

NAME

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DATE OF BIRTH

June 3, 1976, Japan

EDUCATION

Ph.D.	Integrated Design Engineering,	Keio University, Japan	March 2004
M.S.	Integrated Design Engineering,	Keio University, Japan	September 2001
B.S.	Electronics and Electrical Engineering,	Keio University, Japan	March 2000

APPOINTMENTS

April 2018 – present	Professor, Department of Electronics and Electrical Engineering, Faculty of Science and Technology, Keio University, Yokohama, Japan
November 2016 – present	Advisor, Carrier Development Associates
April 2012 – March 2018	Associate Professor, Department of Electronics and Electrical Engineering, Faculty of Science and Technology, Keio University, Yokohama, Japan
April 2010 – March 2012	Lecturer, Department of Electronics and Electrical Engineering, Faculty of Science and Technology, Keio University, Yokohama, Japan
April 2009 – March 2010	Research Scientist, NTT Basic Research Laboratories, NTT Corporation, Atsugi, Japan
April 2004 – March 2009	Researcher, NTT Basic Research Laboratories, NTT Corporation, Atsugi, Japan
November 2002 – March 2004	Research Associate, 21st Century Center of Excellence (COE) Program in optical and electronic device technology for access network, Keio University, Yokohama, Japan

AWARDS

June 2011	Ando Incentive Prize for the Study of Electronics, Japan
April 2011	The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology, The Young Scientists' Prize
November 2007	The 6th Annual Scientific American 50 Award, "Light Manipulation."

PROFESSIONAL ACTIVITIES**Society membership:**

Member, Optica

Member, IEEE Photonics Society

Member, SPIE

Member, The Japan Society of Applied Physics

Senior Member, The Laser Society of Japan

Member, Council, and Sectreaty: The Institute of Electronics, Information and Communication Engineers

Member: The Optical Society of Japan

Scientific journals:

Editorial Board Member, Scientific Reports, Nature Publishing Group, February 2017- Present

Associate Editor, AIP Advances, American Institute of Physics, April 2013 – Present

Senior Editor, IEEE Journal of Selected Topics in Quantum Electronics, Sep. 2022 - Present

Deputy editor-in-chief, The Review of Laser Engineering, The Laser Society of Japan, April 2022 – Present (Editorial Board Secretary, April 2011-April 2022)

Editorial Board, OYO BUTURI, The Japan Society of Applied Physics, April 2014 – March 2016

Committees in international conferences:

Program Chair, The 11th Advanced Lasers and Photon Sources, 2023

Program Vice Chair, International Conference on Nano-photonics and Nano-optics (ICNN2023), 2023

The 12th Asia-Pacific Laser Symposium (APLS) 2023, Steering Committee (Secretary), 2023

Technical Program Committee, Nonlinear Photonics (NP) 2022, 2022

Technical Program Sub-committee Chair (C8), CLEO Pacific Rim 2022, 2022

General Chair (S&I), CLEO:2022, 2022

Program Committee, The 10th Advanced Lasers and Photon Sources, 2022

Program Vice Chair, International Conference on Nano-photonics and Nano-optics (ICNN2022), 2022

Program Committee, The 9th Advanced Lasers and Photon Sources, 2021

Program Vice Chair, International Conference on Nano-photonics and Nano-optics (ICNN2021), 2021

Program Chair (S&I), CLEO:2020, 2020

Program Committee, The 8th Advanced Lasers and Photon Sources, 2020

Program Committee/Steering Committee, International Conference on Nano-photonics and Nano-optoelectronics (ICNN2020), 2020

Technical Program Sub-committee Chair (SI7), CLEO:2019, 2019

Program Committee, The 7th Advanced Lasers and Photon Sources, 2019

Program Committee/Steering Committee, International Conference on Nano-photonics and Nano-optoelectronics (ICNN2019), 2019

Technical Program Sub-committee Chair (SI7), CLEO:2018, 2018

Program Committee/Steering Committee, International Conference on Nano-photonics and Nano-optoelectronics (ICNN2018), 2018

Program Committee, The 6th Advanced Lasers and Photon Sources, 2018

Technical Program Committee (SI7), CLEO:2017, 2017

Program Committee, The 24th Congress of the International Commission for Optics (ICO-24),

2017

Program Committee/Steering Committee, International conference on Nano-photonics and Nano-optoelectronics (ICNN2017), 2017

Program Committee/Steering Committee, The 6th Advanced Lasers and Photon Sources, 2017
International Advisory Committee, COMPTHELIX-2017

Technical Program Committee (S&I 7), CLEO:2016, 2016

Program Committee/Steering Committee, The 5th Advanced Lasers and Photon Sources, 2016

Program Committee/Steering Committee, The 4th Advanced Lasers and Photon Sources, 2015

Program Committee/Secretariat, The 3rd Advanced Lasers and Photon Sources, 2014

Steering Committee, The second Japan-France Frontiers of Engineering (JFFoE), 2012

Program Sub Committee, CLEO/Pacific Rim, 2009

Sub Committee, IEEE/LEOS Ultrafast Optics and Electronics, 2007

Sub Committee, IEEE/LEOS Ultrafast Optics and Electronics, 2006

Referees:

Nature, Nature Photonics, Nature Materials, Nature Communications, Communications Physics, Scientific Reports, Optics Express, Optics Letters, Optica, Photonics Research, Journal of the Optical Society of America B, Applied Optics, Physical Review Letters, Physical Review A, Applied Physics Letters, AIP Advances, ACS Photonics, Journal of Lightwave Technology, IEEE Photonics Technology Letters, IEEE Journal of Quantum Electronics, Nanophotonics, etc.

TEACHING

Keio University, 2010-present

- Photonic Nanostructure (Graduate School) (International course / in English) (-present)
- Photonics (Undergraduate course) (in Japanese) (- present)
- Lab work (Undergraduate course) (in Japanese) (-present)
- Global Leadership Seminar (Undergraduate course) (in Japanese) (2016, 2017)

Keio University, 2001-2004 (as a Teaching Assistant)

- Electromagnetism (Undergraduate course) (in Japanese)
- Laser Laboratory (Undergraduate course) (in Japanese)

RESEARCH INTEREST

Broad definition

Photonics, Electro-optics

Research topics

Keywords: Micro and Nano sized optical cavities, optical nonlinearity, frequency comb, photonic crystal

2010 – Present: frequency comb in optical microcavities, high-Q photonic crystal nanocavities

2004 – 2010: High-Q photonic crystal nanocavities and their optical nonlinear applications

2001 – 2004: Coherent control of molecular in high-intense laser fields

2000 – 2001: Femtosecond pulse shaping using feedback loop and PG-FROG traces

SELECTED INVITED TALKS

- [1] S. Fujii, K. Wada, Y. Kakinuma, and T. Tanabe, “Fabrication of dispersion engineered ultrahigh-Q crystalline optical microresonator for broad-bandwidth optical parametric oscillation,” SPIE Photonics West 2021, 11672-6, online, Feb 6-11 (2021). (invited)

- [2] S. Fujii and T. Tanabe, “Experimental and numerical demonstration of tunable octave-wide four-wave mixing in dispersion engineered microresonators,” SPIE Photonics West 2020, 11274-19, San Fransisco, Feb 1-6 (2020). (invited)
- [3] T. Tanabe, *et al.*, “Kerr comb generation in a mode coupled system,” SPIE Photonics West, 10904-20, San Francisco, Feb 2-7 (2019). (invited)
- [4] T. Tanabe, *et al.*, “Stimulated Raman scattering comb in a silica microcavity,” *Integrated Photonics Research, Silicon, and Nano-Photonics (IPR 2017)*, IM4A.3, New Orleans, 24-27 July (2017). (invited)
- [5] T. Tanabe, *et al.*, “Photon trapping, delaying and dynamic-control using ultra-small high- Q photonic crystal cavities,” in *Conference on Lasers and Electro-Optics / Quantum Electronics and Laser Science Conference (CLEO/QELS'07)*, CFQ1, Baltimore, May 8-10 (2007). (invited)

SELECTED CONTRIBUTED TALKS

- [1] T. Kodama, R. Sugano, J. Hofs, M. Ohtsuka, M. Seki, N. Yokoyama, M. Okano, and T. Tanabe, “Multi-wavelength reconstruction in a compact ($< \text{mm}$) high-resolution ($< 0.1 \text{ nm}$) random photonic crystal spectrometer,” CLEO:2022, SM3K.6, San Jose (Hybrid), May. 15-20 (2022).
- [2] S. Kogure, T. Ohtsuka, S. Fujii, H. Kumazaki, S Tanaka, Y. Hashimoto, Y. Kobayashi, T. Araki, K. Furusawa, N. Sekine, and T. Tanabe, “FEC-free optical data transmission with a chip-integrated microresonator frequency comb source,” CLEO:2022, STh4K.2, San Jose (Hybrid), May. 15-20 (2022).
- [3] T. Tanabe, *et al.* “Dynamic release of short pulse from ultrahigh- Q nanocavities via adiabatic wavelength conversion,” In *Conference on Lasers and Electro-Optics / Quantum Electronics and Laser Science Conference (CLEO/QELS'08)*, QPDB1, San Jose, May 4-9 (2008). (post-deadline paper)
- [4] T. Tanabe, *et al.*, “Time-domain observation of photon trapping in ultra-small high- Q photonic crystal nanocavities,” in *Conference on Lasers and Electro-Optics / Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies 2006 (CLEO/QELS'06)*, QPDA7, Long Beach, May 21-26 (2006). (post-deadline paper)
- [5] T. Tanabe, *et al.*, “Fast on-chip all-optical switches and memories using silicon photonic crystal with extremely low operating energy,” in *Conference on Lasers and Electro-Optics / Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies 2005 (CLEO/QELS'05)*, QPDA5, Baltimore, May 22-27 (2005). (post-deadline paper)

SCIENTIFIC PUBLICATIONS

As of Oct 2022

104 publications in referred international journals

H-index: 38 (Google Scholar)

Sum of the Times Cited: 7389 (Google Scholar)

<https://scholar.google.co.jp/citations?user=Bz53ENYAAAAJ>

Researcher ID: B-4230-2009

FULL LIST OF SCIENTIFIC PUBLICATIONS

(Only international journals)

- [1] A. Nakashima, S. Fujii, R. Imamura, K. Nagashima, and T. Tanabe, “Deterministic generation of a perfect soliton crystal with a saturable absorber,” **Opt. Lett.**, Vol. 47, No. 6, pp. 1458-1461 (2022). (**Editor's Pick**)
- [2] S. Fujii, S. Tanaka, T. Ohtsuka, S. Kogure, K. Wada, H. Kumazaki, S. Tasaka, Y. Hashimoto, Y. Kobayashi, T. Araki, K. Furusawa, N. Sekine, S. Kawanishi, and T. Tanabe,

- “Dissipative Kerr soliton microcombs for FEC-free optical communications over 100 channels,”
Opt. Express, Vol. 30, No. 2, pp. 1351-1364 (2022).
- [3] Y. Hayama, S. Fujii, T. Tanabe, and Y. Kakinuma,
“Theoretical approach on the critical depth of cut of single crystal MgF₂ and application to a microcavity,”
Prec. Engineer., Vol. 73, pp. 234-243 (2022).
- [4] T. S. L. P. Suzuki, A. Nakashima, K. Nagashima, R. Ishida, R. Imamura, S. Fujii, S. Y. Set, S. Yamashita,
and T. Tanabe,
“Design of a passively mode-locking whispering-gallery-mode microlaser,”
J. Opt. Soc. Amer. B, Vol. 38, No. 10, pp. 3172-3178 (2021).
- [5] K. Kato, T. Takagi, T. Tanabe, S. Moriyama, Y. Morita, and H. Maki,
“Manipulation of phase slips in carbon-nanotube-templated niobium-nitride superconducting nanowires
under microwave radiation,”
Sci. Rep., Vol. 10, 14278 (2020).
- [6] S. Fujii, Y. Hayama, K. Imamura, H. Kumazaki, Y. Kakinuma, and T. Tanabe,
“All-precision-machining fabrication of ultrahigh-Q crystalline optical microresonators,”
Optica, Vol. 7, No. 6, pp. 694-701 (2020).
- [7] S. Fujii and T. Tanabe,
“Dispersion engineering and measurement of whispering gallery mode microresonator for Kerr frequency
comb generation,”
Nanophoton., Vol. 9, No. 5, pp. 1087-1104 (2020). (review paper).
- [8] Y. Zhuang, H. Kumazaki, S. Fujii, R. Imamura, N. A. B. Daud, R. Ishida, H. Chen, and T. Tanabe,
“Coupling of a whispering gallery mode to a silicon chip with photonic crystal,”
Opt. Lett., Vol. 44, No. 23, pp. 5731-5734 (2019). (**Editor’s pick**)
- [9] T. Tanabe, S. Fujii, and R. Suzuki,
“Review on microresonator frequency comb,”
Jpn. J. Appl. Phys., Vol. 58, SJ-0801 (9 pages) (2019). (**progress review paper**)
- [10] S. Fujii, S. Tanaka, M. Fuchida, H. Amano, Y. Hayama, R. Suzuki, Y. Kakinuma, and T. Tanabe,
“Octave-wide phase-matched four-wave mixing in dispersion engineered crystalline microresonators,”
Opt. Lett., Vol. 44, No. 12, pp. 3146-3149 (2019). (**Editor’s pick**)
- [11] P. Minzioni, C. Lacava, T. Tanabe, J. Dong, X. Hu, G. Csaba, W. Porod, G. Singh, A. Willner, A. Almaiman,
V. Torres-Company, J. Schroeder, A. Peacock, M. Strain, F. Parmigiani, G. Contestabile, M. Giampiero, D.
Marpaung, Z. Liu, J. Bowers, L. Chang, S. Fabbri, M. Vázquez, V. Bharadwaj, S. Eaton, P. Lodahl, X.
Zhang, B. Eggleton, B. Munro, K. Nemoto, O. Morin, J. Laurat, and J. Nunn,
“Roadmap on all-optical processing,”
J. Opt., Vol. 21, No. 6, 063001 (55 pages) (2019). (**review paper**)
- [12] R. Suzuki, S. Fujii, A. Hori, and T. Tanabe,
“Theoretical study on dual-comb generation and soliton trapping in a single microresonator with
orthogonally polarized dual-pumping,”
IEEE Phot. J., Vol. 11, No. 1, 6100511 (11 pages) (2019).
- [13] N. A. B. Daud and T. Tanabe,
“Photolithographically fabricated silicon photonic crystal nanocavity photoreceiver with laterally
integrated p-i-n diode,”
AIP Adv., Vol. 8, No. 10, 105224 (7 pages) (2018).
- [14] S. Fujii, Y. Okabe, R. Suzuki, T. Kato, A. Hori, Y. Honda, and T. Tanabe,
“Analysis of mode coupling assisted Kerr comb generation in normal dispersion system,”

- IEEE Phot. J.**, Vol. 10, No. 5, 4501511 (11 pages) (2018).
- [15] T. Kumagai, N. Hirota, K. Sato, K. Namiki, H. Maki, and T. Tanabe,
“Saturable absorption by carbon nanotubes on silica microtoroids,”
J. Appl. Phys., Vol. 123, 233104 (6 pages) (2018).
- [16] Y. Honda, W. Yoshiki, T. Tetsumoto, S. Fujii, K. Furusawa, N. Sekine, and T. Tanabe,
“Brillouin lasing in coupled silica toroid microcavities,”
Appl. Phys. Lett., Vol. 112, 201105 (5 pages) (2018). (**Featured Article / SCILIGHT**)
- [17] R. Suzuki, A. Kubota, A. Hori, S. Fujii, and T. Tanabe,
“Broadband gain induced Raman comb formation in a silica microresonator,”
J. Opt. Soc. Amer. B, Vol. 35, No. 4, pp. 933-938 (2018). (**Editor’s pick**)
- [18] Y. Mizumoto, H. Itobe, H. Kangawa, M. Fuchida, T. Tanabe, and Y. Kakinuma,
“Development of CaF₂-brass hybrid WGM microcavity by using ultra-precision machining,”
Mechanical Engineering Letters, Vol. 4, pp. 17-00491 (8 pages) (2018).
- [19] S. Fujii, T. Kato, R. Suzuki, A. Hori, and T. Tanabe,
“Transition between Kerr comb and stimulated Raman comb in a silica whispering gallery mode microcavity,”
J. Opt. Soc. Amer. B, Vol. 35, No. 1, pp. 100-106 (2018). (**Editor’s pick**)
- [20] S. Fujii, A. Hori, T. Kato, R. Suzuki, Y. Okabe, W. Yoshiki, A. C.-Jinnai, and T. Tanabe,
“Effect on Kerr comb generation in a clockwise and counter-clockwise mode coupled microcavity,”
Opt. Express, Vol. 25, No. 23, pp. 28969-28982 (2017).
- [21] R. Suzuki, T. Kato, T. Kobatake, and T. Tanabe,
“Suppression of optomechanical parametric oscillation in a toroid microcavity assisted by a Kerr comb,”
Opt. Express, Vol. 25, No. 23, pp. 28806-28816 (2017).
- [22] T. Tetsumoto, H. Kumazaki, K. Furusawa, N. Sekine, and T. Tanabe,
“Design, fabrication and characterization of a high Q silica nanobeam cavity with orthogonal resonant modes,”
IEEE Photon. J., Vol. 9, No. 5, 4502609 (9 pages) (2017).
- [23] W. Yoshiki, Y. Honda, T. Tetsumoto, K. Furusawa, N. Sekine, and T. Tanabe,
“All-optical tunable buffering with coupled ultra-high Q whispering gallery mode microcavities,”
Sci. Rep., Vol. 7, 28758 (2017).
- [24] N. A. B. Daud, Y. Ooka, T. Tabata, T. Tetsumoto, and T. Tanabe,
“Electro-optic modulator based on photolithography fabricated *p-i-n* integrated photonic crystal nanocavity,”
IEICE Trans. Electron., Vol. E100-C, No.8, pp.670-674 (2017).
- [25] Y. Mizumoto, H. Kangawa, H. Itobe, T. Tanabe, and Y. Kakinuma,
“Influence of crystal anisotropy on subsurface damage in ultra-precision cylindrical turning of CaF₂,”
Precis. Eng., Vol. 49, pp. 104-114 (2017).
- [26] S. Fujii, T. Kato, R. Suzuki, and T. Tanabe,
“Third-harmonic blue light generation from Kerr clustered combs and dispersive waves,”
Opt. Lett., Vol. 42, No. 10, pp. 2010-2013 (2017).
- [27] Y. Ooka, T. Tetsumoto, N. A. B. Daud, and T. Tanabe,
“Ultrasmall in-plane photonic crystal demultiplexers fabricated with photolithography,”
Opt. Express, Vol. 25, No. 2, pp. 1521-1528 (2017).
- [28] T. Kato, A. Hori, R. Suzuki, S. Fujii, T. Kobatake, and T. Tanabe,
“Transverse mode interaction via stimulated Raman scattering comb in a silica microcavity,”

- Opt. Express**, Vol. 25, No. 2, pp. 857-866 (2017).
- [29] S. Vyas, T. Tanabe, M. Tiwari, and G. Singh,
“Chalcogenide photonic crystal fiber for ultraflat mid-infrared supercontinuum generation,”
Chin. Opt. Lett., Vol. 14, No. 12, pp. 123201 (5 pages) 2016.
- [30] W. Yoshiki, Y. Honda, M. Kobayashi, T. Tetsumoto, and T. Tanabe,
“Kerr-induced controllable adiabatic frequency conversion in an ultra-high Q silica toroid microcavity,”
Opt. Lett., Vol. 41, No. 23, pp. 5482-5485 (2016).
- [31] A. C.-Jinnai, T. Kato, S. Fujii, T. Nagano, T. Kobatake, and T. Tanabe,
“Broad bandwidth third-harmonic generation via four-wave mixing and stimulated Raman scattering in a microcavity,”
Opt. Express, Vol. 24, No. 23, pp. 26322-26331 (2016).
- [32] S. Vyas, T. Tanabe, G. Singh and M. Tiwari,
“Ultraflat broadband supercontinuum in highly nonlinear Ge_{11.5}As₂₄Se_{64.5} photonic crystal fibres,”
Ukr. J. Phys. Opt., Vol. 17, No. 3, pp. 132–139 (2016).
- [33] A. Godbole, P. P. Dali. V. Janyani, T. Tanabe, and G. Singh,
“All optical scalable logic gates using Si₃N₄ microring resonators,”
IEEE J. Sel. Top. Quantum Electron., Vol. 22, No. 6, 5900308 (2016).
- [34] Y. Nakagawa, Y. Mizumoto, T. Kato, T. Kobatake, H. Itobe, Y. Kakinuma, and T. Tanabe,
“Dispersion tailoring of a crystalline whispering gallery mode microcavity for a wide-spanning optical Kerr frequency comb,”
J. Opt. Soc. Amer. B, Vol. 33, No. 9, pp. 1913-2920 (2016).
- [35] Y. Mizumoto, H. Kangawa, Y. Nakagawa, H. Itobe, T. Tanabe, and Y. Kakinuma,
“Influence of nose radius on surface integrity in ultra-precision cylindrical turning of single-crystal calcium fluoride,”
Procedia CIRP, Vol. 45, 139-142 (2016).
- [36] T. Kato, A. C.-Jinnai, T. Nagano, T. Kobatake, R. Suzuki, W. Yoshiki, and T. Tanabe,
“Hysteresis behavior of Kerr frequency comb generation in a high-quality-factor whispering gallery mode microcavity,”
Jpn. J. Appl. Phys., Vol. 55, No. 7, 072201 (2016). (**SPOTLIGHTS**)
- [37] K. Masuda, S. Moriyama, Y. Morita, K. Komatsu, T. Takagi, T. Hashimoto, N. Miki, T. Tanabe, and H. Maki,
“Thermal and quantum phase slips in niobium-nitride nanowires based on suspended carbon nanotubes,”
Appl. Phys. Lett., Vol. 108, 222601 (2016).
- [38] H. Itobe, Y. Nakagawa, Y. Mizumoto, H. Kangawa, Y. Kakinuma, and T. Tanabe,
“Bi-material crystalline whispering gallery mode microcavity structure for thermo-opto-mechanical stabilization,”
AIP Advances, Vol. 6, No. 5, 055116 (2016).
- [39] Y. Ooka, N. A. B. Daud, T. Tetsumoto, and T. Tanabe,
“Compact resonant electro-optic modulator using randomness of a photonic crystal waveguide,”
Opt. Express, Vol. 24, No. 10, pp. 11199-11207 (2016).
- [40] T. Kobatake, T. Kato, H. Itobe, Y. Nakagawa, and T. Tanabe,
“Thermal effects on Kerr comb generation in a CaF₂ whispering gallery mode microcavity,”
IEEE Photon. J., Vol. 8, No. 2, 4501109 (2016).
- [41] W. Yoshiki, A. C.-Jinnai, T. Tetsumoto, and T. Tanabe,
“Observation of energy oscillation between strongly-coupled counter-propagating ultra-high Q whispering

- gallery modes,”
Opt. Express, Vol. 23, No. 24, pp. 30851-30860 (2015).
- [42] A. C.-Jinnai, W. Yoshiki, and T. Tanabe,
“Broad bandwidth pulse propagation through an ultrahigh- Q microcavity with a chirped pulse,”
Jpn. J. Appl. Phys., Vol. 54, No. 12, 12201 (2015).
- [43] Y. Kakinuma, S. Azami, and T. Tanabe,
“Evaluation of subsurface damage caused by ultra-precision turning in fabrication of CaF₂ optical micro resonator,”
CIRP Annals – Manuf. Technol., Vol. 64, No. 1, 117-120 (2015).
- [44] J. Nishimura, M. Kobayashi, R. Saito, and T. Tanabe,
“NaCl ion detection using a silica toroid microcavity,”
Appl. Opt., Vol. 54, No. 20, pp. 6391-6396 (2015).
- [45] Y. Ooka, T. Tetsumoto, A. Fushimi, W. Yoshiki, and T. Tanabe,
“CMOS compatible high- Q photonic crystal nanocavity fabricated with photolithography on silicon photonic platform,”
Sci. Rep., Vol. 5, 11312 (2015). (**SPIE Newsroom**)
- [46] T. Tetsumoto, Y. Ooka, and T. Tanabe,
“High- Q coupled resonances on a PhC waveguide using a tapered nanofiber with high coupling efficiency,”
Opt. Express, Vol. 23, No. 12, pp. 16256-16263 (2015).
- [47] R. Suzuki, T. Kato, T. Tetsumoto, and T. Tanabe,
“Octagonal toroid microcavity for mechanically robust optical coupling,”
AIP Advances, Vol. 5, No. 5, 057127 (2015).
- [48] S. Azami, H. Kudo, Y. Mizumoto, T. Tanabe, J. Yan, and Y. Kakinuma,
“Experimental study of crystal anisotropy based on ultra-precision cylindrical turning of single-crystal calcium fluoride,”
Prec. Engineer., Vol. 40, pp. 172-181 (2015).
- [49] W. Yoshiki and T. Tanabe,
“Performance of Kerr bistable memory in silicon nitride microring and silica microtoroid,”
Jpn. J. Appl. Phys., Vol. 53, No. 12, 12202 (pp. 7) (2014).
- [50] W. Yoshiki and T. Tanabe,
“All-optical switching using Kerr effect in a silica toroid microcavity,”
Opt. Express, Vol. 22, No. 20, pp. 24332-24341 (2014).
- [51] A. Fushimi, H. Taniyama, E. Kuramochi, M. Notomi, and T. Tanabe,
“Fast calculation of the quality factor for two-dimensional photonic crystal slab nanocavities,”
Opt. Express, Vol. 22, No. 19, pp. 23349-23359 (2014).
- [52] S. Azami, K. Hiroshi, T. Tanabe, J. Yan, and Y. Kakinuma,
“Experimental analysis of the surface integrity of single-crystal calcium fluoride caused by ultra-precision turning,”
Procedia CIRP, Vol. 13, pp. 225-229 (2014).
- [53] T. Tetsumoto and T. Tanabe,
“High- Q silica zipper cavity for optical radiation pressure driven MOMS switch,”
AIP Advances, Vol. 4, 077137 (2014). [arXiv:1405.3722]
- [54] A. Fushimi and T. Tanabe,
“All-optical logic gate operating with single wavelength,”
Opt. Express, Vol. 22, No. 4, pp. 4466-4479 (2014).

- [55] H.Kudo, R. Suzuki and T. Tanabe,
“Whispering gallery modes in hexagonal microcavities,”
Phys. Rev. A, Vol. 88, 023807 (2013).
- [56] H. Kudo, Y. Ogawa, T. Kato, A. Yokoo, and T. Tanabe,
“Fabrication of whispering gallery mode cavity using crystal growth,”
Appl. Phys. Lett., Vol. 102, 211105 (2013).
- [57] W. Yoshiki and T. Tanabe,
“Analysis of bistable memory in silica toroid microcavity,”
J. Opt. Soc. Amer. B, Vol. 29, No. 12, pp. 3335-3343 (2012). **(Spotlight on Optics)**
- [58] T. Kato, W. Yoshiki, R. Suzuki, and T. Tanabe,
“Octagonal silica toroidal microcavity for controlled optical coupling,”
Appl. Phys. Lett., Vol. 101, 121101 (2012). [arXiv:1207.5974v1]
- [59] A. Yokoo, T. Tanabe, E. Kuramochi, and M. Notomi,
“Ultra-high-Q nanocavities written with a nanoprobe,”
Nano Lett., Vol. 11, pp. 3634-3642 (2011).
- [60] M. Notomi, A. Shinya, K. Nozaki, T. Tanabe, S. Matsuo, E. Kuramochi, T. Sato, H. Taniyama and H. Sumikura,
“Low power nanophotonic devices based on photonic crystals towards dense photonic network on chip,”
IET Circuits, Devices & Systems, Vol. 5, No. 2, pp. 84-93 (2011). **(Invited Paper)**
- [61] T. Tanabe, E. Kuramochi, H. Taniyama, and M. Notomi,
“Electro-optic adiabatic wavelength shifting and Q switching demonstrated using a $p-i-n$ integrated photonic crystal nanocavity,”
Opt. Lett., Vol. 35, pp. 3895-3897 (2010). **(Spotlight on Optics)**
- [62] E. Kuramochi, H. Taniyama, T. Tanabe, K. Kawasaki, Y.-G. Roh, and M. Notomi,
“Ultra-high- Q one-dimensional photonic crystal nanocavities with modulated mode-gap barriers on SiO₂ claddings and on air claddings,”
Opt. Express, Vol. 18, pp. 15859-15869 (2010).
- [63] K. Nozaki, T. Tanabe, A. Shinya, S. Matsuo, T. Sato, H. Taniyama, and M. Notomi,
“Sub-femtojoule all-optical switching using a photonic crystal nanocavity,”
Nature Photon., Vol. 4, pp. 477-483 (2010). **(News and Views)**
- [64] Y.-G. Roh, T. Tanabe, A. Shinya, H. Taniyama, E. Kuramochi, S. Matsuo, T. Sato, and M. Notomi,
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