CURRICULUM VITAE

Yu Shimojo, Ph.D.

Department of Dermatology, Graduate School of Medicine, Osaka Metropolitan University,

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Education

Mar. 2023 Ph.D. in Medical physics, Division of Sustainable Energy and Environmental Engineering, Graduate School of Engineering, The University of Osaka, Japan

Mar. 2020 M.Eng., Division of Sustainable Energy and Environmental Engineering, Graduate School of Engineering, The University of Osaka, Japan (1 year early completion)

Mar. 2019 B.Eng., Division of Sustainable Energy and Environmental Engineering, School of Engineering, The University of Osaka, Japan

Professional Training and Employment

Dec. 2023-Present Guest Researcher, Office of Management & Planning, The University of Osaka, Japan

Apr. 2023-Present Research Fellow (PD), Japan Society for the Promotion of Science, Japan

Apr. 2023-Present Postdoctoral Fellow, Department of Dermatology, Graduate School of Medicine, Osaka Metropolitan University, Japan

Jun. 2023-Mar. 2025 Guest Researcher, Graduate School of Engineering, The University of Osaka, Japan

Apr. 2021-Mar. 2023 Research Fellow (DC2), Japan Society for the Promotion of Science, Japan

Apr. 2020-Mar. 2023 Specially appointed researcher, Office of Management & Planning, The University of Osaka, Japan

Research Interests

Tissue optics, ultrashort pulsed laser, laser-tissue interactions, numerical modeling and simulation, selective photothermolysis, laser and light-based treatments, photodynamic therapy

Experimental Skills

- Numerical simulation of light transport and thermal diffusion: Proficient in numerical modeling and simulation of laser-tissue interactions to evaluate laser and light-based treatments
- *Ex vivo* experiment using human samples and animal models: Proficient in laser irradiation experiments to evaluate laser-induced thermal damage to tissues and measurements of optical properties of tissues
- Mouse experiment: Experienced in creating mouse models of muti-drug resistant bacteria infected cutaneous ulcers for the investigation of the efficacy of photodynamic therapy

- Cell experiments: Experienced in cell culture, the generation of stable cell line, and the investigation of phototoxicity
- Bacteria experiments: Experienced in performing *in vitro* experiments of bacterial control using photodynamic therapy
- Optical setup development: Proficient in developing optical setup for laser irradiation experiments and spectroscopic measurement
- Spatial light modulation: Experienced in wavefront shaping for focusing light into scattering media
- Photoacoustic measurement: Experienced in measuring photoacoustic signals of a tissue-mimicking phantom
- Scanning electron microscopy
- Fluorescence microscopy
- Confocal microscopy
- Immunofluorescence staning
- ELISA and Cell viability assays
- CAD and 3D printing
- Matlab and Python programmings: Utilized for performing image and data processings
- C and Cuda programmings: Utilized for performing numerical simulations of light transport and thermal diffusion
- R programming: Utilized for performing meta analysis and systematic review

Honors and Awards

1. Grant Program for Technology Exchanges, NAKATANI FOUNDATION (Dec. 2024)
2. International Travel Award, Amerian Society for Photobiology (Jul. 2024)
3. Best Poster Presentation Award, The 5th meeting of Comprehensive Understanding of Scattering and Fluctuated Fields and Science of Clairvoyance (May 2023)
4. The Encouragement Prize for Article Presentations Abroad, Association for the Advancement of Manufacturing & Technology (Apr. 2022)
5. Grant Program for Technology Exchanges, NAKATANI FOUNDATION for advancement of measuring technologies in biomedical engineering (Dec. 2021)
6. Scholarship Loan Forgiveness for Academic Excellence, Japan Student Services Organization (Jun. 2021)
7. Grant Program for Technology Exchanges, Life Science Foundation of JAPAN (Jan. 2021)
8. Best Oral Presentation Award for Young Scientists, Japan Society for Laser Surgery and Medicine (Oct. 2020)
9. Scholarship Loan Forgiveness for Academic Excellence, Japan Student Services Organization (Jun. 2020)
10. KONICA MINOLTA Science and Technology Foundation Award, The Optical Society of Japan (Dec.

2019)

11. Grant Program for Technology Exchanges, NAKATANI FOUNDATION for advancement of measuring technologies in biomedical engineering (Mar. 2019)

Grant and Fundings

1. Grant-in-Aid for Early-Career Scientists, Japan Society for the Promotion of Science KAKENHI, No. 24K19832, Development of a safety evaluation model for laser and light-based treatments based on three-dimensional cultured human skin optical models, FY2024–2027, Amount ~42,000 USD (4,680,000 JYP), PI.
2. Collaborative Research Project with Milbon Co., Ltd., Construction of evaluation systems for the effects of ultraviolet rays on human skin and artificial skin, FY2023–2024, PI.
3. Grant-in-Aid for JSPS Fellows, Japan Society for the Promotion of Science KAKEN, No. 23KJ1825, Clinical demonstration of a computational laser treatment system using ultrashort pulsed laser, FY2023–2026, Amount ~42,000 USD (4,680,000 JYP) + Salary (~118,000 USD, 13,032,000 JYP), PI.
4. Strategic Basic Research Programs, Japan Science and Technology Agency, ACT–X, No. JPMJAX21K7, Development of non-contact and non-invasive robot-assisted laser surgery system, FY2021–2024, Amount ~92,000 USD (10,118,000 JYP), PI.
5. Grant-in-Aid for JSPS Fellows, Japan Society for the Promotion of Science KAKEN, No. 21J11059, Computational evaluation method for picosecond laser skin treatment, FY2021–2023, Amount ~14,000 USD (1,500,000 JYP) + Salary (~22,000 USD, 2,400,000 JYP), PI.
6. Collaborative Research Project with Integral Corporation, Preclinical evaluation of a novel optical fiber for laser treatment of benign prostatic hyperplasia, FY2020, Co-investigator.

Professional Societies

- American Society for Photobiology, Member (2024–Present)
- The Japan Photodynamic Association, Member (2023–Present)
- American Society for Laser Medicine and Surgery, Member (2022–Present)
- SPIE, Member (2022–Present)
- The Optical Society of Japan, Member (2019–Present)
- The Laser Society of Japan, Member (2018–Present)
- Japan Society for Laser Surgery and Medicine, Member (2018–Present)

Services

- Reviewer of *Lasers in Medical Science* (2025)
- Reviewer of *International Journal of Thermal Sciences* (2025)
- Reviewer of *Scientific Reports* (2025)
- Reviewer of *Journal of Japan Society for Laser Surgery and Medicine* (2025)
- Reviewer of *IEEE Transactions on Biomedical Engineering* (2024)

- Reviewer of *Journal of Innovative Optical Health Sciences* (2024)

Publications (peer review, *corresponding author)

1. **Y. Shimojo***, T. Nishimura, D. Tsuruta, T. Ozawa, T. Kono: Association between irradiation parameters and outcomes for picosecond laser treatment of nevus of Ota: An in-silico-supported meta-analysis. ***JAAD Reviews***, in press
2. T. Nishimura*, Y. Watanabe, **Y. Shimojo**, T. Ozawa, D. Tsuruta: In silico design of blue laser soft tissue vaporization with optimized optical power efficiency and mitigated thermal side effects. ***Lasers in Medical Science***, **40**, 273 (2025).
3. **Y. Shimojo***, D. Tsuruta, T. Ozawa, T. Kono: In silico evaluation based on tissue optics for picosecond laser treatment of pigmented lesions. ***Journal of Japan Society for Laser Surgery and Medicine***, in press. [in Japanese]
4. G. Takeda*, **Y. Shimojo***, T. Ozawa, T. Nishimura: Spatial distribution of light-melanosome interaction dependent on irradiation fluence and spot size for short-pulsed laser skin treatment: A phantom study. ***Lasers in Medical Science***, **40**, 251 (2025).
5. **Y. Shimojo***, Y. Morizane, T. Sonokawa, J. Usuda, T. Nishimura: Optical characteristics of human lung cancer for photodynamic therapy with measured absorption and reduced scattering coefficients. ***Journal of Biomedical Optics***, **30**, 048001 (2025).
6. **Y. Shimojo***, T. Nishimura, D. Tsuruta, T. Ozawa, T. Kono: *In silico* evaluation of nanosecond laser treatment of pigmented lesions based on skin optical properties using a model of melanosome disruption threshold fluence. ***Lasers in Surgery and Medicine***, **57**, 130–140 (2025).
7. H. Fukuhara*, T. Nishimura, **Y. Shimojo**, K. Inoue: Comparison of fluorescence intensity of protoporphyrin IX as observed on the screen of different cystoscopic systems. ***Photodiagnosis and Photodynamic Therapy***, **51**, 104425 (2025).
8. [H. Watabe, **Y. Shimojo***], A. Shingu, H. Ito, H. Fukuhara, M. Miyake, K. Inoue, K. Fujimoto, T. Nishimura*: Measurement of tissue optical properties in the 400–700 nm range to assess light penetration depths for laser treatment of upper tract urothelial carcinomas. ***Journal of Biomedical Optics***, **29**, 125001 (2024).
9. **Y. Shimojo***, T. Nishimura*, D. Tsuruta, T. Ozawa: Ultralow radiant exposure of a short-pulsed laser to disrupt melanosomes with localized thermal damage through a turbid medium. ***Scientific Reports***, **14**, 20112 (2024).
10. **Y. Shimojo***, R. Teranishi, T. Nishimura, K. Kuwada, T. Goya, K. Morii, D. Tsuruta, T. Ozawa: Antimicrobial photodynamic therapy using an organic light-emitting diode. ***Journal of Japan Society for Laser Surgery and Medicine***, **45**, 153–160 (2024). [in Japanese]
11. R. Teranishi, T.Ozawa*, B. Katayama, **Y. Shimojo**, N. Ito, K. Awazu, D. Tsuruta: Effect of photodynamic therapy with 5-aminolevulinic acid and EDTA-2Na against mixed infection of

methicillin-resistant *Staphylococcus aureus* and *Pseudomonas aeruginosa*. ***Photodermatology, Photoimmunology & Photomedicine***, **40**, e12959 (2024).

12. **Y. Shimojo***, T. Nishimura, D. Tsuruta, T. Ozawa, H.H.L. Chan, T. Kono: Wavelength-dependent threshold fluences for melanosome disruption to evaluate the treatment of pigmented lesions with 532-, 730-, 755-, 785-, and 1064-nm picosecond lasers. ***Lasers in Surgery and Medicine***, **56**, 404–418 (2024).
13. H. Imanishi, T. Nishimura*, **Y. Shimojo**, K. Awazu: Deep learning based depth map estimation of protoporphyrin IX in turbid media using dual wavelength excitation fluorescence. ***Biomedical Optics Express***, **14**, 5254–5266 (2023).
14. **Y. Shimojo***, K. Sudo, T. Nishimura*, T. Ozawa, D. Tsuruta, K. Awazu: Transient simulation of laser ablation based on Monte Carlo light transport with dynamic optical properties model. ***Scientific Reports***, **13**, 11898 (2023).
15. Y. Takai*, T. Nishimura*, **Y. Shimojo**, K. Awazu: Artificial neural network-based determination of denoised optical properties in double integrating spheres measurement. ***Journal of Innovative Optical Health Sciences***, **16**, 2350012, (2023).
16. Y. Miyoshi*, T. Nishimura*, **Y. Shimojo**, K. Okayama, K. Awazu: Endoscopic image-guided laser treatment system based on fiber bundle laser steering. ***Scientific Reports***, **13**, 2921 (2023).
17. **Y. Shimojo***, T. Nishimura*, T. Ozawa, D. Tsuruta, K. Awazu: Nonlinear absorption-based analysis of energy deposition in melanosomes for 532-nm short-pulsed laser skin treatment. ***Lasers in Surgery and Medicine***, **55**, 305-315 (2023).
18. T. Nishimura*, T. Suzuki, **Y. Shimojo**, R. Teranishi, T. Ozawa, D. Tsuruta, K. Awazu: Mathematical modelling for antimicrobial photodynamic therapy mediated by 5-aminolaevulinic acid: an *in vitro* study. ***Photodiagnosis and Photodynamic Therapy***, **40**, 103116 (2022).
19. K. Sudo*, **Y. Shimojo**, T. Nishimura*, K. Awazu: Three-dimensional transient simulation of CO_2 laser tissue vaporization and experimental evaluation with a hydrogel phantom. ***Journal of Innovative Optical Health Sciences***, **15**, 2250016 (2022). **[Selected as Feturead Article 2022]**
20. **Y. Shimojo***, T. Nishimura*, K. Awazu: Photothermal effect induced by contact laser vaporization of porcine prostate tissue using XCAVATOR fiber. ***Journal of Japan Society for Laser Surgery and Medicine***, **42**, 219–227 (2022). [in Japanese]
21. **Y. Shimojo***, T. Nishimura*, H. Hazama, N. Ito, K. Awazu: Incident fluence analysis for 755-nm picosecond laser treatment of pigmented skin lesions based on threshold fluences for melanosome disruption. ***Lasers in Surgery and Medicine***, **53**, 1096–1104 (2021).
22. T. Nishimura*, Y. Takai, **Y. Shimojo**, H. Hazama, N. Ito, K. Awazu: Determination of optical properties in double integrating sphere measurement by artificial neural network based method. ***Optical Review***, **28**, 42–47 (2021).
23. **Y. Shimojo***, T. Nishimura*, H. Hazama, T. Ozawa, K. Awazu: Measurement of absorption and reduced scattering coefficients in Asian human epidermis, dermis, and subcutaneous fat tissues in the

400- to 1100-nm wavelength range for optical penetration depth and energy deposition analysis. ***Journal of Biomedical Optics***, **25**, 045002 (2020).

24. **Y. Shimojo***, T. Nishimura, H. Hazama, N. Ito, K. Awazu: Picosecond laser-induced photothermal skin damage evaluation by computational clinical trial. ***Laser Therapy***, **29**, 61–72 (2020).
25. T. Nishimura*, **Y. Shimojo**, K. Awazu: Computer-aided regulatory science for laser medicine. ***Journal of Japan Society for Laser Surgery and Medicine***, **41**, 37–43 (2020). [in Japanese]
26. T. Nishimura*, **Y. Shimojo**, H. Hazama, K. Awazu: A method of computational clinical trial of a nanosecond pulsed laser skin treatment device by numerical simulation of phototermal damage. ***Journal of Japan Society for Laser Surgery and Medicine***, **40**, 301–308 (2020). [in Japanese]

Proceedings (peer review)

1. **Y. Shimojo**, T. Nishimura, D. Tsuruta, T. Ozawa, T. Kono: Evaluation of safety and efficacy of picosecond laser treatment of dermal pigmented lesions using a melanosome disruption threshold fluence model. ***Lasers in Surgery and Medicine***, 57(S37), S52 (2025).
2. T. Kikuchi, K. Watanabe, **Y. Shimojo**, H. Kawamura, E. Kinoshita, L. Ito, T. Ozawa: Establishment of a novel and highly effective hair growth theory enabled by hair follicle stem cells. ***IFSCC Magazine***, **27**, 165–169 (2023).
3. **Y. Shimojo**, T. Nishimura, K. Awazu: Quantitative evaluation of light distribution in skin tissue for short-pulsed laser treatment using Monte Carlo simulation combined with nonlinear absorption model of melanin. ***Proceedings of SPIE***, 12377 (2023).
4. Y. Shimojo, T. Nishimura: Incident fluence model based on tissue optical properties and threshold fluence for melanosome disruption for 755-nm picosecond laser treatment of benign pigmented lesions. ***Lasers in Surgery and Medicine***, 54(S34), S19 (2022).
5. Y. Takai, **Y. Shimojo**, T. Nishimura, K. Awazu: Artificial neural network based method to esti- mate optical properties in biological tissues for noise reduction. ***Proceedings of Biophotonics Congress: Biomedical Optics 2022***, JM3A.3 (2022).
6. **Y. Shimojo**, T. Nishimura, K. Awazu: Two-level model of melanin absorption in picosecond laser skin treatment. ***Proceedings of SPIE***, 11958 (2022).
7. **Y. Shimojo**, T. Nishimura, H. Hazama, K. Awazu: Experimental analysis of morphological change in melanin for multiscale modeling of picosecond laser skin treatment. ***Proceedings of SPIE***, 11640 (2021).
8. **Y. Shimojo**, T. Nishimura, H. Hazama, T. Ozawa, K. Awazu: Computational evaluation of ethnic differences in photothermal damage induced by laser skin treatments. ***Proceedings of Biophotonics Congress: Biomedical Optics 2020***, JTu3A.1 (2020).
9. **Y. Shimojo**, T. Nishimura, H.Hazama, N. Ito, K. Awazu: *In silico* evaluation of thermal skin damage caused by picosecond laser irradiation. ***Proceedings of Biophotonics Congress: Optics in the Life Sciences Congress 2019***, DS1A.7 (2019).

Presentations at international conferences

1. **Y. Shimojo**, T. Nishimura, D. Tsuruta, T. Ozawa, T. Kono: Evaluation of safety and efficacy of picosecond laser treatment of dermal pigmented lesions using a melanosome disruption threshold fluence model. The 44th Annual Conference of the American Society for Laser Medicine and Surgery (Oral, Orlando, Apr. 24th 2025).
2. H. Watabe, **Y. Shimojo**, T. Sonokawa, J. Usuda, T. Nishimura: Optical properties of carbon-deposited lung tissue for photodynamic therapy in lung cancer. Optics and Photonics International Congress (Poster, Yokohama, Apr. 24th 2025).
3. **Y. Shimojo**: In silico evaluation of picoecond laser treatment for pigmented lesions: Tissue optics based approach. Special Seminar at University of Washington (Oral, Seattle, Jan. 31th 2025).
4. **Y. Shimojo**, T. Nishimura, D. Tsuruta, T. Ozawa: Spatially selective picosecond laser disruption of melanosomes using wavefront shaping. SPIE Photonics West BiOS (Poster, San Franscisco, Jan. 26th 2025).
5. G. Takeda, **Y. Shimojo**, T. Nishimura: Experimental verification of a melanosome destruction threshold-based model for depth-selective laser treatment of pigmented skin lesions: A phantom study. SPIE Photonics West BiOS (Poster, San Franscisco, Jan. 26th 2025).
6. **[Invited] Y. Shimojo**, T. Nishimura, D. Tsuruta, T. Ozawa: Evaluation of laser ablation-induced thermal damage by computational simulation of light and heat transfer in tissue with dynamic optical properties model. SPIE Photonics West BiOS (Oral, San Franscisco, Jan. 25th 2025).
7. H. Watabe, **Y. Shimojo**, A. Shingu, H. Ito, H. Fukuhara, M. Miyake, K. Inoue, K. Fujimoto, T. Nishimura: Computational evaluation of the effect of tissue characteristics on photodynamic therapy of upper tract urothelial carcinoma using Monte Carlo-based light propagation simulation. SPIE Photonics West BiOS (Oral, San Franscisco, Jan. 25th 2025).
8. [**Invited**] T. Nishimura, **Y. Shimojo**: In silico clinical trial for laser treatment: a biotissue optical property spectroscopy based approach. The 22nd Annual Meeting of The Japan Association of Medical Spectroscopy & Biomedical Raman Imaging Workshop 2024 (Oral, Osaka, Nov. 26th 2024).
9. **[Invited] Y. Shimojo**, T. Nishimura, D. Tsuruta, T. Ozawa: *In silico* evaluation of the effect of skin type on light dosimetry for photodynamic therapy. The 42nd American Society for Photobiology Biennial Meeting (Oral, Chicago, Jul. 29th 2024).
10. **Y. Shimojo**: Computational laser treatment based on multiscale analysis of picosecond laser-tissue interaction. The Global Young Scientists Summit 2024 (Poster, Singapore, Jan. 11th 2024).
11. T. Kikuchi, K. Watanabe, **Y. Shimojo**, H. Kawamura, E. Kinoshita, L. Ito, T. Ozawa: Establishment of a novel and highly effective hair growth theory fulfilled by hair follicle stem cells. The 33rd IFSCC Congress (Oral, Barcelona, Sep. 5th 2023).
12. Y. Watanabe, **Y. Shimojo**, T. Nishimura, K. Awazu: Numerical analysis of laser tissue vaporization by spatial light irradiation for control of photo-thermal interaction. European conferences on Biomedical optics 2023 (Poster, Munich, Jun. 25th, 2023).

13. **Y. Shimojo**, T. Nishimura, K. Awazu: Quantitative evaluation of light distribution in skin tissue for short-pulsed laser treatment using Monte Carlo simulation combined with nonlinear absorption model of melanin. SPIE Photonics West BiOS (Oral, San Francisco, Jan. 28th 2023).
14. **Y. Shimojo**, T. Nishimura: Incident fluence model based on tissue optical properties and threshold fluence for melanosome disruption for 755-nm picosecond laser treatment of benign pigmented lesions. The 41st Annual Conference of the American Society for Laser Medicine and Surgery (Oral, Online, Apr. 28th 2022).
15. Y. Takai, **Y. Shimojo**, T. Nishimura, K. Awazu: Artificial neural network based method to estimate optical properties in biological tissues for noise reduction. Biophotonics Congress: Biomedical Optics (Poster, Online, Apr. 26th 2022).
16. **Y. Shimojo**, T. Nishimura, K. Awazu: Two-level model of melanin absorption in picosecond laser skin treatment. SPIE Photonics West BiOS (Oral, Online, Feb. 21st 2022).
17. **Y. Shimojo**, T. Nishimura, H. Hazama, K. Awazu: Experimental analysis of morphological change in melanin for multiscale modeling of picosecond laser skin treatment. SPIE Photonics West BiOS (Oral, Online, Mar. 6th 2021).
18. **Y. Shimojo**, T. Nishimura, H. Hazama, T. Ozawa, K. Awazu: Computational evaluation of ethnic difference in photothermal damage induced by laser skin treatments. Biophotonics Congress: Biomedical Optics (Poster, Online, Apr. 21st 2020).
19. **Y. Shimojo**, T. Nishimura, H. Hazama, N. Ito, K. Awazu: *In silico* evaluation of thermal skin damage caused by picosecond laser irradiation. Biophotonics Congress: Optics in the Life Sciences Congress (Oral, Tucson, Apr. 14th 2019).

Presentations at domestic conferences

1. [**invited**] 下条裕, 西村隆宏, 鶴田大輔, 小澤俊幸, 河野太郎: 色素性病変に対するピコ秒レーザー治療のメラノソームの破壊閾値に基づく波長別照射指標の開発. 第68回日本形成外科学会総会・学術集会 (口頭, 東京, 2025年4月18日).
2. [**invited**] 下条裕: 超短パルスレーザー治療技術と安全性評価手法の構想. The 1st Ensemble of Primitive and Proactive Research (口頭, 京都, 2025年3月14日).
3. 下条裕, 西村隆宏, 鶴田大輔, 小澤俊幸: 非線形吸収に基づくピコ秒レーザー皮膚治療の計算的評価と臨床研究との比較検証. 第 7 回日本フォトダーマトロジー学会・学術大会 (口頭, 東京, 2024 年 11 月 15 日).
4. [**invited**] 下条裕, 寺西梨絵, 栗田健二, 呉屋剛, 森井克行, 鶴田大輔, 小澤俊幸: 貼付式有機 EL フィルムを用いた細菌感染皮膚潰瘍 PDT における浸軟対策. 第 34 回光線力学学会学術講演会 (口頭, 京都, 2024 年 11 月 10 日).
5. [**invited**] 下条裕, 西村隆宏, 鶴田大輔, 小澤俊幸: 日本人皮膚光学特性計測に基づく皮膚癌 PDT の in silico 評価. 第 34 回光線力学学会学術講演会 (口頭, 京都, 2024 年 11 月 9 日).
6. 渡部媛珠, 下条裕, 新宮麻子, 伊東秀典, 三宅牧人, 藤本清秀, 福原英雄, 井上啓史, 西村隆宏:

上部尿路上皮腫瘍に対する光線力学治療に向けた光深達深さの数値的評価. 第34回光線力学学会学術講演会 (口頭, 京都, 2024 年 11 月 9 日).

7. 下条裕, 守實友梨, 道家壮紀, 村木倫子, 江村勝治: 研究分野の立ち上がりを表す微弱信号の検出に向けた取組み：ReCo-foresight の開発. RA 協議会第 10 回年次大会 (ポスター, 沖縄, 2024 年 10 月 17 日).
8. [**invited**] 下条裕, 西村隆宏, 鶴田大輔, 小澤俊幸: ピコ秒レーザーによる色素性病変治療の定量評価手法の開発. 第 42 回日本美容皮膚科学会総会・学術大会 (口頭, 名古屋, 2024 年 8 月 31 日).
9. 武田岳士, 下条裕, 西村隆宏: 短パルスレーザーによる深さ選択的メラノソーム破壊の検討. 第 35 回日本レーザー医学会西日本大会 (口頭, 富山, 2024 年 7 月 27 日).
10. 渡部媛珠, 下条裕, 新宮麻子, 伊東秀典, 三宅牧人, 藤本清秀, 福原秀雄, 井上啓史, 西村隆宏: PDT の in silico 試験に向けた上部尿路上皮腫瘍の光学特性値の評価. 第 35 回日本レーザー医学会西日本大会 (口頭, 富山, 2024 年 7 月 27 日).
11. 下条裕, 西村隆宏, 鶴田大輔, 小澤俊幸: 真皮色素病変治療に対するピコ秒レーザーの照射指標の開発. 第 46 回日本光医学・光生物学会 (口頭, 浜松, 2024 年 7 月 7 日).
12. 下条裕, 須藤圭麻, 西村隆宏, 鶴田大輔, 小澤俊幸: 動的光学特性モデルを用いた光伝搬モンテカルロ法に基づくレーザー蒸散シミュレーション法の開発. レーザー学会学術講演会第 44 回年次大会 (口頭, 東京, 2024 年 1 月 18 日).
13. [**invited**] 下条裕, 西村隆宏, 鶴田大輔, 小澤俊幸: ピコ秒レーザーによる色素性病変治療の定量評価と臨床研究との比較検証. 第 44 回日本レーザー医学会総会 (口頭, 東京, 2023 年 11 月 26 日).
14. 渡辺悠介, 下条裕, 西村隆宏: レーザー光照射強度分布の変調による蒸散および凝固制御に向けた実験的評価. 第 44 回日本レーザー医学会総会 (口頭, 東京, 2023 年 11 月 26 日).
15. 佐野陽一, 下条裕, 西村隆宏: 光線力学治療計画ソフトウェアに向けた深層学習に基づく組織内光伝搬計算の高速化の検討. 第 44 回日本レーザー医学会総会 (口頭, 東京, 2023 年 11 月 25 日).
16. [**invited**] 西村隆宏, 三好悠斗, 下条裕: 内視鏡治療に向けたイメージガイドレーザー照射システムの開発. 第 99 回レーザ加工学会講演会 (口頭, オンライン, 2023 年 11 月 21 日).
17. 下条裕: 短パルスレーザーを用いたコンピュテーショナルレーザー治療技術の開発. 学術変革領域(A)「散乱透視学」第 5 回領域会議 (ポスター, 神戸, 2023 年 5 月 15 日).
18. [**invited**] 下条裕, 西村隆宏, 粟津邦男: コンピュテーショナルレーザー治療技術：コンセプトとピコ秒レーザー皮膚治療への適用に向けた開発. レーザー学会学術講演会第 43 回年次大会 (口頭, 名古屋, 2023 年 1 月 19 日).
19. 下条裕, 西村隆宏, 粟津邦男: メラニンの非線形吸収モデルに基づいたピコ秒レーザー皮膚治療の評価. 第 43 回日本レーザー医学会総会 (口頭, 東京, 2022 年 10 月 15 日).
20. 下条裕, 西村隆宏, 粟津邦男: 非線形吸収モデルに基づいた短パルス光照射によるメラノソーム光吸収量の in silico 評価. 第 33 回日本レーザー医学会西日本大会 (口頭, 大阪, 2022 年 7

月 30 日).

21. 西村隆弘, 下条裕, 粟津邦男: コンピュテーショナルレーザー治療技術の開発. 第 16 回新画像システム・情報フォトニクス研究討論会 (ポスター, 東京, 2022 年 6 月 17 日).
22. [**invited**] 西村隆宏, 下条裕, 粟津邦男: レーザー治療機器開発における in silico 評価技術. 第 30 回日本コンピュータ外科学会 (口頭, 筑波, 2021 年 11 月 22 日).
23. 高井祐朔, 下条裕, 西村隆宏, 粟津邦男: ニューラルネットワークを用いた双積分球光学系に基づく光学特性値計測におけるノイズ除去の検討. 第 42 回日本レーザー医学会総会 (口頭, オンライン, 2021 年 10 月 22 日).
24. 須藤圭麻, 下条裕, 西村隆宏, 粟津邦男: レーザー組織蒸散の三次元過渡シミュレーション法の開発. 第 42 回日本レーザー医学会総会 (口頭, オンライン, 2021 年 10 月 22 日).
25. 下条裕, 西村隆宏, 粟津邦男: ピコ秒レーザー皮膚治療におけるスキンタイプと病変深さに基づいた入射フルエンスの計算的評価. 第 42 回日本レーザー医学会総会 (口頭, オンライン, 2021 年 10 月 22 日).
26. 下条裕, 西村隆宏, 粟津邦男: 皮膚色素性病変の破壊閾値に基づいたピコ秒パルス光照射条件の計算機援用設計. レーザー学会第 557 回研究会「光・レーザーの医学・生物学応用」(口頭, 富山, 2021 年 10 月 15 日).
27. [**invited**] 下条裕: 計算機シミュレーションによるピコ秒レーザー皮膚治療の設計と評価. 日本光学会第 21 回情報フォトニクス研究グループ研究会 (口頭, オンライン, 2021 年 9 月 17 日).
28. 高井祐朔, 下条裕, 西村隆宏, 間久直, 粟津邦男: ニューラルネットワークに基づく双分球光学系を用いた生体組織の光学特性値推定. レーザー学会学術講演会第 41 回年次大会 (口頭, オンライン, 2021 年 1 月 21 日).
29. 下条裕, 西村隆宏, 間久直, 粟津邦男: レーザー皮膚治療における光深達深さ解析に与える組織層構造の影響評価. 第 41 回日本レーザー医学会総会 (口頭, オンライン, 2020 年 10 月 10 日).
30. 下条裕, 西村隆宏, 間久直, 小澤俊幸, 粟津邦男: 双積分球光学系と逆モンテカルロ法に基づいた表皮，真皮，皮下脂肪の光学特性値計測. レーザー学会学術講演会第 40 回年次大会 (口頭, 仙台, 2020 年 1 月 20 日).
31. [**invited**] 下条裕, 粟津邦男: 計算機シミュレーションに基づいたレーザー治療のレギュラトリーサイエンス. 第 7 回レーザー学会「レーザーバイオ医療」技術専門委員会 (口頭, 那覇, 2019 年 11 月 15 日).
32. 下条裕, 西村隆宏, 間久直, 粟津邦男: Q スイッチ Nd:YAG レーザーによるダブルパルス照射が皮膚組織に及ぼす熱影響の in silico 評価. 第 40 回日本レーザー医学会総会 (口頭, 浜松 2019 年 10 月 20 日).
33. 下条裕, 西村隆宏, 間久直, 伊東信久, 粟津邦男: 経皮的レーザー椎間板減圧術 (PLDD) における in silico による熱影響評価手法の開発. 第 32 回日本レーザー医学会関西地方会 (口頭, 鳥取, 2019 年 7 月 6 日).

34. 下条裕, 西村隆宏, 粟津邦男: ピコ秒レーザー治療機器に対する計算的評価手法の開発. レーザー学会学術講演会第 39 回年次大会 (口頭, 東京, 2019 年 1 月 14 日).
35. 下条裕, 西村隆宏, 粟津邦男: ピコ秒レーザー治療における正常皮膚組織に対する熱損傷の in silico 評価. 第 39 回日本レーザー医学会総会 (口頭, 東京, 2018 年 11 月 1 日).

Languages

- English (IELTS Score: 6.5)
- Japanese (Native)