Publikacje

Analytical Chemistry

Test new SharePoint publication

Date: 2026

https://www.google.com

Journal of Computational Neuroscience

Intrinsic chaos control in cortical circuits: A minimal E-I-M rate model for primary visual cortex.

Borjkhani, M., Sharif, M.A. , Borjkhani, H

Date: 2026

10.1007/s10827-026-00938-5

Frontiers in Computational Neuroscience

NMDA receptor kinetics drive distinct routes to chaotic firing in pyramidal neurons

Borjkhani M, Borjkhani H, Sharif MA, Bahrami F, Janahmadi M

Date: 2026

10.3389/fncom.2026.1753444

PLOS ONE

Magnesium neuroprotection in retinal ganglion cells: A computational study of frequency-dependent therapeutic windows and intervention timing

Mehdi Borjkhani ,Hadi Borjkhani,Morteza A. Sharif

Date: 2026

10.1371/journal.pone.0348068

Handbook of Visual Optics, Volume Two

„Two-photon vision” chapter in „Handbook of Visual Optics, Volume Two”

Katarzyna Komar, Maciej Wojtkowski, Silvestre Manzanera, Pablo Artal

Date: 2026

10.1201/9781032696690

Journal of Biomedical Optics

Spatio-temporal optical coherence imaging and tomography for in vivo applications

Maciej Wojtkowski

Date: 2026

10.1117/1.JBO.31.11.113504

Optics Letters

Effect of laser-beam diameter on the visibility of two-photon stimuli

Agnieszka Zielińska, Daniel Rumiński, Maciej Szkulmowski, Maciej Wojtkowski, Katarzyna Komar

Date: 2026

10.1364/OL.589174

Multidisciplinary Digital Publishing Institute

Old Target with New Vision: In Search of New Therapeutics for Diabetic Retinopathy by Selective Modulation of Aldose Reductase

Vineeta Kaushik, Saurav Karmakar and HumbertoFernandes

Date: 2026

10.3390/diabetology7030042

Biomedical Optics Express

Single-shot, depth-encoded multiplexed OCT for multi-spot tracking of induced transient corneal dynamics

Karol Karnowski, Jadwiga Milkiewicz, Onur Cetinkaya, Angela Pachacz, Ewa Mączyńska-Walkowiak, Patryk Młyniuk, Andrea Curatolo, Kamil Liżewski, Ahmed Abass, Dawid Borycki, Bartłomiej Kałużny, Susana Marcos, Ahmed Elsheikh, Ireneusz Grulkowski, and Maciej Wojtkowski

Date: 2026

10.1364/BOE.596342

Frontiers in Computational Neuroscience

Population-level neural rejuvenation dynamics in addiction: a computational framework for understanding developmental plasticity reactivation

Borjkhani M, Borjkhani H, Sharif MA

Date: 2026

10.3389/fncom.2026.1753417

Biocybernetics and Biomedical Engineering

Computational aberration correction enables full-thickness retinal imaging with adaptive optics optical coherence tomography

Dawid Borycki, Zhuolin Liu, Daniel X. Hammer, Maciej Wojtkowski

Date: 2026

10.1016/j.bbe.2026.02.002

Translational Vision Science & Technology

Visual Function Loss Through Opacified Media: Comparison Between Single- and Two-Photon Vision

Ava Niknahad; Agnieszka Zielińska; Hyeck-Soo Son; Katarzyna Komar; Sebastian Maćkowski; Gerd U. Auffarth; Grzegorz Łabuz

Date: 2026

10.1167/tvst.15.2.11

Biocybernetics and Biomedical Engineering

Interferometric speckle contrast optical spectroscopy (iSCOS) in continuous-wave parallel interferometric near-infrared spectroscopy (CW-πNIRS)

Klaudia Nowacka-Pieszak, Speed Samaei, Dawid Borycki

Date: 2025

10.1016/j.bbe.2025.11.001

Journal of Optics

Roadmap on Advances in Visual and Physiological Optics

Jesús E. Gómez-Correa, Brian Vohnsen, Barbara K. Pierścionek, Sabino Chávez-Cerda, Sabine Kling, Jos J. Rozema, Raymond A. Applegate, Giuliano Scarcelli, J. Bradley Randleman, Alexander V. Goncharov, Amy Fitzpatrick, Jessica I. W. Morgan, Austin Roorda, David A. Atchison, Juan P. Trevino, Alejandra Consejo, Charlie Börjeson, Linda Lundström, Seung Pil Bang, Geunyoung Yoon, Karol Karnowski, Bartlomiej J. Kaluzny, Ireneusz Grulkowski, Sergio Barbero, Pablo Artal, Juan Tabernero, Pete Kollbaum, Stéphanie C. Thébault

Date: 2025

10.48550/arXiv.2411.14606

TechRxiv

Adaptation of pre-trained single stage detectors for rapid tool pose estimation in OCT-assisted eye surgery

Krzysztof Gromada, Tomasz Gawroński, Marco Zagari, Mario Damiano Toro, Karol Karnowski

Date: 2025

10.36227/techrxiv.175977354.40348122/v1

Science Translational Medicine

Retinal polyunsaturated fatty acid supplementation reverses aging-related vision decline in mice

Gao F., Tom E, Rydz C., Cho W., Kolesnikov A.V., Sha Y., Papadam A., Jafari S., Joseph A., Ahanchi A., Balalaei Someh Saraei N., Lyon D.C., Foik A., Nie Q., Grassmann F., Kefalov V.J., Skowronska-Krawczyk D.

Date: 2025

10.1126/scitranslmed.ads5769.

Technical Digest Series

A hybrid time-of-flight-resolved parallel interferometric near-infrared spectroscopy (parallel iNIRS) with a fast two-dimensional and a single-channel iNIRS

Marcin Marzejon, Klaudia Nowacka-Pieszak, Michał Dąbrowski, and Dawid Borycki

Date: 2025

10.1364/ECBO.2025.Tu1B.2

Investigative Ophthalmology & Visual Science

Spectral Phasor Approach in Human TPEF-SLO

Piotr Kasprzycki, Michal Dabrowski, Jakub Boguslawski, Grazyna Palczewska, Krzysztof Palczewski, Maciej Wojtkowski

Date: 2025

https://iovs.arvojournals.org/article.aspx?articleid=2804563

Modeling breast cancer dynamics through modulable small Vessel Environment Bioreactor (sVEB)

Fabio Maiullari ,Maria Grazia Ceraolo, Dario Presutti , Nicole Fratini, Matteo Galbiati , Alessandra Fasciani, Konrad Giżyński, Salma Bousselmi, Francesca Megiorni, Cinzia Marchese, Piotr Kasprzycki, Karol Karnowski, Alessandro Talone, Gaspare Varvaro, Davide Peddis, Marco Costantini, Claudia Bearzi, Roberto Rizzi

Date: 2025

10.1016/j.biomaterials.2025.123441

Investigative Ophthalmology & Visual Science

Comparison of Physiological Brain Responses Evoked byVisual and Electrical Stimulation

Kordecka K, Kublik E, Foik AT

Date: 2025

10.1167/iovs.66.5.1.

Ocelli: an open-source tool for the analysis and visualization of developmental multimodal single-cell data

Piotr Rutkowski, Marcin Tabaka

Date: 2025

10.1093/nargab/lqaf040

Applied Sciences

Dynamic Corneal Response for Different Air-Puff Stimuli in Ex Vivo Animal Model Measured with SS-OCT System with Two Sample Arms

Ewa Maczynska-Walkowiak, Daniel Ruminski, Grzegorz Gondek, Bartlomiej J. Kaluzny,Karol Karnowski, Ireneusz Grulkowski

Date: 2025

10.3390/app15063291

Proceedings of the National Academy of Sciences

Photopic flicker optoretinography captures the light-driven length modulation of photoreceptors during phototransduction

Sławomir Tomczewski, Andrea Curatolo, Andrzej Foik, Piotr Węgrzyn, Bartłomiej Bałamut, Maciej Wielgo, Wiktor Kulesza, Anna Galińska, Katarzyna Kordecka, Sahil Gulati, Humberto Fernandes, Krzysztof Palczewski, Maciej Wojtkowski

Date: 2025

10.1073/pnas.2421722122

Open Biology

CryoEM structure and small-angle X-ray scattering analyses of porcine retinol-binding protein 3

Kaushik V, Gessa L, Kumar N, Matyáš Pinkas, Mariusz Czarnocki-Cieciura, Krzysztof Palczewski, Jiří Nováče, Fernandes H

Date: 2025

10.1098/rsob.240180

Biocybernetics and Biomedical Engineering

Imaging of retinal ganglion cells and photoreceptors using Spatio-Temporal Optical Coherence Tomography (STOC-T) without hardware-based adaptive optics

Marta Mikuła-Zdańkowska, Dawid Borycki, Piotr Węgrzyn, Karolis Adomavičius, Egidijus Auksorius, Maciej Wojtkowski

Date: 2025

10.1016/j.bbe.2025.01.001

Nature Biomedical Engineering

Safer and efficient base editing and prime editing via ribonucleoproteins delivered through optimized lipid-nanoparticle formulations

Hołubowicz R, Du SW, Felgner J, Smidak R, Choi EH, Palczewska G, Menezes CR, Dong Z, Gao F, Medani O, Yan AL, Hołubowicz MW, Chen PZ, Bassetto M, Risaliti E, Salom D, Workman JN, Kiser PD, Foik AT, Lyon DC, Newby GA, Liu DR, Felgner PL, Palczewski K.

Date: 2024

10.1038/s41551-024-01296-2.

STAR Protocols

In vivo volumetric analysis of retinal vascular hemodynamics in mice with spatio-temporal optical coherence tomography

Piotr Węgrzyn, Wiktor Kulesza, Maciej Wielgo, Sławomir Tomczewski, Anna Galińska, Bartłomiej Bałamut, Katarzyna Kordecka, Onur Cetinkaya, Andrzej Foik, Robert J. Zawadzki, Dawid Borycki, Maciej Wojtkowski, Andrea Curatolo

Date: 2024

10.1117/1.NPh.11.4.045003

Biomedical Optics Express

Method for the determination of the luminance of two-photon vision stimuli

Oliwia Kaczkoś, Agnieszka Zielińska, Jacek Pniewski, Maciej Wojtkowski, Katarzyna Komar

Date: 2024

10.1364/BOE.525180

Nature Communications

A combination treatment based on drug repurposing demonstrates mutation-agnostic efficacy in pre-clinical retinopathy models

Leinonen H, Zhang J, Occelli LM, Seemab U, Choi EH, L P Marinho LF, Querubin J, Kolesnikov AV, Galinska A, Kordecka K, Hoang T, Lewandowski D, Lee TT, Einstein EE, Einstein DE, Dong Z, Kiser PD, Blackshaw S, Kefalov VJ, Tabaka M, Foik A, Petersen-Jones SM, Palczewski K.

Date: 2024

10.1038/s41467-024-50033-5.

Biomedical Optics Express

Time-domain diffuse correlation spectroscopy at large source detector separation for cerebral blood flow recovery

Neda Mogharari, Stanisław Wojtkiewicz, Dawid Borycki, Adam Liebert, Michał Kacprzak

Date: 2024

10.1364/BOE.523514

Investigative Ophthalmology & Visual Science

Refining a Human Two-Photon Imaging System

Raphael Francis Aguas, Michal Dabrowski, Boyan Pan, Marcin Marzejon, Agata Kotulska, Maciej D Wojtkowski, Andrew Browne

Date: 2024

https://iovs.arvojournals.org/article.aspx?articleid=2795745

The Journal of Biological Chemistry

Conditional deletion of miR-204 and miR-211 in murine retinal pigment epithelium results in retinal degeneration

Samuel W Du, Ravikiran Komirisetty, Dominik Lewandowski, Elliot H Choi, Damian Panas, Susie Suh, Marcin Tabaka, Roxana A Radu, Krzysztof Palczewski

Date: 2024

10.1016/j.jbc.2024.107344

IEEE Sensors Journal

Optical coherence tomography imaging by a fully integrated MOEMS endomicroscopy probe with Mirau micro-interferometer and two axis electrothermal micro-scanner using Lissajous trajectory scanning

P. Struk, S. Bargiel, M. Józwik, B. Mirecki, M. Wojtkowski, H. Xie and C. Gorecki

Date: 2024

10.1109/JSEN.2024.3373223

Optics Letters

Chirped flicker optoretinography for in vivo characterization of human photoreceptors’

frequency response to light

Sławomir Tomczewski, Piotr Węgrzyn, Maciej Wojtkowski, Andrea Curatolo.

Date: 2024

10.1364/OL.514637

The Journal of Biological Chemistry

Restoring retinal polyunsaturated fatty acid balance and retina function by targeting ceramide in AdipoR1-deficient mice

Lewandowski D, Gao F, Imanishi S, Tworak A, Bassetto M, Dong Z, Pinto AFM, Tabaka M, Kiser PD, Imanishi Y, Skowronska-Krawczyk D, Palczewski K.

Date: 2024

10.1016/j.jbc.2024.107291

Vision Research

Two-photon vision – Seeing colors in infrared

Katarzyna Komar

Date: 2024

10.1016/j.visres.2024.108404

Multiwavelength laser doppler holography (MLDH) in spatiotemporal optical coherence tomography (STOC-T)

Dawid Borycki, Egidijus Auksorius, Piotr Węgrzyn, Kamil Liżewski, Sławomir Tomczewski, Ieva Žičkienė, Karolis Adomavičius, Karol Karnowski, Maciej Wojtkowski

Date: 2024

10.1016/j.bbe.2024.03.002

American Journal of Physiology-Lung Cellular and Molecular Physiology

Quantification of smooth muscle in human airways by polarization-sensitive optical coherence tomography requires correction for perichondrium

Michael J. Hackmann, Alvenia Cairncross, John G. Elliot, Siobhain Mulrennan, Kris Nilsen, Bruce R. Thompson ,Qingyun Li, Karol Karnowski, David D. Sampson, Robert A. McLaughlin, Barry Cense,Alan L. James, Peter B. Noble

Date: 2024

10.1152/ajplung.00254.2023

Optica

Large reconfigurable quantum circuits with SPAD arrays and multimode fibers

Adrian Makowski, Michal Dabrowski, Ivan Michel Antolovic, Claudio Bruschini, Hugo Defienne, Edoardo Charbon, Radek Lapkiewicz, and Sylvain Gigan

Date: 2024

10.1364/OPTICA.506943

Biocybernetics and Biomedical Engineering

Imaging the retinal and choroidal vasculature using Spatio-Temporal Optical Coherence Tomography (STOC-T)

Kamil Liżewski, Slawomir Tomczewski, Dawid Borycki, Piotr Węgrzyn, Maciej Wojtkowski,

Date: 2024

10.1016/j.bbe.2023.12.002

Frontiers in Medicine

Two-photon excitation fluorescence in ophthalmology: safety and improved imaging for functional diagnostics.

Kaushik V, Dabrowski L, Gessa L, Kumar N, Fernandes H,

Date: 2024

10.3389/fmed.2023.1293640

Proceedings of the National Academy of Sciences

Distinct mouse models of Stargardt disease display differences in pharmacological targeting of ceramides and inflammatory responses,

Zachary J. Engfer, Dominik Lewandowski, Zhiqian Dong, Grazyna Palczewska, Jianye Zhang, Katarzyna Kordecka, Jagoda Płaczkiewicz, Damian Panas, Andrzej T. Foik, Marcin Tabaka, Krzysztof Palczewski,

Date: 2023

10.1073/pnas.2314698120

Biomedical Optics Express

Long-range frequency-domain optical delay line based on a spinning tilted mirror for low-cost ocular biometry

María Pilar Urizar, Enrique Gambra, Alberto de Castro, Álvaro de la Peña, Daniel Pascual, Onur Cetinkaya, Susana Marcos, and Andrea Curatolo

Date: 2023

10.1364/BOE.501889

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bioRxiv

Ocelli: a new comprehensive method for multimodal single-cell data analysis

Piotr Rutkowski, Marcin Tabaka

Date: 2023

10.1101/2023.10.05.561074

SPIE Proceedings

Optimization-free method for multiple spectrometers alignment in polarization-sensitive optical coherence tomography

Piotr Kasprzycki, Maciej Szkulmowski, Maciej Wojtkowski, Karol Karnowski

Date: 2023

10.1117/12.2670617

Nature Communications

spinDrop: a droplet microfluidic platform to maximise single-cell sequencing information content

Joachim De Jonghe, Tomasz S Kaminski, David B Morse, Marcin Tabaka, Anna L Ellermann, Timo N Kohler, Gianluca Amadei, Charlotte E Handford, Gregory M Findlay, Magdalena Zernicka-Goetz, Sarah A Teichmann, Florian Hollfelder

Date: 2023

10.1038/s41467-023-40322-w

Biomedical Optics Express

Optical beam scanner with reconfigurable non-mechanical control of beam position, angle, and focus for low-cost whole-eye OCT imaging

María Pilar Urizar, Enrique Gambra, Alberto de Castro, Álvaro de la Peña, Onur Cetinkaya, Susana Marcos, and Andrea Curatolo

Date: 2023

10.1364/BOE.493917

Investigative Ophthalmology & Visual Science

Comparison of repeatability of visual thresholds determination for one-and two-photon vision mechanisms

Katarzyna Komar, Juliusz Solarz-Niesluchowski, Marcin Marzejon, Jacek Pniewski, Maciej Wojtkowski

Date: 2023

https://iovs.arvojournals.org/article.aspx?articleid=2787063

Biomedical Optics Express

Laser pulse train parameters determine the brightness of a two-photon stimulus

Marcin Marzejon, Łukasz Kornaszewski, Maciej Wojtkowski, Katarzyna Komar

Date: 2023

10.1364/BOE.489890

Proceedings of the National Academy of Sciences

Stress resilience-enhancing drugs preserve tissue structure and function in degenerating retina via phosphodiesterase inhibition

Jennings C Luu, Aicha Saadane, Henri Leinonen, Elliot H Choi, Fangyuan Gao, Dominik Lewandowski, Maximilian Halabi , Christopher L Sander, Arum Wu, Jacob M Wang, Rupesh Singh, Songqi Gao, Emma M Lessieur, Zhiqian Dong, Grazyna Palczewska, Robert F Mullins, Neal S Peachey , Philip D Kiser, Marcin Tabaka, Timothy S Kern, Krzysztof Palczewski

Date: 2023

10.1073/pnas.2221045120

Technical Digest Series

Flicker optoretinography (f-ORG) with chirped frequency stimulus for retinal tissue characterisation

M. Wojtkowski, S. Tomczewski, P. Węgrzyn, and A. Curatolo

Date: 2023

10.1364/BODA.2023.JTu4B.5

Spatio-temporal optical coherence tomography (STOC-T) for high-resolution imaging of the human and mouse retina in vivo

D. Borycki, P. Węgrzyn, A. Egidijus, W. Kulesza, S. Tomczewski, A. Curatolo, and M. Wojtkowski,

Date: 2023

10.1364/BODA.2023.DTh2A.2

Technical Digest Series

A low-cost, non-mechanical optical beam scanner: experimental proof-of-concept for whole-eye OCT imaging

M. P. Urizar, Á. de la Peña, E. Gambra, A. de Castro, S. Marcos, and A. Curatolo

Date: 2023

10.1364/BODA.2023.DTh2A.4

Technical Digest Series

Clinical prototype of multi-spot air-puff OCT for assessment of corneal biomechanical asymmetry

K. Karnowski, J. Milkiewicz, A. Pachacz, A. Curatolo, O. Cetinkaya, R. Pietruch, A. Consejo, M. Bartuzel, A. Eliasy, A. Abass, A. Elsheikh, S. Marcos, and M. Wojtkowski

Date: 2023

10.1364/BODA.2023.DTh2A.1

Journal of Clinical Investigation

In vivo imaging of the human retina using a two-photon excited fluorescence ophthalmoscope

Jakub Boguslawski, Sławomir Tomczewski, Michal Dabrowski, Katarzyna Komar, Jadwiga Milkiewicz, Grazyna Palczewska, Krzysztof Palczewski and Maciej Wojtkowski

Date: 2023

10.1016/j.xpro.2023.102225

Improved tool tracking algorithm for eye surgery based on combined color space masks

K. Gromada, B. Piotrowski, P. Ciąćka, A. Kurek, and A. Curatolo

Date: 2023

10.1117/12.2654602

SPIE Proceedings

Spatio-temporal optical coherence tomography (STOC-T) focal plane adjustment in the mouse retina aided by a fundus camera

W. Kulesza, K. Łuczkiewicz, P. Węgrzyn, S. Tomczewski, D. Borycki, P. Ciąćka, O. Cetinkaya, M. Wielgo, K. Kordecka, A. Galińska, E. Auksorius, A. Foik, R. Zawadzki, M. Wojtkowski, and A. Curatolo

Date: 2023

10.1117/12.2652956

SPIE Proceedings

Frequency characterization of human photoreceptors’ response to light with the use of chirped flicker stimulus optoretinography

S. Tomczewski, P. Wegrzyn, D. Borycki, M. Wielgo, A. Curatolo, and M. Wojtkowski

Date: 2023

10.1117/12.2649632

SPIE Proceedings

High-speed, in vivo, volumetric imaging of mouse retinal tissue with spatio-temporal optical coherence tomography (STOC-T)

P. Wegrzyn, S. Tomczewski, D. Borycki, W. Kulesza, M. Wielgo, K. Kordecka, A. Galińska, O. Cetinkaya, P. Ciąćka, E. Auksorius, A. Foik, R. Zawadzki, M. Wojtkowski, and A. Curatolo

Date: 2023

10.1117/12.2648893

SPIE Proceedings

Intraoperative ophthalmic OCT system tracking surgical tools at 200 Hz

P. Ciąćka, K. Karnowski, and A. Curatolo

Date: 2023

10.1117/12.2649761

SPIE Proceedings

Low-resource and cost-effective camera-based optical palpation for breast cancer detection and burn scar assessment

Q. Fang, R. Sanderson, S. Choi, A. Taba, A. Curatolo, D. Lakhiani, R. Zilkens, K. Newman, B. Dessauvagie, H. DeJong, F. Wood, C. Saunders, and B. Kennedy

Date: 2023

10.1117/12.2650883

International Journal of Molecular Sciences

Towards a New Biomarker for Diabetic Retinopathy: Exploring RBP3 Structure and Retinoids Binding for Functional Imaging of Eyes In Vivo

Vineeta Kaushik, Luca Gessa, Nelam Kumar, Humberto Fernandes

Date: 2023

10.3390/ijms24054408

Progress in Retinal and Eye Research

From mouse to human: Accessing the biochemistry of vision in vivo by two-photon excitation.

G. Palczewska, M. Wojtkowski, K. Palczewski,

Date: 2023

10.1016/j.preteyeres.2023.101170

Biomedical Optics Express

Estimation of the full shape of the crystalline lens in-vivo from OCT images using eigenlenses

E. Martínez-Enríquez, A. Curatolo, A. de Castro, J. S. Birkenfeld, A. M. González, A. Mohamed, M. Ruggeri, F. Manns, Z. Fernando, and S. Marcos

Date: 2023

10.1364/BOE.477557

22nd Polish-Slovak-Czech Optical Conference on Wave and Quantum Aspects of Contemporary Optics

Methods of determining the contrast sensitivity function for two-photon vision

Oliwia Kaczkoś, Agnieszka Zielińska, Marcin J Marzejon, Juliusz Solarz-Niesłuchowski, Jacek Pniewski, Katarzyna Komar

Date: 2022

10.1117/12.2664174

Advanced Materials Technologies

Microfluidic 3D Printing of Emulsion Ink for Engineering Porous Functionally Graded Materials

Martina Marcotulli, Maria Celeste Tirelli, Marina Volpi, Jakub Jaroszewicz, Chiara Scognamiglio, Piotr Kasprzycki, Karol Karnowski, Wojciech Święszkowski, Giancarlo Ruocco, Marco Costantini, Gianluca Cidonio, Andrea Barbetta

Date: 2022

10.1002/admt.202201244

Aging Cell

Stress induced aging in mouse eye.

Xu Q, Rydz C, Nguyen Huu VA, Rocha L, Palomino La Torre C, Lee I, Cho W, Jabari M, Donello J, Lyon DC, Brooke RT, Horvath S, Weinreb RN, Ju WK, Foik A, Skowronska-Krawczyk D.

Date: 2022

10.1111/acel.13737

Membranes

The Structural Changes in the Membranes of Staphylococcus aureus Caused by Hydrolysable Tannins Witness Their Antibacterial Activity

Olchowik-Grabarek, E.; Sękowski, S.; Kwiatek, A.; Płaczkiewicz, J.; Abdulladjanova, N.; Shlyonsky, V.; Swiecicka, I.; Zamaraeva, M.

Date: 2022

10.3390/membranes12111124

Scientific Reports

Co-axial acoustic-based optical coherence vibrometry probe for the quantification of resonance frequency modes in ocular tissue

R. McAuley, A. Nolan, A. Curatolo, S. Alexandrov, F. Zvietcovich, A. Varea Bejar, S. Marcos, M. Leahy, and J. S. Birkenfeld

Date: 2022

10.1038/s41598-022-21978-8

Technical Digest Series

Functional and Structural Imaging of Retinal Tissue with Spatio-Temporal Optical Coherence Tomography (STOC-T)

P. Węgrzyn, D. Borycki, S. Tomczewski, K. Liżewski, E. Auksorius, A. Curatolo, and M. Wojtkowski

Date: 2022

10.1364/FIO.2022.FW7D.2

Biomedical Optics Express

Continuous-wave parallel interferometric near-infrared spectroscopy (CW πNIRS) with a fast two-dimensional camera

Saeed Samaei, Klaudia Nowacka, Anna Gerega, Żanna Pastuszak, and Dawid Borycki

Date: 2022

10.1364/BOE.472643

IEEE Photonics Journal

Superior Imaging Performance of All-Fiber, Two-Focusing-Element Microendoscopes

Karol Karnowski; Gavrielle Untracht; Michael Hackmann; Onur Cetinkaya; David Sampson

Date: 2022

10.1109/JPHOT.2022.3203219

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eNeuro

Visual System Hyperexcitability and Compromised V1 Receptive Field Properties in Early-Stage Retinitis Pigmentosa in Mice.

Leinonen, H., Lyon, D.C., Palczewski, K., and Foik, A.T.

Date: 2022

10.1523/ENEURO.0107-22.2022

Investigative Ophthalmology & Visual Science

Contrast Sensitivity Function of Two-Photon Vision

Agnieszka Zielinska, Oliwia Kaczkos, Marcin Marzejon, Juliusz Solarz-Niesluchowski, Maciej Szkulmowski, Katarzyna Komar

Date: 2022

https://iovs.arvojournals.org/article.aspx?articleid=2780505

Investigative Ophthalmology & Visual Science

Towards spectral sensitivity curve for two-photon vision mechanism

Marcin Marzejon, Agnieszka Zielinska, Dorota Stachowiak, Grzegorz Sobon, Maciej Wojtkowski, Katarzyna Komar

Date: 2022

https://iovs.arvojournals.org/article.aspx?articleid=2780507

Investigative Ophthalmology & Visual Science

Two-photon excited scanning laser ophthalmoscope enables fundus imaging in healthy volunteers

Grazyna Palczewska; Jakub Boguslawski; Michal Dabrowski; Dorota stachowiak; Grzegorz Sobon; Krzysztof Palczewski; Maciej Wojtkowski

Date: 2022

https://iovs.arvojournals.org/article.aspx?articleid=2782833

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iScience

Spatio-Temporal Optical Coherence Tomography provides full thickness imaging of the chorioretinal complex

Egidijus Auksorius, Dawid Borycki, Piotr Wegrzyn, Bartosz L. Sikorski, Kamil Lizewski, Ieva Zickiene, Mounika Rapolu, Karolis Adomavicius, Slawomir Tomczewski, Maciej Wojtkowski

Date: 2022

10.1016/j.isci.2022.105513

Lab on a Chip

You will know by its tail: a method for quantification ofheterogeneity of bacterial populations using single-cell MICprofiling

N. Pacocha, M. Zapotoczna, K. Makuch, J. Boguslawski, P. Garstecki

Date: 2022

10.1039/d2lc00234e

Physica B: Condensed Matter

Propagation length enhancement of surface plasmon polaritons in ultrafine Au nanodisk array, the role of kinky breather and periodic lump

Morteza A. Sharif, Kousha Hadi, Mehdi Borjkhani

Date: 2022

10.1016/j.physb.2022.413768

Technical Digest Series

Design of a low-cost, versatile, whole-eye scanner for optical coherence tomography

M. P. Urizar, A. de Castro, E. Gambra, O. Cetinkaya, S. Marcos, and A. Curatolo

Date: 2022

10.1364/OCT.2022.CS2E.5

Technical Digest Series

Hysteresis in vibrational resonance modes of model corneas measured with Optical Coherence Tomography Vibrography utilizing a co-axial acoustic stimulation technique and pre-compensation

R. McAuley, A. Nolan, A. Curatolo, S. Alexandrov, F. Zvietcovich, A. Varea, S. Marcos, J. S. Birkenfeld, and M. Leahy

Date: 2022

10.1364/OCT.2022.CTu4E.4

Technical Digest Series

In vivo frequency characterization of human photoreceptors response to a flicker stimulus with optoretinography

S. Tomczewski, P. Wegrzyn, D. Borycki, A. Curatolo, and M. Wojtkowski

Date: 2022

10.1364/OCT.2022.CS3E.1

Technical Digest Series

Simultaneous multi-spot OCT measurements of air induced corneal deformations

K. Karnowski, J. Milkiewicz, A. Pachacz, A. Curatolo, O. Cetinkaya, R. Pietruch, A. Consejo, M. M. Bartuzel, P. Ciąćka, A. Eliasy, A. Abass, A. Elsheikh, S. Marcos, and M. Wojtkowski

Date: 2022

10.1364/OCT.2022.CW3E.3

Nature Communications

In vivo base editing rescues cone photoreceptors in a mouse model of early-onset inherited retinal degeneration.

Choi EH, Suh S, Foik AT, Leinonen H, Newby GA, Gao XD, Banskota S, Hoang T, Du SW, Dong Z, Raguram A, Kohli S, Blackshaw S, Lyon DC, Liu DR, Palczewski K.

Date: 2022

10.1038/s41467-022-29490-3

Biomedical Optics Express

Light-adapted flicker optoretinograms captured with a spatio-temporal optical coherence-tomography (STOC-T) system

Sławomir Tomczewski, Piotr Wegrzyn, Dawid Borycki, Egidijus. Auksorius, Maciej Wojtkowski, Andrea Curatolo

Date: 2022

10.1364/BOE.444567

Pathogens

Both Neisseria gonorrhoeae and Neisseria sicca Induce Cytokine Secretion by Infected Human Cells, but Only Neisseria gonorrhoeae Upregulates the Expression of Long Non-Coding RNAs

Jagoda Płaczkiewicz, Monika Adamczyk-Popławska, Ewa Kozłowska, Agnieszka Kwiatek Journal: Pathogens

Date: 2022

10.3390/pathogens11040394

Diagnostics

Two-Photon Vision in Age-Related Macular Degeneration: ATranslational Study

G. Labuz, A. Zielinska, L. J. Kessler, A. Rayamajhi, K. Komar, R. Khoramnia, G. U. Auffarth

Date: 2022

10.3390/diagnostics12030760

Biomedical Optics Express

Femtosecond Er-doped fiber laser source tunable from 872 to 1075 nm for two-photon vision studies in humans

D. Stachowiak, M. Marzejon, J. Boguslawski, Z. Laszczych, K. Komar, M. Wojtkowski, and G. Sobon

Date: 2022

10.1364/BOE.452609

Scientific Reports

Infrared- and white-light retinal sensitivity in glaucomatous neuropathy

G. Labuz, A. Rayamajhi, K. Komar, R. Khoramnia, G. U. Auffarth

Date: 2022

10.1038/s41598-022-05718-6

Optics Letters

Multimode fiber as a tool to reduce crosstalk in Fourier-domain full-field optical coherence tomography

E. Auksorius, D. Borycki, P. Wegrzyn, I. Zickiene, K. Adomavicius, B. L. Sikorski, M. Wojtkowski

Date: 2022

10.1364/OL.449498

Acta Neurobiologiae Experimentalis

Optical coherence tomography reveals heterogeneity of the brain tissue and vasculature in the ischemic region after photothrombotic stroke in mice

Hubert Dolezyczek, Piotr Kasprzycki, Jakub Wlodarczyk, Maciej Wojtkowski, Monika Malinowska

Date: 2022

10.55782/ane-2022-010

SPIE BiOS

A novel co-axial and acoustic pre-compensation approach for tissue excitation in optical coherence tomography vibrography

R. McAuley, A. Nolan, A. Curatolo, S. Alexandrov, S. Marcos, M. Leahy, and J. Birkenfeld

Date: 2022

https://www.spiedigitallibrary.org/conference-proceedings-of-spie/PC11962/0000/A-novel-co-axial-and-acoustic-pre-compensation-approach-for/10.1117/12.2610707.full

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SPIE BiOS

Air puff-coupled multi-spot OCT for assessment of asymmetries in corneal biomechanics

K. Karnowski, J. Milkiewicz, A. Pachacz, A. Curatolo, O. Cetinkaya, R. Pietruch, P. Ciacka, A. Eliasy, A. Abass, A. Elsheikh, S. Marcos, and M. Wojtkowski

Date: 2022

10.1117/12.2609511

SPIE Proceedings

Corneal biomechanical parameters of keratoconus patients from cross-meridian air-puff deformation optical coherence tomography and finite element modeling

J. Birkenfeld, A. Curatolo, A. Eliasy, E. Martinez-Enriquez, A. Varea, A. M. Gonzalez Ramos, A. Abass, B. Lopes Teixeira, J. Merayo-Lloves, A. Elsheikh, and S. Marcos

Date: 2022

https://journals.spiedigitallibrary.org/conference-proceedings-of-spie/0/PC119620/Corneal-biomechanical-parameters-of-keratoconus-patients-from-cross-meridian-air/10.1117/12.2609816.short

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SPIE Proceedings

Towards spatially mapped frequency response of human photoreceptor length variation with flicker optoretinography

A. Curatolo, S. Tomczewski, P. Wegrzyn, D. Borycki, E. Auksorius, and M. Wojtkowski,

Date: 2022

10.1117/12.2609513

Journal of Clinical Investigation

In vivo imaging of the human eye using a two-photon excited fluorescence scanning laser ophthalmoscope

J. Boguslawski, G. Palczewska, S. Tomczewski, J. Milkiewicz, P. Kasprzycki, D. Stachowiak, K. Komar, M. J. Marzejon, B. L. Sikorski, A. Hudzikowski, A. Gluszek, Z. Laszczych, K. Karnowski, G. Sobon, K. Palczewski, M. Wojtkowski

Date: 2022

10.1172/JCI154218

JCI Insight

Inhibition of ceramide accumulation in AdipoR1–/– mice increases photoreceptor survival and improves vision

Dominik Lewandowski, Andrzej T. Foik, Roman Smidak, Elliot H. Choi, Jianye Zhang, Thanh Hoang, Aleksander Tworak, Susie Suh, Henri Leinonen, Zhiqian Dong, Antonio F.M. Pinto, Emily Tom, Jennings Luu, Joan Lee, Xiuli Ma, Erhard Bieberich, Seth Blackshaw, Alan Saghatelian, David C. Lyon, Dorota Skowronska-Krawczyk, Marcin Tabaka, and Krzysztof Palczewski

Date: 2022

10.1172/jci.insight.156301

Investigative Ophthalmology & Visual Science

Pupillary Light Reflex induced by two-photon vision

A. Zielinska, P. Ciacka, M. Szkulmowski and K. Komar

Date: 2021

10.1167/iovs.62.15.23

ACS omega 7

Characterization of Cyclophilin from Thaumarchaeota Nitrosopumilus maritimus: Implications on the Diversity of Chaperone-like Activity in the Archaeal Domain.

Kaushik, Vineeta and Manisha Goel

Date: 2021

10.1021/acsomega.1c03216

Technical Digest Series

Two-photon excited fluorescence scanning laser ophthalmoscope for in vivo imaging of the human eye

Jakub Boguslawski, Grazyna Palczewska, Michal Dabrowski, Slawomir Tomczewski, Jadwiga Milkiewicz, Dorota Stachowiak, Katarzyna Komar, Marcin Marzejon, Bartosz L. Sikorski, Arkadiusz Hudzikowski, Aleksander Gluszek, Zbigniew Laszczych, Grzegorz Sobon, Krzysztof Palczewski, Maciej Wojtkowski

Date: 2021

10.1364/TRANSLATIONAL.2022.TTu2B.4

Communications Biology

Traumatic brain injury to primary visual cortex produces long-lasting circuit dysfunction

Frankowski, J.C., Foik, A.T., Tierno, A., Machhor, J.R., Lyon, D.C., and Hunt, R.F.

Date: 2021

10.1038/s42003-021-02808-5

Biomedical Optics Express

Estimation of scleral mechanical properties from air-puff optical coherence tomography

David Bronte-Ciriza, Judith S. Birkenfeld, Andres de la Hoz, Andrea Curatolo, James A. Germann, Lupe Villegas, Alejandra Varea, Eduardo Martinez-Enriquez, and Susana Marcos

Date: 2021

10.1364/BOE.437981

Investigative Ophthalmology & Visual Science

The effect of cataract on two-photon visual thresholds

Katarzyna Komar, Marcin J. Marzejon, Anna Matuszak, Bartosz Sikorski, Maciej Wojtkowski

Date: 2021

https://iovs.arvojournals.org/article.aspx?articleid=2775575

Technical Digest Series

Swept-sources for OCT are perceived due to two-photon vision

M.J. Marzejon, L. Kornaszewski, J. Boguslawski, M. Wojtkowski, and K. Komar

Date: 2021

10.1117/12.2614850

APL Photonics

Imaging the small with the small: Prospects for photonics in micro-endomicroscopy for minimally invasive cellular-resolution bioimaging

Gavrielle R. Untracht, Karol Karnowski and David D. Sampson

Date: 2021

10.1063/5.0052258

Biomedical Optics Express

Smartphone-based optical palpation: towards elastography of skin for telehealth applications

Rowan W. Sanderson, Qi Fang, Andrea Curatolo, Aiden Taba, Helen M. DeJong, Fiona M. Wood, and Brendan F. Kennedy

Date: 2021

10.1364/BOE.424567

Investigative Ophthalmology & Visual Science

Improved detection of corneal deformation asymmetries in keratoconus patients using multi-meridian deformation imaging

Judith S. Birkenfeld; Andrea Curatolo; Ashkan Eliasy; Eduardo Martinez-Enriquez; Alejandra Varea; Ana Gonzalez-Ramos; Ahmed Abass; Bernardo Teixeira Lopes; Jesus Merayo-Lloves; Ahmed Elsheikh; Susana Marcos

Date: 2021

https://iovs.arvojournals.org/article.aspx?articleid=2773726

Optics Letters

Multimode fiber enables control of spatial coherence in Fourier-domain full-field optical coherence tomography for in vivo corneal imaging

E. Auksorius, D. Borycki, M Wojtkowski

Date: 2021

10.1364/OL.417178

SPIE Proceedings

Effects of laser pulse duration in two-photon vision threshold measurements

Marcin Marzejon, Lukasz Kornaszewski, Maciej Wojtkowski, Katarzyna Komar,

Date: 2021

10.1117/12.2582735

Biomedical Optics Express

Two-photon microperimetry with picosecond pulses

Marcin Marzejon, Lukasz Kornaszewski, Jakub Boguslawski, Piotr Ciacka, Milosz Martynow, Grazyna Palczewska, Sebastian Mackowski, Krzysztof Palczewski, Maciej Wojtkowski, and Katarzyna Komar

Date: 2020

10.1364/BOE.411168

Analytical Chemistry

High-Throughput Monitoring of Bacterial Cell Density in Nanoliter Droplets: Label-Free Detection of Unmodified Gram-Positive and Gram-Negative Bacteria

Natalia Pacocha, Jakub Boguslawski, Michal Horka, Karol Makuch, Kamil Lizewski, Maciej Wojtkowski, and Piotr Garstecki

Date: 2020

10.1021/acs.analchem.0c03408

XIII Spanish National Meeting on Optics, Sedoptica

Applications of the ImTOPScanner for the investigation of ocular biomechanical parameters

J. Birkenfeld, A. Abass, S. Alexandrov, D. Bronte-Ciriza, A. Curatolo, A. Eliasy, J. German, A. Ramos, A. de la Hoz, K. Karnowski, B. L. Teixeira, E. Martinez-Enriquez, R. McAuley, A. Nolan, J. Solarski, A. Varea, L. Villegas, A. Elsheikh, M. Leahy, J. Merayo-Lloves, M. Wojtkowski, and S. Marcos

Date: 2020

https://livrepository.liverpool.ac.uk/3141961

SPIE Proceedings

Optical Coherence Elastography Imaging Probes

R. W. Sanderson, Q. Fang, A. Curatolo, and B. F. Kennedy

Date: 2020

10.1063/9780735423664_010

Nature Biomedical Engineering

Restoration of visual function in adult mice with an inherited retinal disease via adenine base editing

Suh, S., Choi, E.H., Leinonen, H., Foik, A.T., Newby, G.A., Yeh, W.-H., Dong, Z., Kiser, P.D., Lyon, D.C., Liu, D.R., et al.

Date: 2020

10.1038/s41551-020-00632-6

Industrialization Potential of Optics in Biomedicine i-POB

High-frame rate multi-meridian corneal imaging of air-puff induced deformation for improved detection of keratoconus

Curatolo, A., Birkenfeld, J. S., Martinez-Enriquez, E., Germann, J., Eliasy, A., Abass, A., Solarski, J., Karnowski, K., Wojtkowski, M., Elsheikh, A., and Marcos, S.

Date: 2020

https://livrepository.liverpool.ac.uk/3103534

Journal of Biomedical Optics

Influence of tissue fixation on depth-resolved birefringence of oral cavity tissue samples

Karol Karnowski, Qingyun Li, Anima Poudyal, Martin Villiger, Camile S. Farah, David D. Sampson

Date: 2020

10.1117/1.JBO.25.9.096003

Proceedings of the National Academy of Sciences

Noninvasive two-photon optical biopsy of retinal fluorophores

Grazyna Palczewska, Jakub Boguslawski, Patrycjusz Stremplewski, Lukasz Kornaszewski, Jianye Zhang, Zhiqian Dong, Xiao-Xuan Liang, Enrico Gratton, Alfred Vogel, Maciej Wojtkowski, and Krzysztof Palczewski

Date: 2020

10.1073/pnas.2007527117

Biomedical Optics Express

Multi-meridian corneal imaging of air-puff induced deformation for improved detection of biomechanical abnormalities

Andrea Curatolo, Judith S. Birkenfeld, Eduardo Martinez-Enriquez, James A. Germann, Geethika Muralidharan, Jesús Palací, Daniel Pascual, Ashkan Eliasy, Ahmed Abass, Jędrzej Solarski, Karol Karnowski, Maciej Wojtkowski, Ahmed Elsheikh, and Susana Marcos

Date: 2020

10.1364/BOE.402402

Biomedical Optics Express

Longitudinal in-vivo OCM imaging of glioblastoma development in the mouse brain

Hubert Dolezyczek, Mounika Rapolu, Paulina Niedzwiedziuk, Karol Karnowski, Dawid Borycki, Joanna Dzwonek, Grzegorz Wilczynski, Monika Malinowska, and Maciej Wojtkowski

Date: 2020

10.1364/BOE.400723

Frontiers in Systems Neuroscience

Cortical Inactivation Does Not Block Response Enhancement in the Superior Colliculus

Kordecka, K., Foik, A.T., Wierzbicka, A., and Waleszczyk, W.J.

Date: 2020

10.3389/fnsys.2020.00059

Biomedical Optics Express

Frequency-doubled femtosecond Er-doped fiber laser for two-photon excited fluorescence imaging

Dorota Stachowiak, Jakub Boguslawski, Aleksander Gluszek, Zbigniew Laszczych, Maciej Wojtkowski, and Grzegorz Sobon

Date: 2020

10.1364/BOE.396878

Translational Vision Science & Technology

Keratoconus Detection Based on a Single Scheimpflug Image

Alejandra Consejo; Jędrzej Solarski; Karol Karnowski; Jos J Rozema; Maciej Wojtkowski; D. Robert Iskander

Date: 2020

10.1167/tvst.9.7.36

Journal of Biophotonics

Jones matrix-based speckle-decorrelation angiography using polarization-sensitive optical coherence tomography

Peijun Gong,Qingyun Li,Qiang Wang,Karol Karnowski,David D. Sampson

Date: 2020

10.1002/jbio.202000007

Optics Letters

Computational aberration correction in spatiotemporal optical coherence (STOC) imaging

Dawid Borycki, Egidijus Auksorius, Piotr Wegrzyn, and Maciej Wojtkowski

Date: 2020

10.1364/OL.384796

Biomedical Optics Express

Vectorial birefringence imaging by optical coherence microscopy for assessing fibrillar microstructures in the cornea and limbus

Qingyun Li, Karol Karnowski, Gavrielle Untracht, Peter B. Noble, Barry Cense, Martin Villiger, and David D. Sampson

Date: 2020

10.1364/BOE.382755

Biomedical Optics Express

Crosstalk-free volumetric in vivo imaging of a human retina with Fourier-domain full-field optical coherence tomography

Egidijus Auksorius, Dawid Borycki, and Maciej Wojtkowski

Date: 2019

10.1364/BOE.10.006390

2019 11th International Symposium on Image and Signal Processing and Analysis (ISPA)

Pupil detection supported by Haar feature based cascade classifier for two-photon vision examinations

M. Martynow, A. Zielinska, M. Marzejon, M. Wojtkowski, K. Komar

Date: 2019

10.1109/ISPA.2019.8868706

Biomedical Optics Express

Two-photon microperimetry: sensitivity of human photoreceptors to infrared light

Daniel Ruminski, Grazyna Palczewska, Maciej Nowakowski, Agnieszka Zielinska, Vladimir Kefalov, Katarzyna Komar, Krzysztof Palczewski, and Maciej Wojtkowski

Date: 2019

10.1364/BOE.10.004551

SPIE Proceedings

Solid state versus fiber picosecond infrared lasers applied to two-photon vision tests

M. Marzejon, K. Komar, L. Kornaszewski, M. Wojtkowski

Date: 2019

10.1117/12.2527118

Investigative Ophthalmology & Visual Science

The limits of perception of light by two-photon vision

Katarzyna Komar, Agnieszka Zielinska, Daniel Ruminski, Marcin Marzejon, Piotr Ciacka, Lukasz Kornaszewski, Silvestre Manzanera; Pablo Artal, Maciej Wojtkowski

Date: 2019

https://iovs.arvojournals.org/article.aspx?articleid=2743619

Photonics Letters of Poland

Impact of diurnal IOP variations on the dynamic corneal hysteresis measured with air-puff swept-source OCT

Karol Marian Karnowski, Ewa Mączyńska, Maciej Nowakowski, Bartłomiej Kałużny, Ireneusz Grulkowski, Maciej Wojtkowski

Date: 2018

10.4302/plp.v10i3.848
