)Papers

1. T. Kobayashi, J. Du, W. Feng, and K. Yoshino, 2008, Jul., Excited-State Molecular Vibration Observed for a Probe Pulse Preceding the Pump Pulse by Real-Time Optical Spectroscopy, *Phys. Rev. Lett.*, 037402,(SCI)
2. Y. Nosaka, M. Hirabayashi, T. Kobayashi, and E. Tokunaga, 2008, Jun., Gigantic optical Pockels effect in water within the electric double layer at the electrode-solution interface, *Phys. Rev. B*, 241401(R)(SCI)
3. S. Iwai, M. Tanaka, M. Mitsunaga, T. Kobayashi, and E. Tokunaga, 2008, Jun., Excited-state absorption spectra for optically forbidden f-f transitions in an $\text{Eu}^{3+}:\text{Y}_2\text{SiO}_5$ crystal and Eu^{3+} aqueous solution, *J. Opt. Soc. Am. B*, 1046(SCI)
4. T. Kobayashi, I. Iwakura, and A. Yabushita, 2008, Jun., Excitonic and vibrational nonlinear processes in a polydiacetylene studied by a few-cycle pulse laser, *New J. Phys.*, 065016(SCI)
5. I. Iwakura, A. Yabushita, and T. Kobayashi, 2008, May, Observation of transition state in Raman triggered oxidation of chloroform in the ground state by real-time vibrational spectroscopy, *Chem. Phys. Lett.*, 421(SCI)
6. J. Du, Z. Wang, W. Feng, K. Yoshino, and T. Kobayashi, 2008, May, Simultaneous measurement of electronic and vibrational dynamics to clarify a geometrical relaxation process in a conjugated polymer, *Phys. Rev. B*, 195205(SCI)
7. J. Zhang, Z. Wang, and T. Kobayashi, 2008, May, Vibrational fine structures revealed by the real-time vibrational phase and amplitude in MEH-PPV using few cycle pulses, *Phys. Rev. B*, 153202(SCI)
8. J. Liu, X. W. Chen, R. X. Li, and T. Kobayashi, 2008, Jan., Polarization-dependent pulse compression in an argon-filled cell through filamentation, *Laser Phys. Lett.*, 45(SCI)
9. C. W. Luo, Y. Q. Yang, I. T. Mac, Y. H. Chang, K. H. Wu, and T. Kobayashi, 2008, Feb., A widely tunable dual-wavelength CW Ti:sapphire laser with collinear output, *Opt. Express*, 3305(SCI)
10. T. Kobayashi, Z. Wang, and T. Otsubo, 2007, Dec., Classification of dynamic vibronic coupling in vibrational real-time spectra of a thiophene derivative by few-cycle pulses, *J Phys. Chem. A*, 12985(SCI)
11. T. Taneichi and T. Kobayashi, 2007, Nov., Anomalous phase behavior and apparent anharmonicity of the pump-probe signal in a two-dimensional harmonic potential system, *Chem. Phys.*, 189(SCI)
12. Z. Wang and T. Kobayashi, 2007, Oct., Real-time vibrational amplitude change in

- the ground and excited states of a quinoid thiophene induced by few-cycle pulses, *Chem. Phys. Lett.*, 221(SCI)
13. A. Colonna, A. Yabushita, I. Iwakura, and T. Kobayashi, 2007, Sep, Chirped molecular vibration in a stilbene derivative in solution, *Chem. Phys.*, 336(SCI)
 14. P. Kumbhakar and T. Kobayashi, 2007, Sep, Ultra-broadband optical parametric amplification in KBe₂BO₃F₂ crystal, *Opt. Comm.*, 205(SCI)
 15. I. Iwakura, A. Yabushita, and T. Kobayashi, 2007, Aug., Sum and difference frequency mixing of molecular vibrations in a polymer under high-density optical excitation, *Phys. Rev. B*, 052201(SCI)
 16. T. Taneichi and T. Kobayashi, 2007, Aug., Theoretical Investigation of Carrier-Envelope Phase Dependence of All-Optical Poling with the Third and Higher Order Nonlinear Process, *J. Phys. Chem. A*, 9613(SCI)
 17. T. Kobayashi, T. Taneichi and S. Takasaka, 2007, May, Exciton energy transfer between optically forbidden states of molecular aggregates, *J. Chem. Phys.*, 194705(SCI)
 18. T. Kobayashi, A. Yabushita, T. Saito, H. Ohtani, and M. Tsuda, 2007, Mar., Sub-5-fs real-time spectroscopy of transition states in bacteriorhodopsin during retinal isomerization, *Photochemistry and photobiology*, 363(SCI)
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 23. Z. Wang, T. Otsubo, and T. Kobayashi, 2006, Oct., Chirped modulation of molecular vibration in quinoidal thiophene after sub-5 fs excitation, *Chem. Phys. Lett.*, 45(SCI)
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- excitation in a quinoidal thiophene after sub-5fs pulse excitation, *J. Chem. Phys.*, 044103(SCI)
26. T. Kobayashi and M. Ikuta, 2006, Apr., Ultrafast optical nonlinearity in polydiacetylenes studied by sub-5-fs laser, *Mol. Cryst. Liq. Cryst.*, 193(SCI)
 27. M. Ikuta, A. Yabushita, F. S. Rondonuwu, J. Akahane, Y. Koyama, and T. Kobayashi, 2006, Apr., The $1\text{Bu}^+ \rightarrow 3\text{Ag}^- \rightarrow 1\text{Bu}^- \rightarrow 2\text{Ag}^-$ internal conversion in carotenoids following the energy-gap law identified by 5 fs spectroscopy, *Chem. Phys. Lett.*, 95(SCI)
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 29. T. Taneichi, J. Janszky, and T. Kobayashi, 2006, Feb., Pump-probe anharmonic signal in a harmonic system induced by deformed wavepacket generated by an ultrashort pulse, *Chem. Phys. Lett.*, 540(SCI)
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 31. H. Wang, S. Odate, Y. Li, and T. Kobayashi, 2005, Dec., The response characteristic of a quantum high-pass/low-pass filter for quantum state preparation, *J. Opt. B*, S737(SCI)
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 33. Y. Yuasa, M. Ikuta, and T. Kobayashi, 2005, Oct., Vibrational chirp in the dynamic Stokes-shift process due to ultrafast geometrical relaxation in a polydiacetylene, *Phys. Rev. B*, 134302(SCI)
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62. M. I. Stockman, D. J. Bergman, and T. Kobayashi, 2004, Feb., Coherent control of nanoscale localization of ultrafast optical excitation in nanosystems, *Phys. Rev. B*, 054202(SCI)
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64. A. Yabushita and T. Kobayashi, 2004, Feb., Spectroscopy by frequency-entangled photon pairs, *Phys. Rev. A*, 013806(SCI)
65. L. Xiao, H. Shimotani, N. Dragoie, A. Sugita, K. Saigo, Y. Iwasa, T. Kobayashi, and K. Kitazawa, 2004, Jan., Photoinduced electron transfer and enhanced fluorescence of C60 pearl-necklace polymers, *Chem. Phys. Lett.*, 738(SCI)
66. P. Kumbhakar, T. Kobayashi, and G. C. Bhar, 2004, Jun., Sellmeier dispersion for phase-matched terahertz generation in ZnGeP₂, *Appl. Opt.*, 3324(SCI)

(2)Books

1. T. Kobayashi, 2005, Ultrafast Phenomena XIV, *Chemical Physics* 79, edited by T. Kobayashi, T. Okada, T. Kobayashi, K. A. Nelson, and S. De Silvestri, Springer-Verlag
2. C. W. Luo, K. H. Wu, J. Y. Juang, J.-Y. Lin, T. M. Uen, Y. S. Gou, and T. Kobayashi, 2008, Anisotropic ultrafast dynamics in doped thin-film Y_{1-x}CaxBa₂Cu₃O_{7-δ} superconductors *Superconducting Thin Films*, Nova Science Pub Inc

(3)Conference Papers

1. T. Kobayashi, I. Izumi, and A. Yabushita, 2008, Parametric interactions and nonlinear Raman processes of vibronic excitons in polydiacetylene studied with a two-optical-cycle laser, *International Conference on Excitonic Processes in Condensed Matter*, 22-27 June, 2008, Kyoto, Japan
2. T. Kobayashi, 2008, Sub-5-fs Real-Time Spectroscopy of Transition States in Bacteriorhodopsin during Retinal Isomerization. *Conference on Lasers and Electro-Optics Quantum Electronics and Laser Science Conference (CLEO QELS)*, 4-9 May, 2008, San Jose, CA, USA
3. T. Kobayashi, 2008, Ultrafast Real Time Observation of Dynamics in Photo-Isomerization Process of Bacteriorhodopsin, *5th Asian Conference on Ultrafast Science*, Jan. 6-9, 2008, National University of Singapore
4. T. Kobayashi, A. Yabushita, 2008, Real-time observation of carbon double bond transformation during photo-isomerization of bacteriorhodopsin, *The 2008 annual meeting of the physics society of republic of china (PSROC2008)* Jan. 28-30, 2008, NCTU, Hsinchu, Taiwan
5. A. Colonna, A. Yabushita, I. Iwakura, and T. Kobayashi, 2007, Direct observation

- of time dependent molecular vibration in stilbene derivative, SICCC-5 / APCE 2007, Dec. 16-19, 2007, The Suntec Convention & Exhibition Centre, Singapore.
6. P. Kumbakar, M. Chattoradhyay, and T. Kobayashi, 2007, Generation of tunable ultrafast laser radiations in near infrared wavelength regio, Seventh Dae-Brns National Laser Symposium, M.S. University of Baroda, Vadodara, Gujarat, Dec. 17-20, 2007
 7. T. Kobayashi and S. Adachi, 2007, Control of SHG generation efficiency with carrier-envelope phase of ultrashort pulse, The 2007 Controlling Light with Light:Photorefractive Effects, Photosensitivity, Fiber Gratings, Photonic Materials and More (PR), Topical Meeting, Oct.14-16 , 2007, Cal., USA
 8. T. Kobayashi, and A. Yabushita, 2007, Real-time observation of carbon double bond transformation during photo-isomerization of bacteriorhodopsin, 12th European Conference on the Spectroscopy of Biological Molecules(ECSBM'07), Paris Sep. 1-6, 2007
 9. T. Kobayashi, 2007, High-Efficiency Source of a Three-Photon W State and its Full Characterization Using Quantum State Tomography, 2007 Nonlinear Optics Topical Meeting, Hawaii, Jul. 30- Aug. 03, 2007
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 11. T. Kobayashi and A. Yabushita, 2007, Real-time observation of carbon double bond transformation during photo-isomerization of bacteriorhodopsin Femtochemistry and Femtobiology 8, Magdalen College Oxford, July 22-27, 2007
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- in photo-isomerization process of bacteriorhodopsin, CLEO/QELS 2007, Conference on Lasers and Electro-Optics/Quantum Electronics and Laser, Baltimore Convention Center, Baltimore, Maryland, USA May 6-11, 2007
16. T. Kobayashi, Molecular spectroscopy with few cycle pulses, Seminar on Frontiers in Ultrafast Laser Science, Singapore, Apr. 27, 2007
 17. T. Kobayashi, Basics of optical parametric amplifier, Department of Electro-Physics Seminar, NCTU, Taiwan, Apr. 30, 2007
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