OMN 2024
Donostia - San Sebastian

International Conference on Optical MEMS and Nanophotonics

July 28th - August 1st

Organizer

CIC nanoGUNE
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DONOSTIA SAN SEBASTIÁN

Donostia San Sebastián

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INTERNATIONAL CONFERENCE ON OPTICAL MEMS AND NANOPHOTONICS
OMN 2024

Welcome to OMN 2024 in San Sebastian, Spain!

The International Conference on Optical MEMS and Nanophotonics is an annual conference that addresses research topics related to optics and photonics at the micro- and nanoscale. Related applications comprise technology areas such as imaging, communication, sensing, and instrumentation, and encompasses sciences such as biology and medicine, chemistry, and fundamental physics. The conference offers researchers the opportunity to report on their latest findings in the field of Optical MEMS and Nanophotonics and to promote scientific exchange between researchers and engineers from industry and academia.

Optical MEMS and Nanophotonics technologies are enabling the miniaturization of photonic devices and systems that provide new and enhanced capabilities for the Internet of Things (IoT); physical, chemical and bio-sensing; optical computing, storage, and communication; medical instrumentation; optical imaging and displays, among others.

In 2019, the International Steering Committee (ISC) of the OMN Conference voted and called for the 2021 OMN Conference to be held in San Sebastian, and I agreed to host this event as General Chair. Due to the COVID-19 measures, we had to cancel the in-person OMN conference three times (2020 - 2022), and last year we relaunched our conference in Campinas, Brazil.

With great pleasure we welcome you now to this year's OMN Conference in the welcoming city of San Sebastian in the Spanish Basque Country with its beautiful scenery at the Cantabrian Sea, which forms part of the Atlantic coast of northern Spain.

I would like to thank all Plenary and Invited speakers for their willingness to give a special talk, all authors and presenters for their contributions, my co-chairs for all constructive work, all session chairs and committee members for their support, and all the administrative staff from nanoGUNE, TISA, and the Aquarium who made this event possible.

Special thanks go to all the sponsors who contributed to this conference in various ways.

Now it's up to us to make OMN 2024 a great success with unforgettable moments.

Andreas Seifert
General Chair OMN 2024

CHAIRS OF OMN 2024

Andreas Seifert
General Chair

CIC nanoGUNE
San Sebastián, Spain

Frédéric Zamkotsian
Program Chair

Marseille Astrophysics Laboratory, CNRS
Marseille, France

Yoshihiro Taguchi
TPC Chair Optical MEMS

Keio University
Yokohama, Japan

Wei-Chuan Shih
TPC Chair Nanophotonics

University of Houston
Houston, USA

SPONSORS

We acknowledge support from CIC nanoGUNE as hosting institution; IEEE Photonics society for co-sponsoring this conference and giving us the opportunity to publish all papers on their platform IEEE Xplore; the Province Government of Guipúzcoa; the city hall and convention bureau of San Sebastian; the Basque Research and Technology Alliance BRTA; and the Basque Government.

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EXHIBITION

Zurich Instruments

www.zhinst.com

Please visit the desk of Zurich Instruments, a test and measurement company headquartered in Zurich, Switzerland, and part of the Rohde & Schwarz family. Zurich Instruments develops and produces cutting-edge instrumentation for scientists and technologists who work in advanced laboratories and are passionate about phenomena often difficult to measure.

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- **Lock-in amplifiers**
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- **Digitizers**
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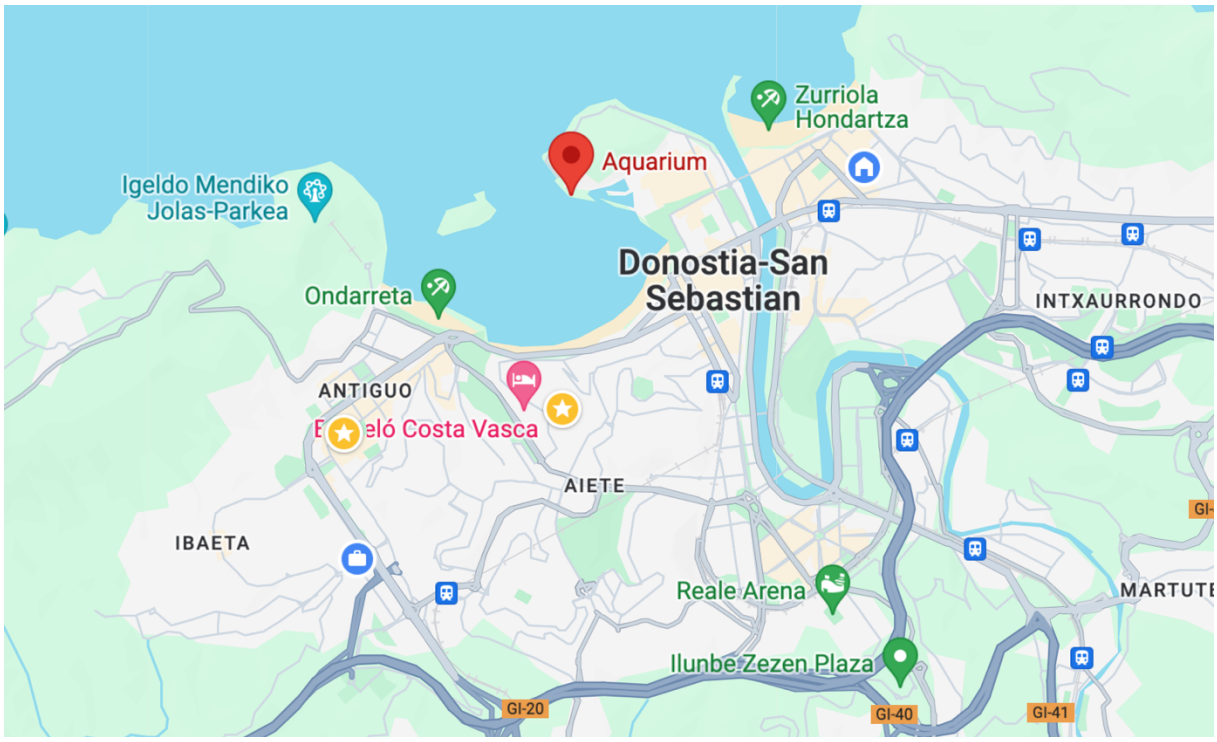
- **Quantum computing control systems**
- **Instruments control software**

GENERAL INFO OF VENUE AND SITE

Donostia—the Basque name for San Sebastian—is unique:

beautiful, splendid, romantic. A unique city, surrounded by beaches and mountains, where quality of life and comfort are paramount. Its main beach, La Concha, is included in the top 5 best beaches in Europe year after year. All these tourist attractions, coupled with the convenience of having a comprehensive range of resources and services, make San Sebastian a great place to organize this conference and come together this summer.

The OMN 2024 conference will take place in the Aquarium of San Sebastian, a historic building that is directly connected to the sea. The Aquarium is in the old port of the city, in the western part of the old town.



FREE CITY BUS TRANSPORT

Thanks to San Sebastian Tourism, we can offer free city bus transportation to all researchers attending the International Conference on Optical MEMS and Nanophotonics 2024. The Dbus company makes it easy for people living in or visiting the city to get around quickly and in an environmentally friendly way. You can find all the lines and tours in the city on the Dbus website and in the Donostia Transport App.

FREE INTERNET AT THE AQUARIUM

Network/Username: OMN2024

Password: EnjoyOMN2024!

PRACTICAL INFORMATION

Currency Euro, commonly used throughout the European Union.

Electric network In San Sebastian, the common voltage is 230 V. The frequency is 50 Hz. Plugs and sockets are type F.

Climate Warm climate, characterized by mild temperatures, high humidity, frequent cloud cover and regular rainfall throughout the year.

Healthcare Hospital Donostia and Policlinica Gipuzkoa – Grupo Quirón Salud.

Time zone GMT + 1 (Paris).

Water Tap water is high-quality and drinkable.

Taxis Taxis usually allow clients to pay with a bank card; however, we suggest asking before getting in.

Banks and cash More than 180 bank branches are open on weekday mornings. There is an extensive network of 24-hour ATMs where you can withdraw money at any time.

Telephone – Use of mobile phones There are no roaming charges in the European Union. If you have a SIM card from an EU member state, you can use your phone without additional charges for calls, text messages or Internet use in another member state.

Bureau de change Bureau de change Navinet (C/Narrika, 12). Open from 10:00 to 22:00, Monday to Sunday (exchange only available for U.S. dollars and British pounds).

Wi-Fi No password is required in most facilities and meeting places. Outdoors it is available in gardens, streets, markets, squares, and bus stops. There is a map of free municipal Wi-Fi areas.

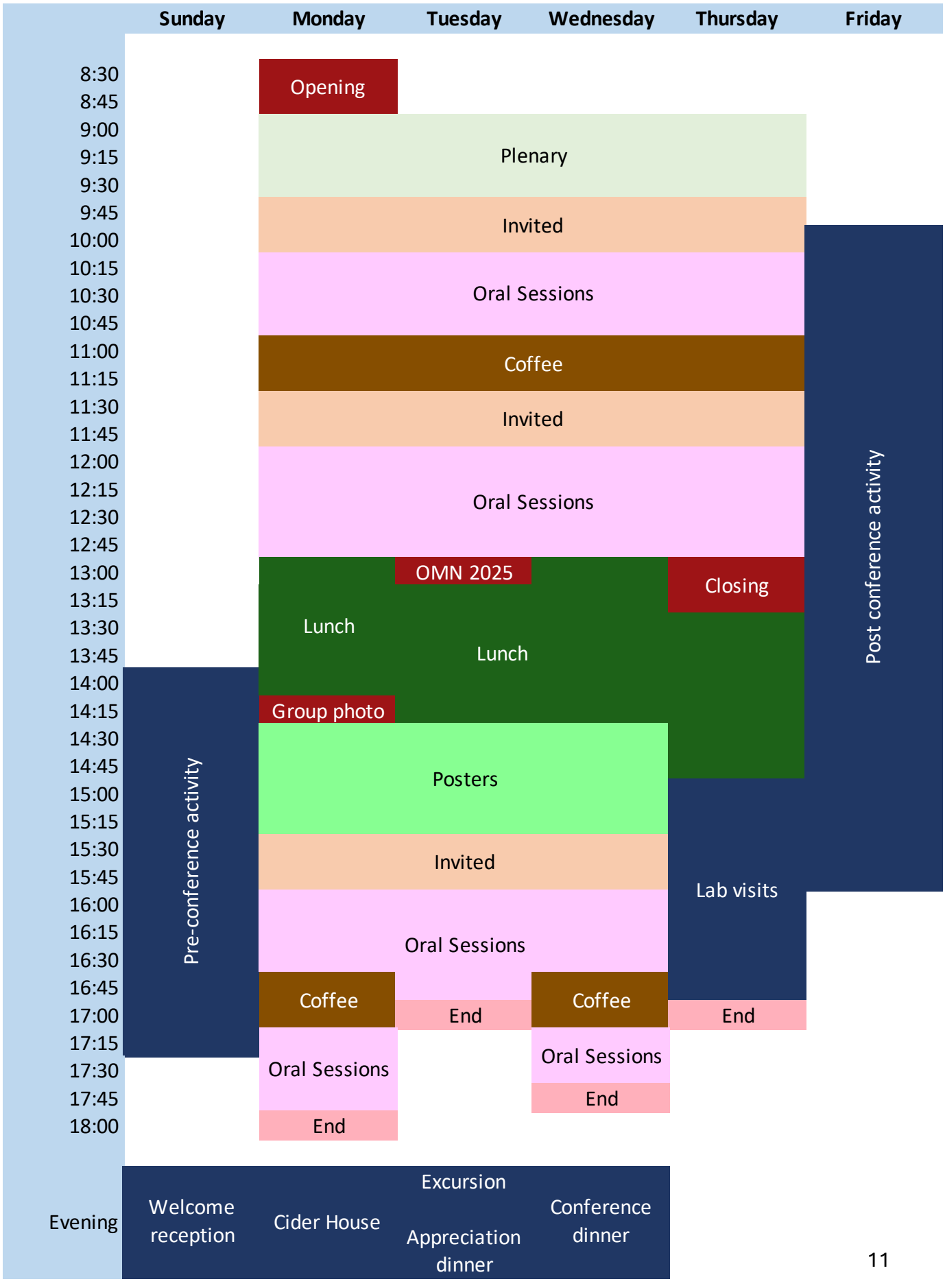
Tourist tax There is no tourist tax.

LANGUAGE

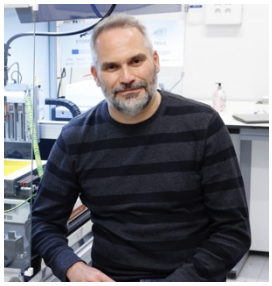
The official language in Spain is Spanish throughout the country. In addition, there are several official regional languages. In the Basque Country (Euskadi), where we are with OMN 2024, most people also speak Basque (Euskera), which is an ancient language, at least more than 3000 years old, and has no connection with other languages and language families around the world. It is not necessary to speak Basque, everyone understands Spanish, but sometimes it can be polite to at least say 'hello' or 'goodbye' in Basque.

English	Spanish	Basque
Hello	Hola	Kaixo, Iepa, Aupa
Good morning	Buenos días	Egun on
Goodbye	Adiós	Agur
See you	Hasta luego	Gero arte
Water	Agua	Ur
Can I have a glass of water?	Un vaso de agua, por favor	Baso bat ur mesedez
or just asking for water ...	Quiero agua	Ura mesedez
Red wine	Vino tinto	Ardo beltza
White wine	Vino blanco	Ardo zuria
Beer	Cerveza	Garagardoa
WC	Aseos/servicios	Komunak
I am hungry	Tengo hambre	Gose naiz
Where is ...?	¿Dónde está?	Non dago ...?
Beach	Playa	Hondartza
I'd like to have this pintxo (please)	Este pintxo (por favor)	Pintxo hau hartu nahiko nuke (mesedez)
Yes	Sí	Bai
No	No	Ez
Thank you	Gracias	Eskerrik asko

OVERVIEW PROGRAM



PLENARY SPEAKERS



Jesús M. de la Fuente

University of Zaragoza
Zaragoza, Spain

Nanoactuactors for therapy and diagnosis

Prof. Jesus M. de la Fuente (Spain, 1975) holds a CSIC research position at the Institute of Nanoscience and Materials of Aragón (INMA). He created his research group, the BIONANOSURF Group, in 2007, becoming internationally recognized in nanomaterials and biofunctionalization. He has extensive experience in the synthesis and characterization of multifunctional nanomaterials and their biofunctionalization with carbohydrates, peptides and nucleic acids for the development of next generation nanobiosensors, using plasmonic nanoparticles and thermal transduction, and nanotherapeutics, such as gene therapy, photothermotherapy, photoacoustics and theranostics. He is co-author of >260 publications with a total of 14.000 citations. He holds 7 patents and has led research projects with a total budget of more than € 6.5 million. He has received two ERC grants and has generated 10% of his budget through collaboration with SMEs.

https://bionanosurf.unizar.es/

Sara Abalde-Cela

International Iberian Nanotechnology Laboratory – INL
Braga, Portugal

**Optofluidic devices for disease monitoring:
playing pinball with cells and plasmonics**

Dr. Sara Abalde-Cela is the Research Group Leader of the Medical Devices Group at the International Iberian Nanotechnology Laboratory (INL), Braga, Portugal. Her research focuses on the development of optofluidic platforms for the diagnosis and monitoring of diseases. Her experience in research ranges from nanotechnology and Raman spectroscopy to microfluidics and microdroplets, as well as liquid biopsy and technology transfer. Sara holds a PhD in nanotechnology by the Universidade de Vigo (Spain, 2013) in which she focused on the development of hybrid plasmonic nanostructures for nanbiosensing. Soon after, she took on a postdoctoral position at the University of Cambridge (UK, 2013-2016) to work on microfluidics and microdroplets applied to single cell monitoring. During her academic career, Sara received research awards and recognitions as well as attracted more than 6 million € in competitive international funding as PI. Apart from book chapters and patents, Sara has published around 150 articles and proceedings. She carried out teaching, science outreach and start-up programs

in Cambridge, London, Boston, Vigo, and Braga. Sara is co-founder and CTO of the start-up RUBYnanomed (from 2018), having raised more than 5 million € for innovation. In 2022 she was nominated as finalist for Women Innovators Prize by the European Innovation Council.

https://inl.int/research-groups/medical-devices/

Yogendra Kumar Mishra

University of Southern Denmark
Sønderborg, Denmark

Tetrapods based smart materials for advanced technologies

Yogendra Kumar Mishra is Professor MSO at Mads Clausen Institute, NanoSYD, University of Southern Denmark (SDU), Denmark. Prior joining to SDU, he worked as group leader at Kiel University, Germany. He completed his habilitation in Materials Science at Kiel University in 2015 and his PhD in Physics at Jawaharlal Nehru University (Inter University Accelerator Centre), New Delhi, India, in 2008. In Kiel, he introduced a new flame-based process for nanostructuring of metal oxide tetrapods and their 3D networks, which has found numerous applications in engineering and biomedical fields. Additionally, tetrapods can be used as templates to create hybrid and new 3D materials. At NanoSYD, he is heading the 'Smart Materials' group, which focuses on the development of new materials for green and sustainable technologies. He is Humboldtian and was recently honored as FRSC Fellow of the Royal Society of Chemistry. Yogendra has published more than 350 publications with more than 18000 citations and an H-index of 72.

https://portal.findresearcher.sdu.dk/en/persons/Mishra

Stefan Sinzinger

Ilmenau University of Technology
Imenau, Germany

Micro and Nanooptics, enabler for applications from advanced imaging to next generation electronics

Stefan Sinzinger is Chair for „Technische Optik" (Optical Engineering) at the Technische Universität Ilmenau, Germany. He received his PhD (1993) and Habilitation (2002) from the Friedrich-Alexander Universität Erlangen-Nürnberg and the Fernuniversität Hagen, respectively. Among other responsibilities he served as president of the „Deutsche Gesellschaft für angewandte Optik" (2016-2021) and was director of the „Zentrum für Mikro und Nanotechnologien" (2018-2021). Since 2021 he is vice president for research and young scientists at the Technische Universität Ilmenau. As co-author (with Jürgen Jahns) of the textbook „Microoptics", Stefan Sinzinger has more than 25 years of experience in research on design and

fabrication of micro- and nanooptical elements as well as microoptical systems integration. The current focus is devoted to reactive ion etching and nanoimprint lithography for the fabrication of innovative resonant micro- and nanooptical elements. The specific interest is systems integration and applications such as light sheet microscopy or optical interconnects, e.g., for reservoir computing.

https://www.tu-ilmenau.de/en/university/departments/department-of-mechanical-engineering/profile/institutes-and-groups/optical-engineering-group

INVITED SPEAKERS

Alexandra (Sasha) Boltasseva

Purdue University
West Lafayette, USA
**Sam Barker Photography*

Tailorable Materials for Dynamic Photonics:
From Metasurfaces to New Physical Phenomena

Transparent conducting oxides (TCOs) and transition metal nitrides (TMNs) are promising platforms for photonic applications as they exhibit enhanced light-matter interactions, particularly near their epsilon near zero region. We explore the tailorability of TCOs/TMNs optical properties and tunable device concepts utilizing these materials.

Alexandra Boltasseva is a Professor of ECE at Purdue University. She received her PhD in electrical engineering at Technical University of Denmark, DTU in 2004. Boltasseva specializes in nanophotonics, quantum photonics, and optical materials. She is the 2023 recipient of the R.W. Wood Prize (Optica, formerly Optical Society of America), 2022 Guggenheim Fellow, 2018 Blavatnik National Award for Young Scientists Finalist and received the 2013 Institute for Electrical and Electronics Engineers (IEEE) Photonics Society Young Investigator Award, 2013 Materials Research Society (MRS) Outstanding Young Investigator Award, the 2011 MIT Technology Review Top Young Innovator (TR35), and the Young Elite-Researcher Award from the Danish Council for Independent Research (2008). She is a Fellow of the National Academy of Inventors (NAI) (2020), MRS (2021), IEEE (2020), Optica (2017), and International Society for Optical Engineers (SPIE) (2015).

Kentaro Iwami

Tokyo University of Agriculture and technology
Tokyo, Japan

Dielectric metasurface for sensing and imaging

In this talk, we report on dielectric metasurfaces and metalenses for sensing and imaging. The design, fabrication, and evaluation results of rotational varifocal metalens, polarization-separating metalens, multicolor holographic movie, and related topics will be presented together with performance analysis with fabrication errors.

Kentaro Iwami got PhD from Tohoku University in 2008. He became an assistant professor at the Tokyo University of Agriculture and Technology (TUAT) in 2008, and a visiting scholar at Stanford University in 2011. Since 2012, he has been an associate professor at TUAT. His research interests are NEMS/MEMS and metasurfaces. Membership: JSME. JSAP, IEEJ, OSJ, IEEE, and ACS.

Vladimir M. Shalaev

Purdue University
West Lafayette, USA

Extreme Space-Time Optics

We first discuss all-optical modulation with single photons using electron avalanche, resulting in record-high nonlinearities. Then we show that transparent conducting oxides (TCOs) operating in the near-zero index (NZI) regime can provide strong single-cycle modulation, thus enabling novel photonic time crystals.

Vladimir M. Shalaev, Scientific Director for Nanophotonics at Birck Nanotechnology Center and Distinguished Professor of Electrical and Computer Engineering at Purdue University, specializes in nanophotonics, plasmonics, optical metamaterials and quantum photonics. Prof. Shalaev has received several awards for his research, including the APS Frank Isakson Prize for Optical Effects in Solids, the Max Born Award of the Optical Society of America for his pioneering contributions to the field of optical metamaterials, the Willis E. Lamb Award for Laser Science and Quantum Optics, IEEE Photonics Society William Streifer Scientific Achievement Award, Rolf Landauer medal of the ETOPIM (Electrical, Transport and Optical Properties of Inhomogeneous Media) International Association, the UNESCO Medal for the development of nanosciences and nanotechnologies, and the OSA and SPIE Goodman Book Writing Award. Prof. Shalaev is recognized as a Highly Cited Researcher in Physics by the Web of Science Group for 6 consecutive years, in 2017-2023. He is a Fellow of the IEEE, APS, SPIE, MRS and Optica.

Arda Deniz Yalçınkaya

Boğaziçi University
Istanbul, Republic of Türkiye

Metamaterial Microdevices for Biomedical sensing and Imaging Applications

Metallic resonant structures that exhibit high quality factors are utilized in various biomedical sensing and medical imaging applications in the radio frequency band. Recent studies related to the application of metamaterial devices to paper-based microfluidic systems, wearable diagnosis systems and medical imaging will be discussed.

Arda Deniz Yalçınkaya has been a faculty member of the Department of Electrical and Electronics Engineering, Bogazici University, Istanbul, Turkey, since 2006, where he is currently a Full Professor. He held research engineer, visiting researcher, and technical consultant positions at IMEC, Leuven, Belgium, CNM, Barcelona, Spain, Koc University and Microvision Inc., Seattle, USA in the past. Dr. Yalçınkaya received his B.Sc. degree from Istanbul Technical University (ITU), M.Sc. and Ph.D. degrees from Technical University of Denmark (DTU), all in Electrical Engineering in 1997, 1999 and 2003, respectively. He received Bogazici University Foundation Excellence in Research Award, Mustafa Parlar Foundation Research Award, and Turkish Academy of Sciences (TUBA), Distinguished Young Scientists Award in 2010, 2011, and 2013, respectively. His experimental research activities resulted in a few proprietary technologies and protected IPs resulting in a start-up company, GlakoLens.

Neelam Kaushik

Tohoku University
Sendai, Japan

AI-Enhanced Portable Scanning Slit Device:
A New Frontier in Ocular Disease Diagnosis

Eye diseases advance silently, frequently without subjective symptoms, demanding regular check-ups for prompt intervention. Here, we introduce an economical, portable scanning slit-light device with AI-driven analysis capabilities for early disease detection. It features a tailored lightweight deep learning model for precise identification of eye structures.

Neelam Kaushik is an Assistant Professor in the Department of Ophthalmology at the Graduate School of Medicine, Tohoku University. She earned her Ph.D. from the Graduate School of Engineering, Department of Material Science, also at Tohoku University. Her research experience spans various fields, including magnetic thin films for recording media applications, nano composite hard magnets, metallic glass thin films for NEMS/MEMS applications, and optical devices for imaging. Currently, her work focuses on developing and fabricating portable and wearable imaging devices for screening various eye diseases, utilizing optical MEMS technology and optical scanners.

Hakan Ürey

Koç University
Istanbul, Republic of Türkiye

AR displays and diagnostics devices enabled by micro-optics and MEMS

My group developed and commercialized various 3D augmented reality displays. I'll briefly review the enabling technologies such as laser MEMS scanners, spatial light modulators, and tunable lenses and their applications in near-eye displays, head-mounted projection displays, head-up displays, and vision simulators for cataract patients.

Professor Hakan Ürey has been a faculty member at Koç University in the College of Engineering since 2001 and has served as the Vice President for Research and Innovation since January 2024. He earned his Bachelor of Science degree in Electrical Engineering from Middle East Technical University in 1992, followed by Master's and Ph.D. degrees in Electrical and Computer Engineering from the Georgia Institute of Technology in 1996 and 1997, respectively. He established the Optical Microsystems Laboratory (OML) at Koç University. He has more than 60 patents, which led to 5 spinoff companies. He received numerous awards, Is a fellow of OPTICA, and recipient of an ERC-Advanced grant. Professor Ürey's research is highly interdisciplinary, focusing on optical microsystems and applications, novel 3D and augmented reality display technologies, and biomedical systems with applications in diagnostic tests, neuroscience, and ophthalmology.

David Dickensheets

Montana State University
Bozeman, USA

Reflecting on MEMS Active Optics

Optical MEMS has a rich history in active optics for dynamic focusing and aberration management. This talk reviews many wavefront manipulation technologies possible with MEMS, novel optical systems they enable, and a new polarization-based approach to active beam control combining both MEMS and Nanophotonics.

Prof. Dickensheets is a Distinguished Professor in the Department of Electrical and Computer Engineering at Montana State University in the USA, and the Director of the Montana Nanotechnology Facility. His research centers on the application of microfabrication technologies to develop active optical devices and miniature instruments for biomedical and industrial imaging, sensing and optical telecommunications. Prof. Dickensheets has been attending Optical MEMS and Nanophotonics for 22 years (since 2002 when it was held in Lugano, Switzerland).

Matthias Wapler

Otto-von-Guericke University Magdeburg
Magdeburg, Germany

Piezo-based active optical elements for microscopy

Integrated piezoelectric actuation allows us to create all types of high-speed active optical elements, such as adaptive prisms, gratings and lenses. In particular, it enables highly compact adaptive glass membrane lenses with integrated chromatic and geometric aberration correction for a variety of microscopy applications.

- Degree in physics from Imperial College London
- 2004 - 2009 Ph.D. in theoretical physics at the Perimeter Institute and U. of Waterloo, Canada, (2005/2006 at the KITP at UC Santa Barbara)
- 2009 - 2011 Postdoc in theoretical physics at Sogang University in Korea, Center for Quantum Spacetime
(2011: Change from abstract geometry and physics in 10+1 dimensional superspacetime to applied geometry and physics in 3+1 dimensions in the lab)
- 2011 - 2022 Researcher at the Department of Microsystems Engineering (IMTEK) at the University of Freiburg, laboratory for micro actuators.
- 2022 Professor for Micro Systems Engineering at the University of Magdeburg
- Research interests: Integrated actuation and measurement concepts, non-linear compliant mechanics, smart materials and adaptive optics.

Jost Adam

University of Kassel
Kassel, Germany

Two-dimensional materials, heterostructures, and perovskites for photonics - a computational approach

New material classes, specifically monolayers, monolayer-based Van der Waals structures, and perovskites, shift the boundaries of photonics. The talk will give an overview of our recent advancements in the field from a computational perspective, from ab initio approaches to machine-learning-based feature prediction.

Prof. Dr. Jost Adam has been head of the Section “Computational Materials and Photonics (CMP),” which is part of FB10 (Institute of Physics) and FB16 (Electrical Engineering and Computer Science) at the University of Kassel since 1 September 2023. After studying mathematics, physics, and computer science, he completed his doctorate in computational electromagnetics at the Christian-Albrechts-Universität zu Kiel (CAU), Germany. This was followed by postdoctoral work in computational photonics in Kiel and at the Photonics Laboratory of the University of California (UCLA), Los Angeles, USA. JA has been Assistant and Associate Professor of Computational Photonics and Head of the Computational Materials Group at the Mads Clausen Institute of the University of Southern Denmark (SDU) since 2014. In 2024, JA was elected an ordinary (full) member of the Center for Interdisciplinary Nanostructure Science and Technology (CINSaT) at the University of Kassel. The Computational Materials and Photonics (CMP) group’s research focus is the theoretical, computational, multiscale, and multiphysical investigation of new materials and nanostructures with applications in photonics, sensing, and renewable energy. Molecular, quantum mechanical, classical, and machine learning approaches are used.

Dmitry Tabakaev

Silicon Austria Labs
Villach, Austria

Compact high-energy nanosecond laser and multiplexing system

High-energy lasers have come a long way from room-sized setups to rack-sized, table-top, and finally matchbox-sized devices. We will discuss recent advances in the miniaturization of high-energy lasers, beam splitting and multiplexing, and applications of such systems.

Dmitry Tabakaev did his PhD and Postdoc in the field of Quantum nonlinear optics in the University of Geneva. He is currently a Scientist at the Silicon Austira Labs, dealing with high-power laser miniaturization and applications, laser beam delivery systems and laser sensing for space and semiconductor industries.

Sivan Trajtenberg-Mills

Massachusetts Institute of Technology (MIT)
Cambridge, USA

Leveraging conventional CMOS technology for metal optics nanophotonics

Repurposing the back-end metal layers in a bulk CMOS process offers new possibilities for metal optics fabrication that are directly integrated with electronics, cheap, scalable, reproducible, allow for multi-layered structures with high resolution. I demonstrate this via a high speed liquid crystal plasmonic modulator.

Dr. Sivan Trajtenberg Mills is a postdoctoral researcher in the Quantum Photonics lab led by prof. Dirk Englund at the Massachusetts Institute of Technology (MIT), MA, USA. Her research is focused on development of optical tools, algorithms and devices for quantum control. She received her Ph.D from Tel Aviv University, studying structured light in second order nonlinear interactions under supervision of prof. Ady Arie. She received the Schmidt postdoctoral award for women in STEM, the VATAT quantum fellowship for postdoctoral researchers. For her PhD, she received an excellence in research award from TAU and KLA, an excellence in teaching award from TAU, the Shulamit Aloni fellowship and the Weinstein Institute for Signal Processing award.

OMN 2024 AWARDS

Following the tradition of former OMN conferences, we will give two awards, one for the Best Paper Award, one for the Best Poster Award. The awardees will be announced during the conference dinner on Wednesday evening, the 31st of July.

All manuscripts have been reviewed by three independent reviewers from the Technical Program Committee (27 members). The grading by the reviewers is the primary criterion for the Best Paper Award. The five highest graded manuscripts were selected for the final competition in which three members of the International Steering Committee (ISC) will evaluate again the final manuscripts. In addition, the presenting authors will give a one-minute pitch presentation about their paper to said three ISC members, which will be considered together with the quality of the paper for the Best Paper Award.

For the Best Poster Award, all posters are considered independent of the grading of the corresponding paper. ISC members will assess the posters and discuss the research topics with the respective poster presenters.

FULL PROGRAM, ORAL SESSIONS

MONDAY, 29 JULY

8:00 **Registration**

8:30 **Opening ceremony**

9:00 **Plenary: JESÚS M. DE LA FUENTE** - University of Zaragoza, Zaragoza, Spain
Nanoactuactors for therapy and diagnosis

Session 1: Design and optimization
Chair: Young Min Song, Gwangju Institute of Science and Technology, South Korea

9:45 **Invited: ALEXANDRA BOLTASSEVA** - Purdue University, West Lafayette, USA
Tailorable Materials for Dynamic Photonics: From Metasurfaces to New Physical Phenomena

10:15 **SIMON ANS** - LAM - Laboratoire d'Astrophysique de Marseille, Marseille, France
Nanostructured blazed gratings for broadband high efficiency spectro-imagers by topology optimization. **P44**

10:30 **ANUP SHRIVASTAVA** - University of Kassel, Kassel, Germany
Ultra-Thin TMDC Transport Layers for Perovskite Solar Cell Design. **P89**

10:45 **WEI ZHANG** - Shenzhen Technology University, Shenzhen, China
The design and fabrication of terahertz metamaterials device based on microfluidics. **P115**

11:00 Coffee

Session 2: Resonators on MOEMS
Chair: Wibool Piyawattanametha, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand

11:30 **Invited: KENTARO IWAMI** - Tokyo University of Agriculture and Technology, Tokyo, Japan
Dielectric metasurface for sensing and imaging

12:00 **JASMIN SPETTEL** - Silicon Austria Labs GmbH, Villach, Austria
Optical Ring Resonators in Sputtered Aluminum Nitride on Insulator for Integrated Photonic MEMS. **P34**

12:15 **MARC-ANTOINE BIANKI** - École Polytechnique de Montréal, Montréal, Canada
Inkjet printing of polymeric optical resonators for multi-gas sensing. **P35**

12:30 **TIAGO NEVES DE MELLO** - Toyohashi University of Technology, Toyohashi, Japan
Development of Graphene Resonant Sensor with PIN Photodiode for On-Chip Mass Measurement. **P72**

12:45 **RÉGIS GUERTIN** - École Polytechnique de Montréal, Montréal, Canada
Polymer-functionalized on-chip Fabry-Perot interferometer for CO2 and CH4 sensing. **P58**

13:00 Lunch

14:30 **Poster Session 1**

Session 3: Nanophotonics I
Chair: Guangya Zhou, National University of Singapore, Singapore

15:30 **Invited: VLADIMIR M. SHALAEV** - Purdue University, West Lafayette, USA
Extreme Space-Time Optics

16:00 **SALVADOR POVEDA-HOSPITAL** - École Polytechnique de Montréal, Montréal, Canada
PIN-PMN-PT electro-optic phase modulator. **P68**

16:15 **LE DAI** - Beijing Institute of Technology, Beijing, China
Active tunable metalens based on "rolling shutter" MEMS. **P73**

16:30 **DAN MAROM** - The Hebrew University, Jerusalem, Israel
Multi-Core Fiber Tip Optical Excitation/Collection of NV-diamond Quantum Magnetic Resonance Sensor. **P92**

16:45 Coffee

17:15 **CÉDRIC LEMIEUX-LEDUC** - École Polytechnique de Montréal, Montréal, Canada
Waveguide-coupled GeSn membranes for mid-infrared silicon photonics. **P98**

17:30 **JI-EUN YEO** - Gwangju Institute of Science and Technology (GIST), Gwangju, Republic of Korea
Programmable Plasmonic-Nanopixels for High-Density Chromatic Information Encryption. **P52**

17:45 **IVAN ALDAYA** - São Paulo State University, São Paulo, Brazil
Multi-objective optimization of SOI-based Mach-Zehnder modulators employing deep neural networks and a non-dominant genetic algorithm. **P67**

18:00 End Monday

TUESDAY, 30 JULY

9:00 **Plenary: SARA ABALDE-CELA** - International Iberian Nanotechnology Laboratory (INL), Braga, Portugal
Optofluidic devices for disease monitoring: playing pinball with cells and plasmonics

Session 4: Nano-bio-photonics
Chair: Igal Brener, Sandia National Laboratories, Albuquerque, USA

9:45 **Invited: ARDA DENIZ YALÇINKAYA** - Boğaziçi University, Istanbul, Turkey
Metamaterial Microdevices for Biomedical sensing and Imaging Applications

10:15 **HARUN HANO** - CIC nanoGUNE, San Sebastián, Spain
Raman Spectroscopy Detects Biochemical Signatures in Non-Small Cell Lung Cancer. **P16**

10:30 **HUGO E. HERNÁNDEZ-FIGUEROA** - University of Campinas, Campinas, Brazil
Plasmonic nanoantennas for biosensing and monitoring of cell activity. **P18**

10:45 **ENEKO LOPEZ** - CIC nanoGUNE, San Sebastián, Spain
Surface-Enhanced Raman Spectroscopy for Early Detection of Alzheimer's Disease. **P21**

11:00 Coffee

Session 5: MOEMS scanners I
Chair: Hakan Ürey, Koç University, Istanbul, Turkey

11:30 **Invited: NEELAM KAUSHIK** - Tohoku University, Sendai, Japan
AI-Enhanced Portable Scanning Slit Device: A New Frontier in Ocular Disease Diagnosis

12:00 **SYLWESTER BARGIEL** - FEMTO-ST Institute, University of Franche-Comté, Besançon, France
Towards all-Silicon Micro-Mirror Array for space applications. **P49**

12:15 **TENG PAN** - Beijing Institute of Technology, Beijing, China
Low Crosstalk Electrothermal Micromirrors For High-speed Resonant Scanning. **P20**

12:30 **HENGZHANG YANG** - Beijing Institute of Technology, Beijing, China
A Robust Electrothermal Micromirror Based on Photosensitive Polyimide (PSPI) - Al Bimorphs. **P25**

12:45 **TOMOYA TSUTSUI** - Keio University, Yokohama, Japan
Fabrication and characterization of VO2 kirigami electrothermal MEMS actuator. **P59**

13:00 Lunch

14:30 **Poster Session 2**

Session 6: MOEMS scanners II
Chair: Onur Ferhanoğlu, Istanbul Technical University, Turkey

15:30 **Invited: HAKAN ÜREY** - Koç University, Istanbul, Turkey
AR displays and diagnostics devices enabled by micro-optics and MEMS

16:00 **ÇAĞLAR ATAMAN** - University of Freiburg, Freiburg, Germany
Potential and limitations of retrofitting commercial microscopes with refractive adaptive optics. **P57**

16:15 **HUA WANG** - Beijing Institute of Technology, Beijing, China
Design and characterization of low dynamic deformation electrostatic micromirrors. **P23**

16:30 **JUNHUI WU** - National University of Singapore, Singapore
MEMS Rotary Transmissive Grating Enabling Ultra-compact Near-Infrared Laser Scanner. **P71**

16:45 **PARVIZ ZOLFAGHARI** - Koç University, Istanbul, Turkey
Non-Resonant and Resonant 2D Quasi-Static PZT MEMS Scanners for LiDAR Applications. **P102**

17:00 End Tuesday

WEDNESDAY, 31 JULY

9:00 **Plenary: YOGENDRA KUMAR MISHRA** - University of Southern Denmark, Sønderborg, Denmark
Tetrapods based Smart Materials for Advanced Technologies

Session 7: MOEMS shutters
Chair: Çağlar Ataman, University of Freiburg, Germany

9:45 **Invited: DAVID DICKENSHEETS** - Montana State University, Bozeman, USA
Reflecting on MEMS Active Optics

10:15 **XINYU DING** - Beijing Institute of Technology, Beijing, China
An Improved Power-efficiency Microshutter Array with Thermal Isolation for Lighting Control. **P24**

10:30 **ROLAND DONATIELLO** - University of Kassel, Kassel, Germany
Recent Progress in Clear View Improvement through MEMS Smart Glasses. **P82**

10:45 **BASMA ELSAKA** - University of Kassel, Kassel, Germany
Casimir Forces leading to 3D self-assembled paired metallic microshutters. **P83**

11:00 Coffee

Session 8: Micro-optics
Chair: Frédéric Zamkotsian, Marseille Astrophysics Laboratory, CNRS, France

11:30 **Invited: MATTHIAS WAPLER** - Otto von Guericke University Magdeburg, Magdeburg, Germany
Piezo-based active optical elements for microscopy

12:00 **RALF BAUER** - University of Strathclyde, Glasgow, UK
Exploration of 3D-printed lenses in a confocal MEMS microscope concept. **P43**

12:15 **YOUNG-GIL CHA** - Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea
Ultrathin Microlens and Microprism Array Camera for Hemispherical Imaging and Detection. **P46**

12:30 **JAE-MYEONG KWON** - Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea
Ellipsoidal Microlens Array Camera with Offset Apertures for Large-angle Imaging. **P62**

12:45 **OLAV SOLGAARD** - Stanford University, Stanford, USA
Tunable Directional Couplers for High Contrast Optical Meshes. **P99**

13:00 Lunch

14:30 **Poster Session 3**

Session 9: Nanophotonics II
Chair: Hugo Enrique Hernández Figueroa, University of Campinas, Brazil

15:30 **Invited: JOST ADAM** - University of Kassel, Germany
Two-dimensional materials, heterostructures, and perovskites for photonics - a computational approach

16:00 **DI ZHOU** - Interuniversity Microelectronics Centre (imec), Leuven, Belgium
A 300mm silicon nitride photonic platform for ultra low loss in the visible spectrum. **P28**

16:15 **IGAL BRENER** - Sandia National Laboratories, Albuquerque, USA
Nonlinear semiconductor metasurfaces: from entangled photon generation to Terahertz applications. **P36**

16:30 **ZEFENG XU** - National University of Singapore, Singapore
Lithium Niobate Ferroelectric Non-volatile Switch. **P22**

16:45 Coffee

17:15 **WEI CHENG** - Southeast University, Nanjing, China
Experimentally Demonstrating a Programmable and Multi-Function Integrated Optical Filter Based on a CROW and Double Injection Configuration. **P32**

17:30 **JAEYOUN (JAY) KIM** - Iowa State University, Ames, USA
Achieving structural coloring with low-index polymer meta-pixels by multipole-based design. **P38**

17:45 End Wednesday

THURSDAY, 1 AUGUST

9:00 **Plenary: STEFAN SINZINGER** - Ilmenau University of Technology, Ilmenau, Germany
Micro - and Nanooptics - enabler for applications from advanced imaging to next generation electronics

Session 10: Imaging and Display
Chair: Yves-Alain Peter, Ecole Polytechnique de Montréal, Canada

9:45 **Invited: DMITRY TABAKAEV** - Silicon Austria Labs, Villach, Austria
Compact high-energy nanosecond laser and multiplexing system

10:15 **ZHIHAN XU** - Hong Kong Polytechnic University, Hong Kong
High-quality object reconstruction using correspondence imaging through dynamic scattering media. **P14**

10:30 **MARYAM ABEDI** - CIC nanoGUNE, San Sebastián, Spain
Degenerate Frequencies Create Sensing Patterns for Single-Pixel Imaging. **P17**

10:45 **HYO EUN JEONG** - Gwangju Institute of Science and Technology (GIST), Gwangju, Republic of Korea
Low-Powered, Full-Color Reflective Display based on Electrochromic Resonator. **P53**

11:00 Coffee

Session 11: 3D-printed MOEMS

Chair: Ralf Bauer, University of Strathclyde, Glasgow, United Kingdom

11:30 **Invited: SIVAN TRAJTENBERG-MILLS** - Massachusetts Institute of Technology (MIT), Cambridge, USA
Leveraging conventional CMOS technology for metal optics nanophotonics

12:00 **YUKI MATSUOKA** - Keio University, Yokohama, Japan
Design of focus-tunable freeform microlens printed on kirigami MEMS actuator. **P61**

12:15 **FLORIAN LUX** - University of Freiburg, Freiburg, Germany
Monolithically 3D nano-printed MEMS lens scanner for rapid focus control. **P64**

12:30 **KUTER ERDIL** - Istanbul Bilgi University & Istanbul Technical University, Istanbul, Turkey
A 3D-Printed Magnetic Focus Actuator for Laser Scanning Capsule Endoscopy. **P80**

12:45 **AYBÜKE ÇALIKOĞLU** - University of Freiburg, Freiburg, Germany
3D nano-printed bistable electromagnetic microlens actuator for reconfigurable endomicroscopes. **P88**

13:00 **Closing**

13:30 Lunch

15:00 End Thursday

POSTER SESSIONS

Each day, all posters are displayed, however, only one third is 'active'. Presenters must be at their poster only at the day indicated in the subsequent program.

MONDAY, 29 JULY

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P3: SOMAYYEH ASGARI, TAPIO FABRITIUS
Graphene-based Multi-band Terahertz Anisotropic Metamaterial Absorber Composed of Square-Shaped Resonator Array Featuring Three Apertures

P13: QIAN SONG, WEN CHEN, QING HUO LIU
Ghost imaging through dynamic scattering media based on expectation estimation correction

P27: KAI-HUNG LO, BO-XIAN KE, MING-CHANG M. LEE
Demonstration of a non-invasive optoelectronic probe for monitoring the phase information of a tunable 2-by-2 Mach-Zehnder interferometer in Si photonic circuits

P29: NGA P PHAM, JOHN M. O'CALLAGHAN, VITTAL PRAKASAM, PIETER NEUTENS, JORIS CEUPPENS, JAKOB VISKER, DI ZHOU, PHILIPPE HELIN
Transfer of a high temperature LPCVD-SiN photonic layer on wafers with thermal budget limitations

P30: DONGYU WANG, GUOHUA HU, YIPING CUI
Generation of Linearly Frequency-Modulated Pulses with Large Time-Bandwidth Products Using a Cascaded Grating-Assisted Spectral Shaper

P31: YAOHUI SUN, GUOHUA HU, YIPING CUI
Programmable Micro-ring Element with Asymmetric-MZI-Assisted for Dual-tunability

P40: JAEYOUN (JAY) KIM, RABIUL ISLAM SIKDER, MYUNG-GI JI
Highly Nonlinear Behavior of UV-curable Photopolymer during Low-Pressure Nanoimprinting

P47: JIN WANG, PICE CHEN, DONALD A. WALKO, JINXING JIAN, JIAN ZHOU, DANIEL LOPEZ
MEMS as Ultrafast X-ray Optics for Manipulating X-ray Pulses with Picosecond Resolution

P48: JOO HWAN KO, DONG HYUN SEO, SE YEON KIM, YOUNG MIN SONG
Electrically Programable Tamm Plasmon for Broadband Optical Neuromorphic Computing

P54: KIKO TANAKA, YOSHIHIRO TAGUCHI, MASAAKI HASHIMOTO
Fabrication of a Soft Photothermal Microactuator Using Two-Photon Polymerization and Vacuum Filling

P56: TIANZHOU CHEN, YOSHIHIRO TAGUCHI, MASAAKI HASHIMOTO
Bimorph Thermal Microactuator Fabricated by Additive and Subtractive Femtosecond Laser Processing

P65: FLORIAN LUX, AYBÜKE ÇALIKOĞLU, CAROLIN KLUSMANN, MATTHIAS HILLENBRAND, ÇAĞLAR ATAMAN
Dual-axis fiber-optic distance sensor for smart vitrectomes

P97: MORTEZA TEYMOORI, ARDA DENIZ YALÇINKAYA
Stopband Fano Resonance Terahertz Metamaterial via Conductive Coupling

P101: EZGI SENTURK, CEYDA KOKSAL, AHMET CAN ERTEN, ONUR FERHANOĞLU
A PDMS Micropillar Waveguide-based Microfluidic Viscosity Sensor

P104: XIAOHUI YANG, JIAHAO CHEN, MUSTAQIM SIDDI QUE ISKHANDAR, MUHAMMAD HASNAIN QASIM, GUILIN XU, HARTMUT HILLMER
Investigation on Bistable Closing Behaviors of Metallic MOEMS Micromirrors with Various Initial Opening Angles

TUESDAY, 30 JULY

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Negative tone resist for grey-scale electron beam lithography

P55: RIZWAN RAFIQUE, ANTONINO LA MAGNA, ANTONIO MIO, SALVATORE PATANÈ, ROSARIA A. PUGLISI.
Transversal plasmon resonance observed in tapered silicon nanowires

P63: RONEY DAS MERCES CERQUEIRA, ANDERSON DOURADO SISNANDO, VITALY FELIX RODRIGUEZ ESQUERRE
Machine Learning Design of Multimode Interference Devices

P66: MIRIELE CARVALHO PAIM, VITALY FELIX RODRIGUEZ ESQUERRE
Angular dependent propagation in tilted multilayered structures

P69: PAULINA CASTRO RODRÍGUEZ, PETER STEENEKEN, WOUTER WESTERVELD, RICHARD NORTE
Modelling and optimization of a photonic MEMS microphone

P70: SAJJAD HABASHI YOUVALARI, ONUR FERHANOĞLU, ARDA DENIZ YALÇINKAYA
Optically Powered CMOS-MEMS Integration for Optical Transmission of MRI Signals

P84: PHILIPP KÄSTNER, HABIB UR REHMAN, ROLAND DONATIELLO, BASMA ELSAKA, MD KAMRUL HASAN, HARTMUT HILLMER
Ring-shaped MEMS Shutter Arrays for Interference Microscopy: Designs, Fabrication, Characterization

P85: MD KAMRUL HASAN, MUSTAQIM S. Q. ISKHANDAR, PHILIPP KÄSTNER, SHILBY BABY, ROLAND DONATIELLO, HARTMUT HILLMER
2D Actuatable Micromirror Arrays for Smart Windows: Elimination of Stress Induced Cracks in Metallic MEMS Structures

P87: YUCHUN ZHU, AMIRALI ARABMOHEGHI, CLAUDIO ALEJANDRO JARAMILLO CONCHA, DARIN MERCHANT, NIELS QUACK AND CHRISTOPHE GALLAND
Fiber-Coupled Absorption-based Quantum Sensing with Nitrogen Vacancy Ensembles in a Suspended Diamond Photonic Cavity

P90: GILLIARD N. MALHEIROS-SILVEIRA
Silicon Nitride Microring Resonator with Metamaterial Side Cladding for Sensing

P91: LAURENT MOLLARD, DAIVID FOWLER, SYLVAIN GUERBER, CHRISTEL DIEPPEDALE, GWENAEL LE RHUN, ANTOINE HAMELIN
Enhanced 2D Beam Scanning: Optical-Phase-Array on Piezo-Cantilever

P93: JIAHAO CHEN, XIAOHUI YANG, MD KAMRUL HASAN, MSQ ISKHANDAR, ROLAND DONATIELLO, HARTMUT HILLMER
Micromirror Arrays for Light Steering Smart Window Applications: Achieving Larger Spans of Opening Angles

P94: WENCHAO ZHANG, WENLONG JIAO, YUE TANG, HUIKAI XIE
A Double-Sided Electrothermal Micromirror Array With Drive Resistance Compensation

P95: TAKUMA ENDO, KOSUKE MORINAKA, YUTO MASUDA, TAKAYUKI KIBA, MIDORI KAWAMURA
Investigation of Mode Coupling Effect on Emission Spectrum of Organic Emitter in Microcavity with Plasmonic Multilayered Films

P96: IVAN ALDAYA, FRIDA FLORES-RIVERA, GRETHELL PÉREZ-SÁNCHEZ, YOLOTZIN MEDINA-VELÁZQUEZ, RODOLFO LÓPEZ-ROMERO, LEANDRA ABREU
Erbium-doped zinc-sodium phosphate glasses as high-gain material for integrated photonics

P107: HADI MIRZAJANI, PARVIZ ZOLFAGHARI AND HAKAN ÜREY
Implantable Integrated Optical Device for in-vivo Phototherapy

Poster Session III, 14:30 - 15:30

P100: MARCO KUENNE, THOMAS KUSSEROW, BERND WITZIGMANN, HARTMUT HILLMER
Modifying the complex refractive index of thin-films for nano-optical applications

P105: MD KAMRUL HASAN, MUSTAQIM S. Q. ISKHANDAR, SOHAN NANDAKUMAR JUVALE, SHILBY BABY, JIAHAO CHEN, HARTMUT HILLMER
Overcoming Pull-in Limitations of Optical MEMS Based Micromirror Arrays Using Structured Bottom Electrodes

P106: SERGIO QUINTERO, MARIA RELVAS, FERNANDO NODAL, SARA ABALDE-CELA, LORENA DIEGUEZ
Portable Raman platform for SERs droplets microfludics

P108: PARVIZ ZOLFAGHARI, FAIK OZAN OZHAN, HAKAN ÜREY
Pupil Center Tracking with a Quadrant Photodetector Using Bright Pupil Techniques

P109: ALESSIO MIRANDA, SANDER RENIERS, JASPER PIJL, JOS VAN DER TOL, KEVIN WILLIAMS, XAVEER LEIJTENS
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Silicon Nitride Microring Resonator with Slot Waveguide and Metamaterial Side Cladding for Sensing Applications

P113: FLAVIO SILVA SANTOS, VITALY FELIX RODRIGUEZ ESQUERRE
Effects of the Refractive Index Data Set on Silver-Graphene Metamaterial Absorber

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Development of Optical MEMS Gyroscopes with Integrated Interferometer and VCSEL Readout

P116: ANUP SHRIVASTAVA, SHIVANI SAINI, SANJAI SINGH, JOST ADAM
Atomistic Modeling of Sb/h-hBN heterostructure for potential optoelectronic applications

P117: NEELESH GUPTA, ANUP SHRIVASTAVA, JOST ADAM
Electronic, Stability and Optical properties of Strained Germanene monolayers: A DFT analysis

P118: YOUNG MIN SONG, MIN SEOK KIM, JINHONG PARK, DAE-HYEONG KIM
Foveated, multi-spectral imaging systems inspired by avian eyes

P119: LAURE SÈNE, RÉGIS GUERTIN, YVES-ALAIN PETER
Optimization of Fabry-Perot Interferometer Performance Through Low Mirror Roughness

P120: RAJEEV RANJAN, GIOVANNI COSTA, MARIA ANTONIETTA FERRARA, MARIO SANSONE, LUIGI SIRLETO
Noise investigation in femtosecond stimulated Raman scattering based on three femtosecond laser sources microscopy

SOCIAL PROGRAM

SUNDAY, 28 JULY

Discover San Sebastian, 14:00 - 18:00

A guided tour is offered to discover the most important places in the city. We have organized an excursion to Santa Clara Island, which was declared a Historic Center of National Interest 40 years ago, including a visit to Hondalea, the lighthouse on the highest point of the island. This activity may be subject to change due to weather conditions.

After the boat trip to the island, we take a walk through the city center and the old town.

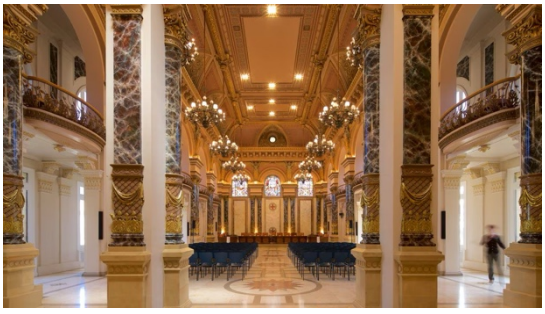
We will meet at 14:00 near the old town of San Sebastian. The exact location will be communicated to the participants who have registered for this activity a few days in advance.

Capacity: 50 people

Price: 20€ VAT included (tickets must be purchased through the registration form).

Welcome Reception at the City Hall, 18:30

In the evening, the city of San Sebastian will welcome the International Conference on Optical MEMS and Nanophotonics with a cocktail in the City Hall. This is an informal get-together with drinks and pintxos, which gives us the opportunity to network. Partners and family are also welcome.



SOCIAL PROGRAM

MONDAY, 29 JULY

Cultural dinner in Cider House, 20:00, *departure by bus*. Dinner at 20:30

A traditional dinner at Iparragirre Sagardotegia in Hernani, a cider house that has been making cider since the 15th century, will serve the typical cider house menu, which consists of cod omelette, fried cod with peppers, grilled T-bone steak (750 g for two people) and various desserts, in addition to the certified quality cider. A vegetarian menu will also be offered. The OMN2024 organization will provide bus transportation.

Price: 65€ VAT included (tickets must be purchased through the registration form).

SOCIAL PROGRAM

TUESDAY, 30 JULY

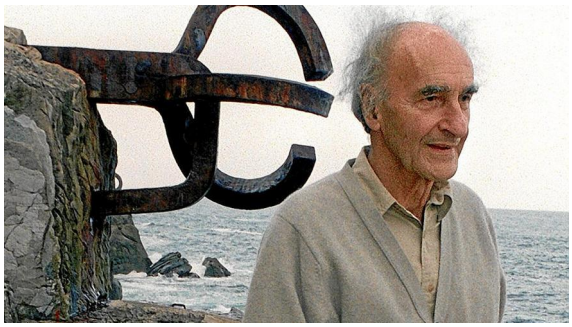
Visit at the museum Chillida Leku, 17:30, *departure by bus*

"One day I dreamed of a utopia: to find a space where my sculptures could rest, and people could walk between them as if through a forest."

Visiting Chillida Leku is a unique experience. This museum is the perfect fusion between art and nature, where the sculptures of Eduardo Chillida are integrated into the landscape. As the artist said, the visitor should walk through this space guided by the "aroma" of the works. The OMN2024 organization provides bus transport.

Capacity: 55 people (in case there were more requests to participate in this activity, we would try to enlarge the group).

Price: 35€ VAT included (tickets must be purchased through the registration form).



SOCIAL PROGRAM

WEDNESDAY, 31 JULY

OMN Gala Dinner, 20:00, *arrival*. 20:30 traditional music, 21:00 dinner

All participants are invited to a fantastic gala dinner at the Tenis Ondarreta Restaurant, which is located in the Real Club de Tenis de San Sebastián and has a panoramic terrace with magnificent views of the bay. It will be a unique opportunity to meet other people and spend a pleasant evening.

To get to the restaurant, you can either walk along the beach/bay (La Concha) or take public transportation, which you can easily find on Google Maps.

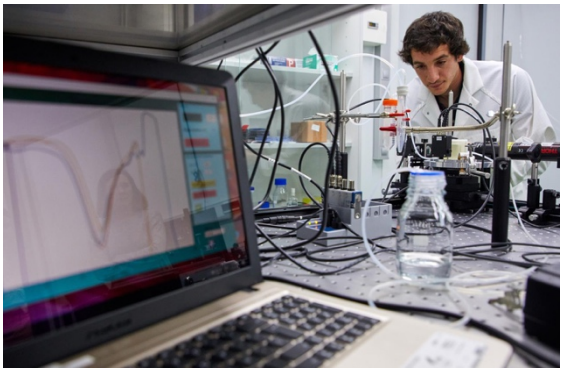
Additional tickets for accompanying persons can be purchased through the registration form.

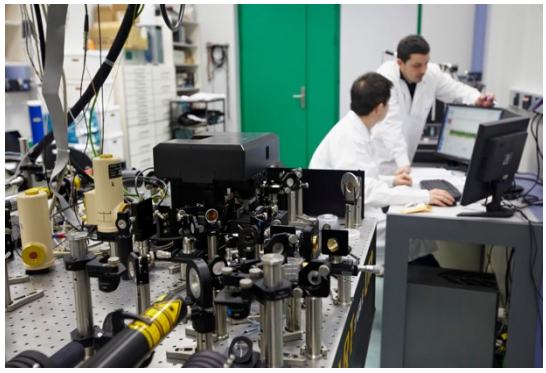
SOCIAL PROGRAM

THURSDAY, 1 AUGUST

Lab visits, after lunch (15:00), *by public buses*

The Nanoscience Research Center CIC nanoGUNE and the Materials Research Center CFM offer a guided lab tour after the official conference program, i.e., on August 1 after lunch. The research centers are easily accessible by public city buses, for example line 5 or 25 (see Google Maps). CIC nanoGUNE is the host institution of OMN 2024 and has laboratories for micro- and nanofabrication as well as for characterization. It covers a broad spectrum of nanosciences and nanotechnologies. The neighboring CFM Materials Research Center is a joint initiative of the Spanish National Research Council (CSIC) and the University of the Basque Country (UPV/EHU) with the long-term goal of advancing the frontiers of knowledge in advanced materials science and research. The number of participants may be limited, lists will be available at the registration desk for those interested.





SOCIAL PROGRAM

FRIDAY, 2 AUGUST

Mountain hike along the coast, 9:30, *private activity*

This is a private post-conference activity for people who love nature and hiking. The activity depends on the weather and requires a certain level of physical fitness. The cumulative positive elevation gain is between 500 and 600 meters, which is not correctly indicated in the map below. At the end, we take a small boat to Pasaia - San Juan, where we have a delicious lunch, which is not covered by the conference. The return journey to San Sebastián is by public transport.

The views on this hike are a little bit more than spectacular. Lists for registration are available at the registration desk in the Aquarium.

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