IV International Conference on
Metamaterials and Nanophotonics

METANANO 2019

Saint Petersburg, Russia

metanano.ifmo.ru

CONTACTS

CONTACTS

If you have any urgent questions, please don't hesitate to contact the Organizing Committee:

Anastasia Kaptsova

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+79111427630

PREFACE

We are pleased to welcome you to the 4th International Conference on Metamaterials and Nanophotonics METANANO 2019 held in St. Petersburg, Russia on 15-19 July 2019.

METANANO is attracting more and more participants every year from different scientific fields from fundamental research in photonics and plasmonics to business-oriented projects in RF technologies, bionanotechnologies and solar energy.

METANANO 2019 is a hub for researchers working in these fields and studying nanoscience, photonics, non-linear optics and related topics. The aim of the conference is to encourage discussion and sharing of knowledge and experience between the scientific community, engineers, industry and academic members all around the world, with the prospect of collaboration between these groups in the future.

The first METANANO in Russia was held in Anapa in 2016 and accumulated nearly 100 speakers, in 2017 in Vladivostok we gathered over 230 participants from Europe, Asia, and Russia. METANANO 2018 in Sochi had already over 330 participants. This year more than 400 participants will gather in St. Petersburg. The impetuous growth indicates increasing interest to the conference, recognition of its quality and at the same time the importance and relevance of the scientific fields covered by the conference.

We are also thankful to the conference sponsors and co-organizers who have made an invaluable input to the growing quality of this conference. We hope you will enjoy your time at METANANO in St. Petersburg!

Prof. Pavel Belov
General Chair

Prof. Mikhail Limonov
Technical Program Committee Chair

GENERAL INFORMATION

REGISTRATION

Registration will be held on the second floor of the Hotel.

Working hours may vary. Information on any changes will be available at the registration desk.

Sunday, July 14	18:00 20:00	Park Inn Pribaltiyskaya [Conference Venue]
Monday, July 15	7:45 18:00	Park Inn Pribaltiyskaya [Conference Venue]
Tuesday, July 16	7:45 18:00	Park Inn Pribaltiyskaya [Conference Venue]
Wednesday, July 17	8:00 17:30	Park Inn Pribaltiyskaya [Conference Venue]
Thursday, July 18	8:30 17:30	Park Inn Pribaltiyskaya [Conference Venue]

SOCIAL PROGRAM

There are several social activities planned during METANANO 2019:

Monday, July 15	18:00	Welcome reception [Conference Venue]
Tuesday, July 16	18:00	Bike ride at the Krestovsky Island [Meeting point is in front of the Conference Venue]
Wednesday, July 17	18:30	Gala dinner [Buses depart from the Conference Venue]
Friday, July 19	16:30	Boat trip [Buses depart from the Conference Venue]

COMMITTEES

General Chair
Pavel Belov, Russia

Technical Program Committee Chair
Mikhail Limonov, Russia

Technical Program Committee

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Alexey Akimov, USA
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Andrey Rogach
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Carsten Rockstuhl
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Mário Silveirinha
Maxim Shcherbakov
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SPONSORS AND EXHIBITORS

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INSCIENCE COMPANY IS RELIABLE SUPPLIER OF VARIOUS EQUIPMENT FOR CUSTOMERS IN RUSSIA - STATE UNIVERSITIES, RESEARCH LABORATORIES AND INDUSTRIAL MANUFACTURERS, WICH ACTIVITY IS FOCUSED ON PHOTONICS, OPTICS AND OPTOELECTRONICS.

INSCIENCE COMPANY IS MAINLY FOCUSED ON LASERS AND ACCESSORIES,OPTICAL TABLES AND OPTOMECHANICS, SPECTROSCOPY EQUIPMENT AND SIGNAL ANALYSIS HARDWARE.

WE OFFER NOT JUST EQUIPMENT SUPPLY, BUT WE ALWAYS TRY TO GET DEEPLY INVOLVED IN CUSTOMER'S GOAL, WE SUPPORT TECHNICALLY AND LEGALLY ON EACH PHASE OF OUR WORK. WELL-ESTABLISHED LOGISTICS FACILITATE SUPPLY OF ANY VOLUMES FROM ALL OVER THE WORLD AND HELP TO SOLVE ANY KIND OF CHALLENGE SAFELY AND FINE.

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Bruker Nano Surfaces provides industry-leading surface analysis instruments for research and production. A broad range of 2D and 3D surface profiler solutions from Bruker supply the specific information needed to answer R&D, QA/QC, and surface measurement questions with speed, accuracy, and ease.

EXHIBITORS

NKT Photonics is the leading supplier of high-performance fiber lasers, fiber optic sensing systems, and photonic crystal fibers. Our main markets are within imaging, sensing and material processing. Our products include ultrafast lasers, supercontinuum white light lasers, low noise fiber lasers, distributed temperature sensing systems and a wide range of specialty fibers. NKT Photonics has its headquarters in Denmark with sales and service worldwide.NKT Photonics is wholy owned by NKT A/S.
With over fifteen years of expertise, IP and experience, NKT Photonics strives to continually be the market leader in everything we do.

TESCAN company is focused on designing and manufacturing of scanning electron microscopes and system solutions for nanomaterials, life science, semiconductor applications with almost 2500 SEM installations in more than 80 countries.

OPTEC ZEISS Group develops and distributes technological solutions to science, education, innovation industry, manufacturing, and health service. OPTEC presents Industry-Leading Surface and Dimensional Analysis Tools from Bruker Nano Surfaces in Russia, CIS countries, Ukraine and Georgia. Bruker are enabling scientists around the world to make discoveries and advance their understanding of materials and biological systems.

SPONSORS AND EXHIBITORS

VENUE

BY PUBLIC TRANSPORT

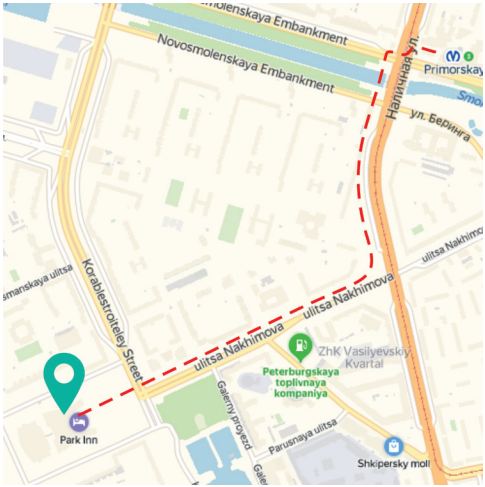
(duration 1 hour 20 min):

From Pulkovo Airport to the closest metro station

Bus stop in front of the Arrivals hall exit at Pulkovo. City buses 39, 39Ex and Minivan Taxi K39 between Moskovskaya metro station and the airport.
Price – 40 RUB.

To Park Inn Pribaltiyskaya

Enter Moskovskaya metro station (Last stop of the city buses 39, 39Ex and minivan taxi K39), buy a ticket at the cashier (price – 45 rubles). Go in the direction of Parnas station until Nevskiy prospect station, change to green line Gostiny Dvor in the direction of Begovaya station and continue until Primorskaya station.
Exit at Primorskaya station and walk for around 3 kilometers (approximately 20 minutes).



BY TAXI

(duration 30 min):

The official taxi is called Taxi Pulkovo. You can order it at the counters located at Arrivals hall on the first floor of the Terminal.

You can pay for your taxi by credit card/cash at the Taxi Pulkovo counter or by cash to the driver at the end of a ride. If you need a receipt, please ask for it at the Pulkovo Taxi counter.

The approximate price for the ride to the city center is 1200 RUB (about 16 euros).

NB! Please do not use an illegal taxi. There are many drivers standing next to the exit of the terminal who offer their service, but it is not safe.

It's also possible to use a taxi app like Uber, Gett taxi or Yandex.Taxi for your ride, however the waiting time might be longer.

NAVIGATE AROUND THE CITY

You can download an offline app called **Yandex.Metro** to navigate in the metro.

And to navigate around the city, we suggest an offline app called **maps.me** (you need to download the map of St. Petersburg before using it).

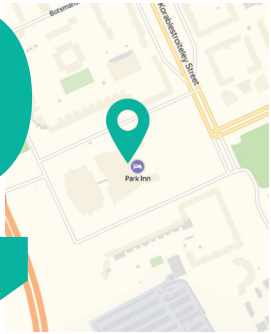
All apps are available in App Store and Google Play.

VENUE

VENUE

VENUE

METANANO 2019 will be held at Park Inn Pribaltiyskaya Hotel & Congress Center. The venue is located at **14, Korablestroiteley Street, Vasilyevsky Island, St. Petersburg.**



DINNER PLACES

We suggest the following places located within the walking distance from the venue

Maymun Restaurant
14, Korablestroiteley Street, Park Inn. Pribaltiyskaya

Nikhao Chineese Restaurant
14, Korablestroiteley Street, Park Inn. Pribaltiyskaya

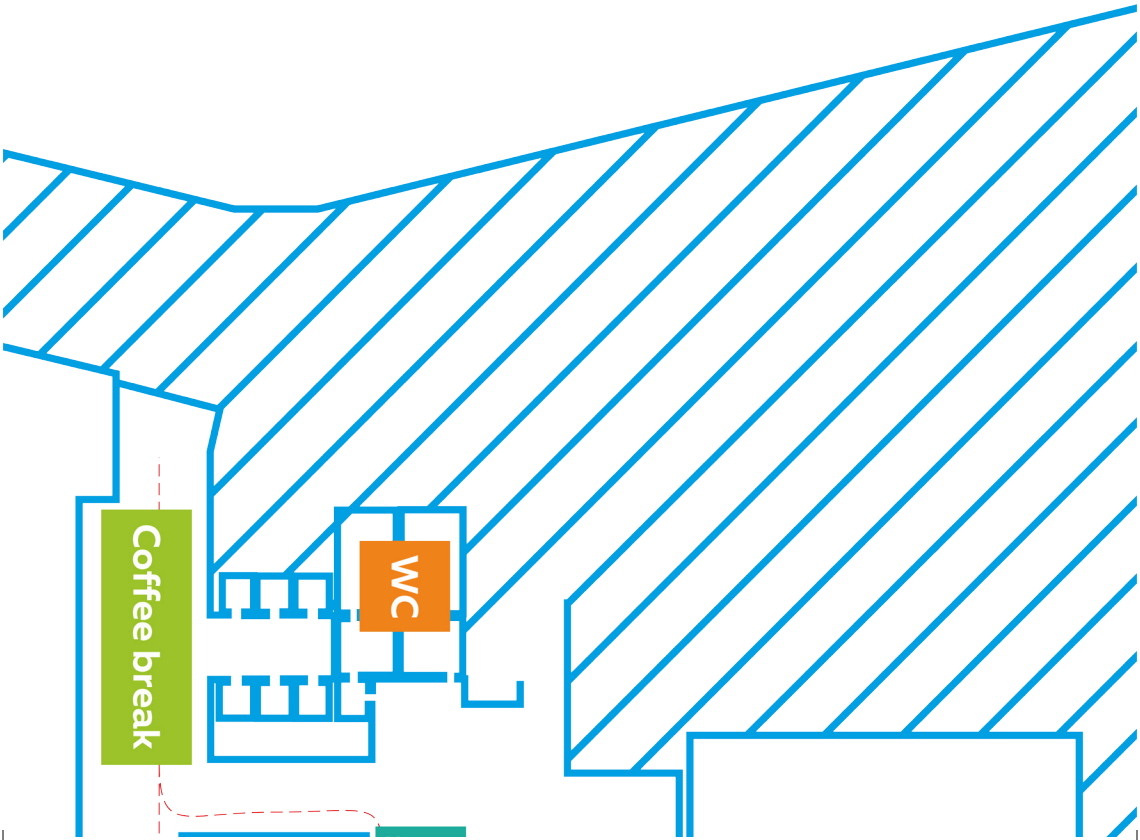
Mollie's Pub
15, Morskaya Embankment

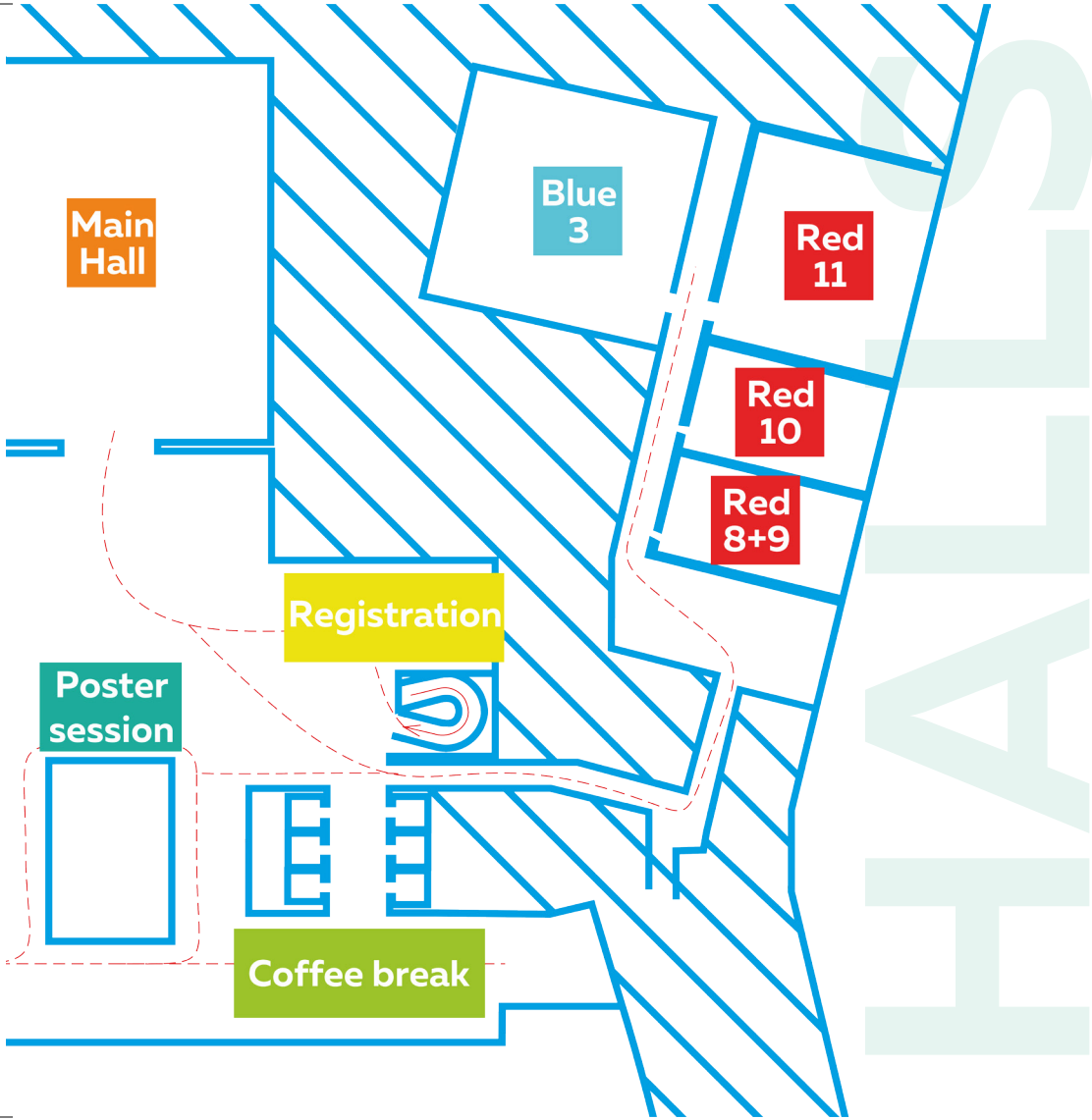
CheerDuck Restaurant
5 [building 1], Nakhimova Street

Vinegret Restaurant
9, Morskaya Embankment

VENUE

HALLS




Main Hall
Blue 3
Red 11
Red 10
Red 8+9
Registration
Poster session
Coffee break
HALLS

Monday, July 15th

Tuesday, J

9:00 9:40 **Martin Wegener**
Chirality in optical and mechanical metamaterials

Masaya Notomi
Novel functionalities arisin g

9:40 10:20 **Armando Rastelli**
Generation and teleportation of photon entanglement using semiconductor quantum dots

Philippe Lalanne
Light interaction with nan or
quasinormal mode expans ic

	Red 11	Red 8+9	Blue 3	Red 10	Red 11	Red 8
10:20 10:50						Coffee br
10:50 12:50	Quantu Metanano I	Advanced Light-Emitting and Optical Materials I	Graphene and 2D materials I	NanoPhoNonics and Acoustic Metamaterials I	Nanophotonics I	Advanced LightEmi and Opti Materials tt ca V
12:50 14:00						Lunch
14:00 15:50	Quantu Metanano II	Advanced Light-Emitting and Optical Materials II	Graphene and 2D materials I	NanoPhoNonics and Acoustic Metamaterials II	Nanophotonics II	Multifunct Nanomate and Nanoengi ing Proces ic ri ne se
15:50 16:40	Coffee break & Poster Session I					Coffee break & P
16:40	Quantu Metanano III	Advanced Light-Emitting and Optical Materials III	Graphene and 2D materials I	Advanced Theoretical and Numerical Tools for Nanooptics, Photonics and Plasmonics I	Nanophotonics III	Multifunct Nanomate and Nanoengi ing Proces io ri n s
	Welcome Reception					Bike ride [

y, July 16th

in g from integrated nanophotonics

n oresonators: mode volume and
ns ion

Wednesday, July 17th

Theo Rasing
Optical control of magnetism: from fundamentals to nanoscale engineering

Anna Baldycheva
Sensors around us: now and in the future

d 8+9	Blue 3	Red 10	Red 11	Red 8+9	Blue 3	Red 10
ee break						
ed ni ti ls tting cal V	Graphene and 2D materials IV	Advanced Theoretical and Numerical Tools for Nanooptics, Photonics and Plasmonics II	Topological States of Light, Sound and Polaritons I	Anapole and Toroidal NanoPhotonics I	Optical Materials I	Antenna and RF Applications of Metamaterials I
n						
ct ion te rials i neer- es ses I	Graphene and 2D materials V	NanoPhoNonics and Acoustic Metamaterials III	Topological States of Light, Sound and Polaritons II	Anapole and Toroidal NanoPhotonics II	Advanced Optical Materials II	Antenna and RF Applications of Metamaterials II
& Poster Session II			Coffee break & Poster Session III			
ct ion te rials i neer- es ses II	Superconducting and Quantum Metamaterials	NanoPhoNonics and Acoustic Metamaterials IV	Metamaterials I	Multifunction Nanomaterials and Nanoengineering Processes III		New Phenomena in Microwave Metamaterials I
e [Optional]			Gala dinner			

Thursday, July 18th

9:00 9:40 **Marin Soljačić**
Deep learning in photonics

9:40 10:20 **Kamil Ugurbil**
The future of the human connectome

	Blue 3	Red 10	Red 8+9	Red 11
10:20 10:50				**Coffee b**
10:50 12:50	BioMETANANO I	All-dielectric Nanophotonics I	Advanced Methods of Nanofabrication	Bound States in the Continuum in Photonics I
12:50 14:00				**Lunch**
14:00 15:50	BioMETANANO II	All-dielectric Nanophotonics II	Optomechanics and Optical Manipulation I	Bound States in the Continuum in Photonics II
15:50 16:40	**Coffee break & Poster Session IV**			
16:40	BioMETANANO III	Nanoplasmonics Srtuctures and Devices I	Optomechanics and Optical Manipulation II	Bound States in the Continuum in Photonics III

Friday, July 19th

L. (Kobus) Kuipers
Light twists at the nanoscale -surprises, tragedy and usefulness

Oliver Graydon
Nature Photonics – The Inside Story

Blue 3	Red 10	Red 8+9	Red 11
e break			
BioMETANANO IV	Light-Matter Interaction I	Plasmonics I	Metasurfaces I
h			
BioMETANANO V	Light-Matter Interaction II	Thz Tecnologies and Applications I	Metasurfaces II
Closing Ceremony			

BOAT TRIP
[Optional]

Sunday, J

18:00
20:00

Registration
[Reception Desk of the Park Inn by Radisson Pribaltiyskaya Hotel]

Monday, J

8:00
8:45

Registration
[Reception Desk of the Park Inn by Radisson Pribaltiyskaya Hotel]

8:45
9:00

Opening Ceremony
[Main Hall]

9:00
9:45

Plenary **Martin Wegener**
Chirality in optical and mechanical metamaterials
Session Chair: Philippe Lalanne
[Main Hall]

9:00
9:45

Plenary **Armando Rastelli**
Generation and teleportation of photon entanglement using semiconductor quantum dots
Session Chair: Philippe Lalanne
[Main Hall]

10:20
10:50

Coffee b

Special Simposium: "QuantuMetanano I"
Organizers: S. Reitzenstein, A. Akimov, E. Semenova, D. Zuev
[Hall: Red 11]

Special Session: "Advanced Light-Emitting and Optical Materials I"
Organizers: A. Zakhidov, A. Rogach, S. Makarov
Session Chair: Andrey Rogach
[Hall: Red 8+9]

10:50
11:10

Invited **Carlos Anton-Solanas**
Generation of non-classical light in a photon-number superposition

11:10
11:30

Invited **Anna Musial**
Quantum dot single photon emitters in the telecommunication range

11:30
11:50

Invited **Tobias Heindel**
Towards quantum communication networks exploiting solid-state quantum-light sources

10:50
11:10

Invited **Hilmi Volkan**
Demir nanocrystal perovskite LEDs

11:10
11:30

Invited **Haizheng Zhong**
Efficient light-emitting diodes based on In-situ fabricated perovskite nanocrystals

11:30
12:00

Keynote **Jochen Feldmann**
Halide perovskite nanocrystals: from platelets and cubes to supercrystals

y, July 14th

y, July 15th

e break

Special Session 9: ''Graphene and 2D Materials I''
Organizers: V. Volkov, A. Nikitin, D. Gulevich, A. Soluyanov
[Hall: Blue 3]

10:50 11:20 — Keynote — **Vasili Perebeinos**
Plasmons and excitons for optoelectronics with 2D materials

11:20 11:40 — Invited — **Timur Shegai**
TMDC nanophotonics for strong lightmatter coupling

11:40 12:00 — Invited — **Dmitry Krizhanovskiy**
Nonlinear exciton- and trionpolaritons in a monolayer semiconductor

Special Session 4: ''NanoPhoNonics and Acoustic Metamaterials I''
Organizers: S. Raetz, A. Akimov
Session Chair: Osamu Matsuda
[Hall: Red 10]

10:50 11:20 — Keynote — **Fabrice Vallees**
Acoustic response of nano-objects

11:20 11:40 — Invited — **Daniel Lanzillotti Kimura**
Semiconductor nanoacoustics and optophononics

11:40 12:00 — Invited — **Olga Boyko**
Experimental investigations of elastic waves in nano materials and structures

11:50 12:10 — Invited — **Simone Luca Portalupi**
Non-classical photons for longdistance quantum applications: from quantum frequency conversion to quantum dots emitting at 1550nm

12:10 12:30 — Invited — **Pavel Baranov**
High-temperature optical and microwave induced spin manipulations on point defects in silicon carbide for sensing and quantum information processing

12:30 12:50 — Invited — **Alexander Solntsev**
Nonlinear quantum optics on a chip

12:00 12:20 — Invited — **Anvar Zakhidov**
Single layer perovskite optoelectronics: light emitting electrochemical cells and tandems with stable CNT charge injectors

12:20 12:35 — Oral — **Evgeniia Cherotchenko**
Ab-initio calculation of electronic properties of all-inorganic Pb-based mixed-halide perovskites

12:35 12:50 — Oral — **Dmitry Gets**
Ion migration induced regime switching in perovskite light emitting solar cells

12:50 14:00 — **Lunch**

Special Simposium: "QuantuMetanano II"
Organizers: S. Reitzenstein, A. Akimov, E. Semenova, D. Zuev
[Hall: Red 11]

14:00 14:20 — Invited — **Ilya Derebezov**
Quantum light sources based on deterministic microlens structures (111) In(Ga)As and AlInAs QD

14:20 14:40 — Invited — **Ilya Charaev**
Superconducting Nanowire architectures: technology and applications

14:40 15:10 — Keynote — **Rudolf Bratschitsch**
Single-photon emitters in 2D materials

15:10 15:30 — Invited — **Gregory Goltsman**
Superconducting nanowire single-photon detector as a key element for quantum photonic integrated circuits

Special Session: "Advanced Light-Emitting and Optical Materials II"
Organizers: A. Zakhidov, A. Rogach, S. Makarov
Session Chair: Anvar Zakhidov
[Hall: Red 8+9]

14:00 14:15 — Oral — **Sergey Makarov**
Active all-dielectric nanophotonics based on halide perovskites

14:15 13:35 — Invited — **Qinghai Song**
Lead halide perovskite based microlasers: from material to on-chip integrated devices

14:35 14:50 — Oral — **Anatoly Pushkarev**
Lead halide nano- and microwave lasers: from synthesis to application

14:50 15:05 — Oral — **Ekaterina Tiguntseva**
Resonant effects in light-emitting hybrid perovkite nanopaticles

12:00 12:15 **Oral** **Georgy Ermolaev**
Excitonic nature of dispersion of twodimensional transition metal dichalcogenides and effect of annealing on excitons

12:15 12:30 **Oral** **Victor Zalipaev**
Excitons in monolayer transition metal dichalcogenides: the multiband model

12:30 12:45 **Oral** **Fedor Benimetskiy**
Strong coupling of excitons in 2D MoSe2/hBN heterostructure with optical bound states in the continuum

12:00 12:20 **Invited** **Samuel Raetz**
Time-domain Brillouin scattering for nanoscale depth profiling of optically transparent materials: applications, limitations and perspectives

12:20 12:35 **Oral** **Alexey Scherbakov**
Manipulating coherent phonons and magnons in ferromagnetic nanopatterns

12:35 12:50 **Oral** **Iaroslav Mogunov**
Picosecond acoustics of an ultrafast photo-induced phase transition in VO2 nanostructures

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Special Session 9: "Graphene and 2D Materials II"
Organizers: V. Volkov, A. Nikitin, D. Gulevich, A. Soluyanov
[Hall: Blue 3]

14:00 14:20 **Invited** **Alberto G. Curto**
Chiral nanophotonics with 2D semiconductors

14:20 14:40 **Invited** **Nicolas Tancogne-Dejean**
High-harmonic generation from two-dimensional materials

14:40 15:00 **Invited** **Quansheng Wu**
Electronic structure of twisted double bilayer graphene

15:00 15:20 **Invited** **Sergey Novikov**
Plasmonic properties of nanostructured graphene with silver nanoparticles

Special Session 4: "NanoPhoNonics and Acoustic Metamaterials II"
Organizers: S. Raetz, A. Akimov
Session Chair: Andrey Akimov
[Hall: Red 10]

14:00 14:20 **Invited** **Paulo Santos**
Tunable lattices for exciton-polariton condensates

14:20 14:40 **Invited** **Vladimir Kulakovskii**
Pulsed acousto-optic switching of a bistable cavity polariton system

14:40 14:55 **Oral** **Andrey Naumov**
Electron-phonon interaction in colloidal CdSe quantum dots embedded in different solid matrices

14:55 15:10 **Oral** **Alexander Balanov**
Quantum transport in semiconductor superlattices driven by high-frequency acoustic waves

15:30
15:50

Invited

Ravitej Uppu
Quantum dot photon sources for quantum information processing

15:05
15:25

Invited

Nikolai Gaponik
Tuning of luminescence color and stability of CsPbX3 perovskite nanocrystals by encapsulation methods

15:50
16:40

Coffee break and P

Special Simposium: "QuantuMetanano III"
Organizers: S. Reitzenstein, A. Akimov, E. Semenova, D. Zuev
[Hall: Red 11]

Special Session: "Advanced Light-Emitting and Optical Materials III"
Organizers: A. Zakhidov, A. Rogach, S. Makarov
Session Chair: Jochen Feldmann
[Hall: Red 8+9]

16:40
17:00

Invited

Alexey Vinogradov
Cavity-free laser

16:40
17:10

Keynote

Andrey Rogach
Chemically synthesized carbon dots: optical properties and prospects of application

17:00
17:20

Invited

Georgy Astakhov
Coherent control of spin qudit modes in SiC at room temperature

17:00
17:30

Invited

Yanlin Song
Green printing technology form manufacturing functional devices

17:20
17:40

Invited

Alistair Brash
Light scattering by a single solid-state emitter: beyond the atomic picture

17:30
17:50

Invited

Young Joon Hong
Epitaxy of semiconductor nano/microstructures on graphene for optoelectronic device applications

17:40
18:00

Invited

Alexander Kubanek
Spin-photon interface of SiV- center in nanometer-sized diamond host

17:50
18:10

Invited

Albert Nasibulin
Tailoring electronic structure of SWCNTs for transparent and conductive film applications

15:20
15:40
Invited
Roman Martonak
Quantum and classical ripples in graphene

15:40
15:55
Oral
Danylo Komisar
Optical properties of thin graphene oxide films and their biosensing applications

15:10
15:25
Invited
Alexander Kuznetsov
Modulation of excitons by coherent GHz phonons confined in an opto-mechanical microcavity

15:25
15:40
Oral
Jelena Sjakste
Anharmonic coupling, thermal transport and acoustic wave attenuation in cubic semiconductors and bismuth

d Poster Session I

Special Session 9: "Graphene and 2D Materials III"
Organizers: V. Volkov, A. Nikitin, D. Gulevich, A. Soluyanov
[Hall: Blue 3]

16:40
17:10
Keynote
Victor Ryzhii
Graphene-black Phosphorus/Arsenic heterostructures for novel terahertz and infrared devices

17:00
17:30
Invited
Dmitry Svintsov
Plasmons and hydrodynamics

17:30
17:50
Invited
Denis Bandurin
Graphene: a unique platform for mid- and far-infrared plasmonics

17:50
18:10
Invited
Francisco Javier Alfaro Mozaz
Mid-IR nanophotonics with hyperbolic phonon polaritons: from antennas to photonic crystals

Special Session 13: "Advanced Theoretical and Numerical Tools for Nanooptics, Photonics and Plasmonics I"
Organizers: K. Edee, A. Shcherbakov
Session Chair: Alexey Shcherbakov
[Hall: Red 10]

16:40
17:00
Invited
Alexander Moroz
On first principle multiple-scattering theory for periodic arrangements of scatterers

17:00
17:20
Invited
Maxim Yurkin
Capabilities of ADDA code for nanophotonics

17:20
17:40
Invited
Dmitry Solnyshkov
Numerical methods for topological polaritonics

17:40
18:00
Invited
Stéphane Lanteri
High order discontinuous Galerkin methods for time-domain and frequency-domain nanophotonics

18:00
18:20

Invited

Alexandr Mintairov
Near-field scanning magneto-photoluminescence of composite fermions in In(Ga)P/GaInP quantum dots

18:20
18:35

Oral

Elizaveta Semenova
Photonic crystal lasers with buried heterostructure active medium

18:10
18:25

Oral

Dmitry Mitin
Hybrid solar cells based on GaAs and carbon nanotubes

18:25
18:40

Oral

Pavel Melentiev
Ultra-fast single troponin-t molecule sensing

18:30
21:00

WELCOME
[Conferen

18:10 18:25	Oral	**Mikhail Khodzitsky** Graphene-based optically tunable structure for terahertz polarization control	18:00 18:20	Invited	**Remi Colom** Modal analysis of Mie resonators: Pole-expansion of scattering operators
18:25 18:40	Oral	**Igor Gayduchenko** Plasmon-assisted resonant detection of terahertz radiation by field effect graphene transistors	18:20 18:35	Oral	**Kseniia Baryshnikova** Evolutionary algorithms for design of all-dielectric metalenses
18:40 18:55	Oral	**Kirill Voronin** Substrate effects in graphene field-effect transistor photodetectors	18:35 18:50	Oral	**Pavel Stremoukhov** THz generation and frequency manipulation in AFM/HM interfaces

ME RECEPTION
ference venue]

Tuesday, J

9:00
9:40

Plenary

MASAYA NOTOMI
Novel functionalities arising from integrated nanophotonics
Session Chair: Theo Rasing
[Main Hall]

9:40
10:20

Plenary

PHILIPPE LALANNE
Light interation with nanoresonators: mode volume and quasinormal mode expansion
Session Chair: Mikhail Limonov
[Main Hall]

10:20
10:50

Coffee b

Session: "Nanophotonics I"
Session Chair: Mitsuteru Inoue
[Hall: Red 11]

10:50
11:20

Keynote

Dmitri Yakovlev
Spin-dependent phenomena in colloidal semiconductor nanocrystals

11:20
11:40

Invited

Tomas Maurer
Flexible plasmonic and strain sensors: fabrication, design and perspectives

11:40
12:00

Invited

Ivan Fernandez-Corbaton
Designing structures for the enhanced sensing of chiral molecules

12:00
12:15

Oral

Kirill Safronov
Miniature Otto configuration implemented by two-photon laser lithography

Special Session: "Advanced Light-Emitting and Optical Materials IV"
Organizers: A. Zakhidov, A. Rogach, S. Makarov
Session Chair: Sergey Makarov
[Hall: Red 8+9]

10:50
11:10

Invited

Yury Rakovich
Plasmon-exciton strong coupling: new developments in nanophotonics

11:10
11:30

Invited

Suklyun Hong
Theoretical study of 2D materials and their heterostructures

11:30
12:00

Keynote

Cefe Lopez
True value of disorder

12:00
12:20

Invited

Anton Zasedatelev
All-optical polariton logic

ee break

Special Session 9: "Graphene and 2D Materials IV"
Organizers: V. Volkov, A. Nikitin, D. Gulevich, A. Soluyanov
[Hall: Blue 3]

10:50 11:20 — Keynote — **Nicola Marzari**
Novel two-dimensional materials from high-throughput computational exfoliation

11:20 11:40 — Invited — **Sergey Dickmann**
Light-absorption amplification by long-living spin excitations in a quantum Hall system

11:40 12:00 — Invited — **Ilya Tokatly**
Quantum electrodynamical density functional theory: an emerging tool for describing strong coupling of quantum light with matter from first principles

12:00 12:20 — Invited — **Sergey Slizovskiy**
Surface states in Bernal and rhombohedral graphite

Special Session 13: "Advanced Theoretical and Numerical Tools for Nanooptics, Photonics and Plasmonics II"
Organizers: K. Edee, A. Shcherbakov
[Hall: Red 10]

10:50 11:10 — Invited — **Lifeng Li**
Recent advance of the coordinate transformation method in electromagnetic theory of gratings

11:10 11:30 — Invited — **Kofi Edee**
Metasurfaces homogenization technique based on the computation of the average value of the contravariant tensors elements

11:30 11:50 — Invited — **Igor Semenikhin**
The spectral element method for the solution of Maxwell's equations

11:50 12:10 — Invited — **Brahim Guizal**
Coupling between nano-slits lattice modes and metal-insulator-graphene cavity modes: a semi-analytical model

12:15 12:30 **Oral** **Johannes Frueh**
Influence of gold nanoparticle surface chemistry on their temporary fluorescence enhancement events

12:30 12:50 **Invited** **Stanislav Maslovski**
Understanding surface-enhanced Raman scattering

12:50 13:05 **Oral** **Thomas Maurer**
Which perspectives for hybrid metallic nanostructures and magnetoplasmonics?

12:20 12:40 **Invited** **Meng Su**
Self-assembling of nanomaterials via droplet manipulation for multifunctional optoelectronics devices

12:50 14:00 **Lunch**

Session: "Nanophotonics II"
Session Chair: Dmitri Yakovlev
[Hall: Red 11]

14:00 14:30 **Keynote** **Mitsuteru Inoue**
Magnetic phase interference in artificial magnetic lattices

14:30 14:50 **Invited** **Nikolay Rosanov**
Topological optics with 3D tangle laser solitons

14:50 15:05 **Oral** **Roman Savelev**
Polarization state transfer and photon routing with periodic dielectric waveguides

15:05 15:20 **Oral** **Nikolai Petrov**
Frustrated total internal reflection filter with metamaterial inclusions

Special Session 11: "Multifunction Nanomaterials and Nanoengineering Processes I»
Organizers: Svetlana von Gratowski, Victor Koledov
[Hall: Red 8+9]

14: 00 14:30 **Extended** **Svetlana von Gratowski**
3D mechanical bottom up nano-manipulation and nano-assembling using shape memory alloy nanogripper for nano-optic, nano-photonics, nano-plasmonics

14:30 14:50 **Invited** **Monica Alonso Cotta**
Exploring fabrication methods to highly sensitive and selective InP nanowire biosensors

14:50 15:05 **Oral** **Gil Nonato Santos**
Synthesis of metal oxide nanomaterials for early lung disease detection

15:05 15:20 **Oral** **Than Zaw Oo**
MnO2 and TiO2 based nanocomposites for macroscopic and individual nanodevices in sensing, energy storage and photocatalysis applications

12:20 12:35 **Oral** **Oleg Kibis**
Floquet engineering of 2D materials

12:35 12:50 **Oral** **Alexey Maslov**
Electromagnetics of two-dimensional materials with time-varying carrier density

12:10 12:25 **Oral** **Ilia Fradkin**
Scattering-matrix analysis of nanoparticle lattices in dipole approximation

12:25 12:40 **Oral** **Alexey Shcherbakov**
Calculation of the 1D grating scattering matrix frequency derivatives

12:40 12:55 **Oral** **Maxim Yurkin**
Simulating optical properties of extremely oblate inhomogeneous particles with the discrete dipole approximation

Special Session 9: "Graphene and 2D Materials V"
Organizers: V. Volkov & A. Nikitin & D. Gulevich
[Hall: Blue 3]

14:00 14:20 **Invited** **Jan Vavra**
Scattering-type scanning near-field optical microscopy and spectroscopy of low-dimensional and nanostructured materials

14:20 14:40 **Invited** **Valentyn Volkov**
Ultra-thin gold films: towards 2D metals for photonic and optoelectronic applications

14:40 14:55 **Oral** **Vasily Kravtsov**
Ultrafast coherent dynamics in nonlinear nano-optics and nano-imaging of graphene

14:55 15:10 **Oral** **Raul Rodriguez**
Laser processing of functionalized graphene - a new paradigm for graphene-based flexible electronics

Special Session 4: "NanoPhoNonics and Acoustic Metamaterials III"
Organizers: S. Raetz & A. Akimov
Session Chair: Samuel Raetz
[Hall: Red 10]

14:00 14:20 **Invited** **Osama Matsuda**
Time-resolved imaging of GHz acoustic waves/vibrations in phononic crystals and metamaterials

14:20 14:40 **Invited** **Georgios Theocharis**
Magneto-granular mechanical crystals: a perfect test bed for nonlinear and topological wave physics

14:40 14:55 **Oral** **Vassos Achileos**
Experimental observation of topological edge waves in a two-dimensional Su-Schrieffer-Heeger acoustic network

14:55 15:10 **Oral** **Mikhail Golub**
Wave propagation in elastic bi-materials with a doubly periodic array of interface cracks

15:20 15:35 **Oral** **Olga Kozina**
THz wave emission in the cavity with graphene-multilayer asymmetric hyperbolic metamaterials

15:35 15:50 **Oral** **Thomas Maurer**
Which perspectives for hybrid metallic nanostructures and magnetoplasmonics?

15:50 16:05 **Oral** **Irina Volkovskaya**
Multipolar analysis of second-harmonic generation in (111) Gallium Arsenide nanoparticles

15:20 15:35 **Oral** **Petr Lega**
3D Nanomanipulation: design and applications of functional nanostructured bio-materials

15:35 15:55 **Invited** **Somnath Bhattacharyya**
Bottom-up nano-integration route for modified carbon nanotube spintronic device fabrication

15:50 16:40 **Coffee break a**

Session: "Nanophotonics III"
Session Chair: Stanislav Maslovski
[Hall: Red 11]

Special Session 11: "Multifunction Nanomaterials and Nanoengineering Processes II»
Organizers: Svetlana von Gratowski, Victor Koledov
[Hall: Red 8+9]

16:40 17:00 **Invited** **Eli Kapon**
Integrated quantum photonics: exploiting quantum and photonic confinements with tailored photonic crystals and site-controlled quantum dots

17:00 17:15 **Oral** **Que Huong Nguyen**
Nonlinear optical response of hybrid exciton state in quantum dot-dendrite systems

16:40 16:55 **Oral** **Chris Coleman**
Nano-manipulation and laser treatment as alternative routes for strain engineering in Graphene

16:55 17:10 **Oral** **Victor Koledov**
Nano engineering of quantum multifunctional structures with interferometers by mechanical "bottom-up" assembling

15:10
15:25
Oral
Stanislav Moshkalev
One step synthesis Pd/NiO@ rGO/CNTs nanocomposite for energy storage as supercapacitor application

15:25
15:40
Oral
Dmitry Yakubovsky
Near-field characterization of ultra- thin metal films

15:40
15:55
Oral
Douglas Galvao
Structural and mechanical properties of scrolled 2D carbon-based graphyne and graphdiyne structures

15:55
16:10
Oral
Yaroslav Zhumagulov
Real-time time-dependent density functional theory approach to high harmonic generation from a monolayer MoS2 crystal

15:10
15:25
Oral
Samaneh Moeini
Realizing caustics in acoustic fields

15:25
15:40
Oral
Sergey Fomenko
Wave transmission through a layered piezoelectric/elastic phononic crystal with capacitors

k and Poster Session II

Special Session 5: ''Superconducting and Quantum Metamaterials»
Organizers: G. Tsironis, A. Ustinov
[Hall: Blue 3]

16:40
17:00
Invited
Priya Vashishta
Reactive molecular dynamics simulations and machine learning

17:00
17:20
Invited
Olga Safina
Formation of phase cluster and chimera states in hierarchical networks of Josephson junctions

Special Session 4: ''NanoPhoNonics and Acoustic Metamaterials IV''
Organizers: S. Raetz, A. Akimov
Session Chair: Olga Boyko
[Hall: Red 10]

16:40
17:10
Keynote
Thomas Dehoux
Morphogenetic control of locally resonant acoustic biosurfaces

17:10
17:30
Invited
Mathew Clark
Imaging of living cells with sub-optical wavelength phonons

17:15 17:30	Oral	**Maria Barsukova** Magnetic field driven light control by hybrid magneto-optical metasurfaces	17:10 17:25	Oral	**Kiril Borodako** Application of laser radiation for creation of metamaterial based on rapidly quenched TiNiCu shape memory alloy
17:30 17:50	Invited	**Miriam Unger** 2D Material characterization using nanoscale IR spectroscopy and imaging	17:25 17:40	Oral	**Dmitry Samosvat** Singlet oxygen generation mechanism on the surface of excited nanoporous silicon
19:00 21:00					**Bike ri**

17:20
17:35

Oral

Somnath Bhattacharyya
Superconducting diamond as a platform for quantum technologies

17:35
17:55

Invited

Georgios Tsironis
Self-induced transparency in flux-qubit chains of quantum metamaterials

17:30
17:50

Invited

Emmanuel Péronne
Probing cell elasticity at the micron scale: towards in vitro measurements on neurons

e ride [Optional]

Wednesday, J

9:00 – 9:40 **Plenary**
THEO RASING
Optical control of magnetism: from fundamentals to nanoscale engineering
Session Chair: Eugenio Rafael Mendez
[Main Hall]

9:40 – 10:20 **Plenary**
ANNA BALDYCHEVA
Sensors around us: now and in the future
Session Chair: Eugenio Rafael Mendez
[Main Hall]

10:20 – 10:50 **Coffee break**

Special Session 7: "Topological States of Light, Sound and Polaritons I"
Organizers: A. Khanikaev, A. Slobozhanyuk, M. Gorlach
Session Chair: Alexey Slobozhanyuk
[Hall: Red 11]

10:50 – 11:10 **Invited**
Xiao Hu
Topological photonic states in artificial graphenes

11:10 – 11:30 **Invited**
Daria Smirnova
Localized states in nonlinear topological systems

11:30 – 11:50 **Invited**
Daniel Leykam
Suppression of backscattering in onedimensional coupled resonator waveguides

11:50 – 12:10 **Invited**
Mario Silveirinha
Topological theory of non-Hermitian photonic systems

Special Session 3: "Anapole and Toroidal NanoPhotonics I"
Organizers: A. Miroshnichenko, A. Evlyukhin, A. Shalin
Session Chair: Alexander Shalin
[Hall: Red 8+9]

10:50 – 11:10 **Invited**
Nicolas Bonod
Modal analysis of anapoles

11:10 – 11:30 **Invited**
Andrey Evlyukhin
Exact and approximate approach to multipolar decompositions in optics of nanostructures

11:30 – 11:50 **Invited**
Vassili Fedotov
Radiation (-less) sources beyond common multipoles

11:50 – 12:05 **Oral**
Lei Xu
Toroidal dipolar excitations in alldielectric nanostructures

ık

Session: "Advanced Optical Materials I"
Session Chair: H. Giessen
[Hall: Blue 3]

10:50 11:20 — Keynote — **Diederik Wiersma**
Intelligent light robots

11:20 11:40 — Invited — **Qiang Li**
An ultra-thin colored textile for dualmode radiative heating

11:40 11:55 — Oral — **Aleksandr Sergeev**
Photonic nanojets generated by alumina microstructures with different surface morphology

11:55 12:15 — Invited — **Jonas Gael Roch**
Spin-polarized electrons in monolayer MoS2

Special Session 8: "Antenna and RF Applications of Metamaterials I"
Organizers: S. Maci, S. Glybovski
Session Chair: Stanislav Glybovski
[Hall: Red 10]

10:50 11:20 — Keynote — **Stefano Maci**
Metasurfaces: from basic EM theory to practical applications

11:20 11:40 — Invited — **Weiren Zhu**
Experimental realization of ultracompact high-efficiency metasurface Luneburg lenses for microwave applications

11:40 12:00 — Invited — **Vladislav Popov**
Constructing scattering patterns with metagratings: from theory to design

12:00 12:20 — Invited — **Irina Vendik**
Multimode electric ring resonator (ERR) for ultra-wideband (UWB) antenna with multi-notch band

12:10 12:25	Oral	**Maxim Gorlach** Enginering coupling in electromagnetic topological models via staggered bianisotropy	12:05 12:25	Invited	**Nahid Talebi** Toroidal moments probed by electron beams
12:25 12:40	Oral	**Anton Nalitov** Spontaneous topological transitions in polariton condensates due to spin bifurcations	12:25 12:45	Invited	**Andrea Fratalocchi** Optical neurocomputing with anapoles
12:50 14:00		**Lunch**			

Special Session 7: ''Topological States of Light, Sound and Polaritons II''
Organizers: A. Khanikaev, A. Slobozhanyuk, M. Gorlach
Session Chair: Maxim Gorlach
[Hall: Red 11]

14:00 14:20	Invited	**Tristan Harder** Exciton-polariton topological Insulator	14: 00 14:20	Invited	**Andrey Miroshnichenko** Boosting nonlinear response with anapole states
14:20 14:40	Invited	**Dmitry Solnyshkov** Direct measurement of the quantum geometry in optics	14:20 14:35	Oral	**Alexander Shalin** Non-huygens invisible metasurfaces
14:40 15:00	Invited	**Oleg Kibis** Electron-photonic topological states on the surface of a bulk semiconductor	14:35 14:50	Oral	**Hadi Shamkhi** Simultaneous suppression of forward and backward light scattering by high-index nanoparticles based on Kerker-like effects
15:00 15:15	Oral	**Andrey Stepanenko** Realizing interaction-induced topological states of photon pairs	14:50 15:05	Oral	**Adria Canós Valero** Nontrivial invisibility induced by optical hybrid anapole
15:15 15:30	Oral	**Nikita Olekhno** Electric circuit realization of topological states of interacting photon pairs	15:05 15:20	Oral	**Egor Gurvitz** Irreducible Cartesian multipole decomposition of scattered light with explicit contribution of high order toroidal moments

Special Session 3: ''Anapole and Toroidal NanoPhotonics II''
Organizers: A. Miroshnichenko, A. Evlyukhin, A. Shalin
Session Chair: Andrey Evlyukhin
[Hall: Red 8+9]

12:15 12:35 — Invited — **Andrey Lavrinenko**
Hyperbolic metamaterials as an advanced sensing platform

12:35 12:55 — Invited — **Gary Hix**
Luminescent MOFs and metal phosphonate materials

12:20 12:40 — Oral — **Svetlana Tcvetkova**
A review of exact solutions for conversion of a surface wave into propagating wave

Session: "Advanced Optical Materials II"
Session Chair: S. Makarov
[Hall: Blue 3]

14:00 14:30 — Keynote — **Harald Giessen**
In-situ thin film nanoscale hydrogenography in magnesium plasmonics

14:30 15:00 — Keynote — **Eugenio Mendez**
The optics of reef-building corals

15:00 15:15 — Oral — **Richard Hollinger**
Nanoscale semiconductor laser sources pumped in strong field regime

15:15 15:30 — Oral — **Violette Steinmetz**
Magneto-luminescence reveals the fine structure of indirect excitons in CdSe/CdTe nanoplatelets

15:30 15:45 — Oral — **Valentin Milichko**
Optically resonant graphite nanostructures

Special Session 8: "Antenna and RF Applications of Metamaterials II"
Organizers: S. Maci & S. Glybovski
Session Chair: Stefano Maci
[Hall: Red 10]

14:00 14:20 — Invited — **Dmitry Tatarnikov**
Semi-transparent lossy surfaces for cutoff of the fields in microwave shadow domain

14:20 14:40 — Invited — **Vladimir Lyashev**
Steerable technologies in wireless communication

14:40 15:00 — Invited — **Branka Jokanovic**
Printed frequency scanning antennas based on metamaterials

15:00 15:15 — Oral — **Irina Munina**
A tiled dual-polarized transmitarray with 1-bit quantization

15:15 15:35 — Invited — **Sergei Kuznetsov**
Metamaterial-inspired quasi-optical components and devices for the range of millimetre and submillimeter waves

15:30
16:00

Keynote **Mohammad Hafezi**
Quantum topological photonics

15:50
16:40

Coffee break a

Session: "Metamaterials I"
Session Chair: Constantin Simovski
[Hall: Red 11]

16:40
17:00

Invited **Vasily Klimov**
Lumped energy absorbers and sinks in optics and electronics of metamaterials

17:00
17:20

Invited **Irina Khromova**
Wireless charging: challenges and aspirations

17:20
17:35

Oral **Manuel Collet**
Programmable metamaterial for breaking acoustic reciprocity

17:35
17:50

Oral **Rasmus Elkjaer Jacobsen**
Continuous Heating Microwave System Based on Mie Resonances

17:50
18:05

Oral **Nikolai Petrov**
Acousto-optic properties of metamaterials

18:30
...

Special Session 11: "Multifunction Nanomaterials and Nanoengineering Processes III"
Organizers: Svetlana von Gratowski, Victor Koledov
[Hall: Red 8+9]

16:40
17:00

Invited **Tavakol Pakizeh**
Metasurfaces based on structured functional materials in EHF and optical regions

17:00
17:20

Invited **Ansar Safin**
Antiferromagnetic-based THzfrequency devices for the signal processing on the nanoscale

17:20
17:35

Oral **Zhongming Zeng**
Spintronic microwave detectors based on spin-torque diode effect

17:35
17:50

Oral **Poornima N**
Origin of PL emission at 0.797 eV in near stoichiometric spray deposited CZTS thin films

17:50
18:05

Oral **Rajeshmon V G**
Effect of Cu and Sn concentration on the performance of all-sprayed CZTS solar cell

15:35
15:50

Oral **Mingzhao Song**
Wire array metasurface for long range wireless power transfer

k and Poster Session II

Special Session 10: ''New Phenomena in Microwave Metamaterials I''
Organizers: Redha Abdeddaim, Mikhail Lapine
[Hall: Red 10]

16:40
17:00

Invited **Juan Domingo Baena Doello**
Applications of huygens' sources in microwave metamaterials and metasurfaces

17:00
17:20

Invited **Alexander Schuchinsky**
Voltage controlled broadband metasurfaces and high impedance surfaces

17:20
17:35

Oral **Oleh Yermakov**
Polarization hybridization of surface waves on anisotropic metasurface

17:35
17:50

Oral **Claire Guidet**
Analytical prediction of the unitary limit: water-based Mie scatterers

17:50
18:05

Oral **Andrey Sayansky**
Self-complementary metasurfaces as efficient tools for control of electromagnetic fields

Gala Dinner

18:05
18:20

Oral **Thibaut Letertre**
A new solution of permittivity and permeability measurement system with temperature variation

Thursday, J

9:00 – 9:40 **Plenary** **MARIN SOLJAČIĆ**
Deep learning in photonics
Session Chair: Harald Giessen
[Main Hall]

9:40 – 10:20 **Plenary** **KAMIL UGURBIL**
The future of the human connectome
Session Chair: Harald Giessen
[Main Hall]

10:20 – 10:50 **Coffee b**

Special Simposium: "BioMETANANO I"
Organizers: D. Bendahan, M. Dubois
A. Andreychenko, M. Zyuzin
Session Chair: Marc Dubois
[Hall: Blue 3]

10:50 – 11:20 **Keynote** **Arend Heerschap**
MRI of nanoparticles in biomedicine

11:20 – 11:40 **Invited** **David Bendahan**
New achievements in musculoskeletal tumor imaging using ultra-high field MRI

11:40 – 12:10 **Keynote** **William Sydney Price**
NMR Diffusometry

12:10 – 12:25 **Oral** **Anton Nikulin**
Variable band RF-coil for multiheteronuclear MRI

Session: "All-dielectric Nanophotonics I"
Session Chair: Mikhail Rybin
[Hall: Red 10]

10:50 – 11:10 **Invited** **Carsten Rockstuhl**
Controlling the propagation of Bloch Surface Waves

11:10 – 11:30 **Invited** **Mariia Timofeeva**
Nonlinear optical nanoantennas fabricated from III-V nanowires

11:30 – 11:50 **Invited** **Ruggero Verre**
Functional all-dielectric nanophotonic: from colloidal synthesis to transition metal dichalcogenides nanoantennas

11:50 – 12:05 **Oral** **Ivan Sinev**
Hybrid silicon/phase-change metasurfaces and nanoantennas for active nanophotonics

e break

Session: "Advanced methods of nanofabrication"
[Hall: Red 8+9]

10:50 11:10 — Invited
Waldemar Jerzy Nawrocki
Conductance quantization and measurements of the dimensions of nanosamples

11:10 11:25 — Oral
Svetlana Pashayan
Copper oxide-based anostructures: synthesis, characterization, applications

11:25 11:40 — Oral
Vladimir Fedorov
Controllable antiphase domain density in dilute nitride GaPN/GaP heterostructures on silicon

11:40 12:55 — Oral
Alexander Petrov
Pyrolyzed 3D compound refractive lenses made by additive manufacturing

Special Session 12: "Bound States in the Continuum in Photonics I"
Organizers: M. Soljačić, Yu. Kivshar, A. Bogdanov, K. Koshelev
Session Chair: Marin Soljačić
[Hall: Red 11]

10:50 11:10 — Keynote
Jian Zi
Observations of momentum-space polarization vortices in plasmonic crystals

11:10 11:30 — Invited
Chao Peng
Novel phenomena enabled by topological evolution of bound state in the continuum

11:30 11:50 — Invited
Jordi Gomis
Transforming like-line Bound States in Continuum to points by breaking anisotropy symmetry

11:50 12:10 — Invited
Ha Son Tung
Supercavity modes in dielectric nanoantennas for directional lasing

12:25
12:40

Oral **Viacheslav Ivanov**
Variable band RF-coil for multiheteronuclear MRI

12:05
12:20

Oral **George Zograf**
Near-IR optical heating of resonant semiconductor nanoparticles for advanced bio-applications

12:20
12:35

Oral **Andrey Voronov**
TMOKE enhancement in structured all-dielectric iron-garnet films with waveguide modes

12:50
14:00

Lunch

Special Simposium: "BioMETANANO II"
Organizers: D. Bendahan, M. Dubois
A. Andreychenko, M. Zyuzin
Session Chair: Mikhail Zyuzin
[Hall: Blue 3]

14:00
14:30

Keynote **Gleb Sukhorukov**
Photonic application based on organized multifunctional polymer microstructures: multilayer capsules and patterned microchamber arrays

14:30
14:50

Invited **Dmitry Gorin**
Novel multifunctional nanostructured carriers for diagnostic and therapy

14:50
15:10

Invited **Alexey Yashchenok**
Dual-mode nanostructured microspheres the prospect for photoacoustic imaging and surfaceenhanced Raman scattering

15:10
15:25

Oral **Alexander Timin**
Development of anticancer drug delivery system based on bone marrow-derived multipotent mesenchymal stem cells

15:25
15:40

Oral **Ekaterina Lengert**
Mesoporous particles for transdermal delivery of the antifungal drug griseofulvin

Session: "All-dielectric Nanophotonics II"
Session Chair: Mikhail Rybin
[Hall: Red 10]

14: 00
14:15

Oral **Mikhail Rybin**
Recent advances in study of photonic phase transitions: from photonic crystal to metamaterial

14:15
14:35

Invited **Alexander Petrov**
Front induced photonic transitions: reflection, transmission and trapping

14:35
14:50

Oral **Viacheslav Snigirev**
Ultrafast all-optical GaAs nanoswitch for photonic integrated circuitry

14:50
15:05

Oral **Viktoriia Rutckaia**
Experimental demonstration of Purcell effect in silicon Mieresonators with embedded Ge(Si) quantum dots

15:05
15:20

Oral **Mihail Petrov**
Second harmonic generation from resonant all-dielectric and hybrid nanostructures

11:55 12:10 — Oral — **Alexey Bolshakov**
Geometrical and compositional tailoring of GaP(As,N) nanowires optical properties

12:30 12:50 — Invited — **Charles Roques-Carmes**
Enhancing free-electron-driven lightmatter interaction with bound states in the continuum

"Special Session 2: "Optomechanics and Optical Manipulation I"
Organizers: P. Zemanek, A. Shalin, M. Petrov"
Session Chair: Pavel Zemanek
[Hall: Red 8+9]

14:00 14:20 — Invited — **Shangran Xie**
Optomechanics on tapered glassfibre nanospikes

14:20 14:50 — Keynote — **Tomas Cizmar**
Holographic micro-endoscopy based on multimode waveguides

14:50 15:10 — Invited — **Manuel Ignacio Marques Ponce**
Novel phenomena in optical manipulation due to magnetic-fieldInduced resonant states

15:10 15:25 — Oral — **Vanik Shahnazaryan**
Optomechanics of two dimensional membranes in the cooperative coupling regime

15:25 15:45 — Invited — **Andrey Novitsky**
Examination of metamaterial solid immersion lenses for ubwavelength optical manipulation

Special Session 12: "Bound States in the Continuum in Photonics II"
Organizers: M. Soljačić, Yu. Kivshar, A. Bogdanov, K. Koshelev
Session Chair: Andrey Bogdanov
[Hall: Red 11]

14:00 14:20 — Invited — **Leonid Doskolovich**
Coupled-wave models describing bound states in the continuum in resonant gratings and photonic rib waveguides

14:20 14:35 — Oral — **Evgeni Besus**
Bound states in the continuum in abruptly terminated dielectric slab waveguides

14:35 14:55 — Invited — **Vasily Klimov**
High-Quality resonances in nanoparticles of different shapes and materials: analytical material independent approach

14:55 15:15 — Invited — **Nikolay Gippius**
High-Q resonances in dielectric structures

15:15 15:30 — Oral — **Almas Sadreev**
Interaction between dielectric particles enhances the Q factor

15:40
15:55

Invited **Mariia Saveleva**
Hybrid functional materials for tissue engineering: synthesis, in vivo drug release and SERS effect

15:20
15:35

Oral **Aleksandr Frolov**
Subwavelength visualization of optical modes in all-dielectric nanoantennnas

Coffee break and

Special Simposium: "BioMETANANO III"
Organizers: D. Bendahan, M. Dubois
A. Andreychenko, M. Zyuzin
Session Chair: David Bendahan
[Hall: Blue 3]

Session: "Nanoplasmonics Srtuctures and Devices I"
Session Chair: Alexey Slobozhnyuk
[Hall: Red 10]

16:40
17:00

Invited **Nikolai Avdievitch**
Combined surface loop / Dipole-like elements enhance central SNR of a human head phased array at 9.4T: experimental validation of UISNR theory

16:40
17:10

Keynote **Constantin Simovskii**
Phenomenological model of Rabi oscillations and spaser generation threshold

17:00
17:20

Invited **Rita Schmidt**
A metamaterial-based configuration for dual-band (phosphorous and proton) signal enhancement in ultrahigh field magnetic resonance imaging

17:10
17:30

Invited **Markus Schmidt**
Plasmonic nano-structures on fiber end faces for boosting incoupling efficiencies

17:20
17:35

Oral **Stas Glybovski**
Applications of artificial magnetic conductors in RF-coils for MRI

17:30
17:45

Oral **Georgiy Yankovskii**
Interference and wave propagation in a plasmonic Al2O3-Au-Al2O3 ridge waveguide

17:35
17:50

Oral **Jan Taro Svejda**
Compact metamaterial based CoilElement for combined 1H/23Na MRI at 7T

17:45
18:00

Oral **Alexander Milekhin**
Arrays of metal nanostructures for plasmon-enhanced spectroscopy

17:50
18:05

Oral **Anna Mikhailovskaya**
Ceramic resonator as an alternative to the highly dense receive arrays in MRI

18:00
18:15

Oral **Massimo Cuscunà**
Extremely close gap aluminum bowtie nanoantennas fabricated by helium focused ion beam for plasmonic applications in the visible range

15:30
15:45

Oral **Zarina Sadrieva**
Bound states in the continuum supported by two-layered wires structure

Poster Session IV

Special Session 2: ''Optomechanics and Optical Manipulation II''
Organizers: P. Zemanek, A. Shalin, M. Petrov
Session Chair: Alexander Shalin
[Hall: Red 8+9]

16:40
17:00

Invited **Mario Silveirinha**
Drag optical force due to a drift-current bias of graphene

17:00
17:30

Extended **Pavel Zemanek**
Vacuum optomechanics of optically levitated objects

17:30
17:50

Invited **Maria G. Donato**
Optical manipulation of non-spherical particles: trapping and binding of Si nanowires in counter-propagating beams

17:50
18:05

Oral **Nataliia Kostina**
Optical binding near hyperbolic metamaterial substrates

18:05
18:20

Oral **Sergey Stafeev**
Strong negative longitudinal component of the Poynting vector in a tightly focused cylindrical vector beam

Special Session 12: ''Bound States in the Continuum in Photonics III''
Organizers: M. Soljačić, Yu. Kivshar, A. Bogdanov, K. Koshelev
Session Chair: Kristina Frizyuk
[Hall: Red 11]

16:40
17:00

Invited **Xiangdong Zhang**
Improved linear and nonlinear optical effects in two-dimensional materials based on bound states in the continuum

17:00
17:20

Invited **Dmitrii Maximov**
Nonlinear response by bound states in the continuum

17:20
17:35

Oral **Daria Dolinina**
BIC-solitons in one-dimentional photonic crystal slab

17:35
17:50

Oral **Andrey Bogdanov**
High-Q resonances in all-dielectric subwavelength resonators: from theory to experiment

17:50
18:05

Oral **Kirill Koshelev**
Observation of second-harmonic generation driven by bound states in the continuum

18:05
18:20

Oral **Anna Hurshkainen**
Volume metasolenoid-based coil for 23Na MRI at 7 Tesla

18:15
18:30

Oral **Andrei Ushkov**
Resonant TM transmission through metallized variable depth grating

18:30
18:45

Oral **Sergey Dyakov**
Wide band enhancement of transverse magneto-optic Kerr effect in magnetite

18:45
19:00

Oral **Qin Chen**
Electrical readout plasmonic biosensor

19:00
19:15

Oral **Ivan Mukhin**
Indirect study of the light emission in the nanocontact of tunnel junction

18:20
18:40

Invited

Alexey Maslov
Theoretical prospects for selective sorting of resonant dielectric microspheres using optical forcesvector beam

18:05
18:20

Oral

Elena Mikheeva
Dielectric metasurfaces supporting bound states in the continuum for angle-selectivity and angle-multiplexing

Friday, J

9:00
9:40

Plenary

L. (KOBUS) KUIPERS
Light twists at the nanoscale -surprises, tragedy and usefulness
Session Chair: Theo Rasing
[Main Hall]

9:40
10:20

Plenary

OLIVER GRAYDON
Nature Photonics – The Inside Story
Session Chair: Mikhail Limonov
[Main Hall]

10:20
10:50

Coffee b

Special Simposium: "BioMETANANO IV"
Organizers: D. Bendahan, M. Dubois
A. Andreychenko, M. Zyuzin
Session Chair: Anna Andreychenko
[Hall: Blue 3]

10:50
11:20

Keynote

Ramon Alvarez-Puebla
SERS encoded particles

11:20
11:40

Invited

Nicolas Pazos Perez
Synthesis of SERS-encoded nanotags: from single nanoparticles to highly brilliant complex core-satellite structures

11:40
11:55

Oral

Aliaksei Dubavik
Nanocrystals in bioapplications: the importance of being functionalised

11:55
12:15

Invited

Catherine Dendrinou-Samara
Magnetic nanoparticles as vehicles for multidisciplinary medicine

Session: "Light-Matter Interaction I"
Session Chair: Stefan Enoch
[Hall: Red 10]

10:50
11:20

Keynote

Mikhail Glazov
Excitons in atomically thin semiconductors

11:20
11:50

Keynote

Bernard Gil
Boron nitride from its physics to advanced photonic applications

11:50
12:10

Invited

Denis Novitsky
Ultrashort pulses in disordered loss-gain structures: Self-induced transparency, localization, and amplification

12:10
12:30

Invited

Sergey Grigoriev
Classification of the fractal and non-fractal objects in two – dimensional space

e break

Session: "Plasmonics I"
Session Chair: Andrey Bogdanov
[Hall: Red 8+9]

10:50 11:10 — Invited — **Ilya Akimov**
Magneto-optical intensity effects in hybrid plasmonic structures

11:10 11:30 — Invited — **Alexei Vagov**
Superanomalous skin effect for surface plasmon-polaritons

11:30 11:45 — Oral — **Vladimir Bochenkov**
Immobilization and plasmon-enhanced fluorescence of EGFP on Al nanohole arrays

11:45 12:00 — Oral — **Artyom Kostyukov**
Super-efficient laser hyperthermia of malignant cells with AZO/Au coreshell nanoparticles

Session: "Metasurfaces I"
Session Chair: Mikhail Petrov
[Hall: Red 11]

10:50 11:10 — Invited — **Owen Miller**
Metasurface inverse design towards fundamental performance limits

11:10 11:30 — Invited — **Andrey Sukhorukov**
Robust optical measurements with metasurfaces

11:30 11:50 — Invited — **Kevin Vynck**
Numerical method for the modelling of complex disordered metasurfaces

11:50 12:05 — Oral — **Andrey Ivanov**
Silicon metasurface based on regular bars as an effective SERS substrate

12:15
12:30

Oral **Mariia Saveleva**
Hybrid functional materials for tissue engineering: synthesis, in vivo drug release and SERS effect

12:30
12:45

Oral **Matteo Rinaldi**
Plasmonically-enhanced micromechanical photoswitches

12:45
13:05

Invited **Vladimir Poborchii**
Probing light-matter interaction and confinement/surface-induced effects via Raman microscopy of group-IV nanostructures

13:05
14:00

Lunch

Special Simposium: "BioMETANANO V"
Organizers: D. Bendahan, M. Dubois
A. Andreychenko, M. Zyuzin
Session Chair: Mikhail Zyuzin
[Hall: Blue 3]

14:00
14:20

Invited **Vasily Kantsler**
Geometric control of bacterial surface accumulation

14:20
14:35

Oral **Daria Kuznetsova**
Label free FLIM-analysis of liver during regeneration

14:35
14:55

Invited **Pavel Ginzburg**
Optical manipulation for targeted drug delivery

14:55
15:10

Oral **Soraia Fernandes**
Inhibition of prostate cancer propagation by modulation of mechano-activated pathways

Session: "Light-Matter Interaction II"
Session Chair: Mikhail Glazov
[Hall: Red 10]

14:00
14:20

Invited **Stefan Enoch**
Dipole-dipole interactions: Förster resonance energy transfer equivalence in the microwave domain

14:20
14:40

Invited **Kestutis Staliunas**
Nonhermitian management of light patterns based on local Hilbert transform

14:40
15:00

Invited **Alexander Huck**
Coupling germanium vacancy centers to a fiber based microcavity

15:00
15:15

Oral **Dmitrii Shuleiko**
Evolution of femtosecond laserinduced periodic structures formed on amorphous silicon surface

12:00
12:15

Oral **Alex Nomine**
Reshape Nanoparticle Microstructure to reshape plasmon

12:05
12:25

Invited **Adel Bousseksou**
Tunable mid-infrared metasurfaces on III-V semiconductors

12:25
12:40

Oral **Pavel Terekhov**
Multipole analysis of unusual absorption and other properties of dielectric metasurfaces

Session: "THz Tecnologies and Applications I"
Session Chair: Mikhail Rybin
[Hall: Red 8+9]

Session: "Metasurfaces II"
Session Chair: Mikhail Petrov
[Hall: Red 11]

14:00
14:20

Invited **Ladislau Matekovits**
Exploiting graphene tunability in electromagnetic applications

14:20
14:35

Oral **Vasily Gerasimov**
Studying localized surface plasmon resonances in the THz region for subwavelength spiral disks

14:35
14:50

Oral **Andrei Gorodetsky**
All-dielectric optically tunable metasurface for terahertz phase and amplitude modulation

14:50
15:05

Oral **Kirill Kuznetsov**
Transmission and emission terahertz time-domain spectroscopy of $Bi_{2-x}Sb_xTe_{3-y}Se_y$ topological insulators

14:00
14:20

Invited **Vassili Fedotov**
Sensing spatial coherence of light with planar metamaterials

14:20
14:35

Oral **Yuri Gorodetski**
Collective polarization-dependent plasmon routing by means of spinlocking metasurface

14:35
14:50

Oral **Andrei Komar**
Experimental realisation of edge detection using dielectric metasurfaces

14:50
15:10

Invited **Maxim Gorkunov**
Directing light with liquid crystal metasurfaces

15:10
15:25

Oral **Vassiliy Tsytsarev**
Brain functional in vivo imaging of using a phosphorescent oxygen- and ion- sensitive probe

15:25
15:40

Oral **Alexander Romaschenko**
High resolution quantitative tracing and modulation of nanoparticles' nose-to-brain transmission

15:15
15:30

Oral **Sergei Gavrilov**
Bright solitons in spontaneously formed polariton networks

13:00
14:00

Coffee

Closing

15:30
16:10

Best Poster, Best

[Main

16:30
...

Boat

15:05
15:20

Oral

Konstantin Mashinsky
Propagating plasmon in periodical graphene structure

15:20
15:35

Oral

Georgy Alymov
HgCdTe quantum wells for upperTHz lasing

break

Ceremony

Student Paper Awards

Hall]

Trip

	Monday, July 15th Poster Session I	Tuesday, July 16th Poster Session II
1	**Aleksandra Shulga** Cerium Doped Zno Np'S Synthesis By Microwave Irradiatio	**Yury Vysokikh** Scanning probe microscopy cantilevers improvement for advanced research and manipulation at nano scale
2	**Anastasiia Karpova** Auger recombination via deep energy levels as a potential cause of efficiency droop in InGaN/GaN LEDs	**Yuriy Serov** DFT calculation of electric field effect on the energy profile of the CO oxidation reaction catalyzed by Ni nanoparticles
3	**Alexander Berestennikov** Light scattering from silicon nanoparticles on perovskite microplates	**Dmitrii Kalganov** Synthesis of nanocrystalline bismuth ferrite by cation-exchange method
4	**Esther Bloch** Second-harmonic generation from reconfigurable all-dielectric metasurfaces	**Zhanna Dombrovskaya** Adaptive mesh for computation of electromagnetic wave propagation through high refractive index dielectric structures
5	**Irina Kryukova** Enhancement of the quantum dot photoluminescence using transfer-printed porous silicon microcavities	**Natalia Senkevich** Momentum-indirect interlayer trion in MoS2 bilayer
6	**Eric Charron** A Transient Grating Method to Measure the Dispersion of Elastic Waves in Nanostructures	**Anton Zaitsev** Graphene-based optically tunable structure for terahertz polarization control
7	**Aleksandra Furasova** Perovskite solar cell enhancement by gold nanoparticles prepared by laser ablation in liquid	**Natalia Kharuk** Nonadiabatic electron dynamics in one dimension within the time-dependent density functional theory

R SESSION

Wednesday, July 17th Poster Session III	Thursday, July 18th Poster Session IV
Anton Anzulevich Optimal microwave heating of biochar containing iron ore pellets	**Viacheslav Ivanov** Variable band RF-coil for multiheteronuclear MRI
Alexander Fediy Electromagnetic crystal with half-wave vibrators sublattice	**Sergey Gladyshev** Multipole analysis of eigenmodes of single particles with simple symmetry
Egor Gurvitz Subwavelength vaterite spherulite scattering properties in optical region	**Alexander Machikhin** Acousto-optical deflector for non-mechanical manipulating using optical tweezers
Tayyab Malik Controlling the electrical size of conducting bodies by eccentric coating of Zero Index Metamaterial	**Denis Kislov** Measurement surface plasmon polariton assisted optical force using a carbon nanowhisker mechanical resonator
Galina Kraftmakher A new functionality in microwave interferometry by application of metastructure as a tunable beam-splitter	**Nataliia Kostina** Optical manipulations via auxiliary substrate
Sergei Kurdjumov A simple calibration-free method of complex permittivity extraction	**Adria Canós Valero** Optically-driven rotation of perfectly absorbing nanoparticles
Aleksandr Markvart Parametric study of a wire array resonator for wireless power transfer	**Artem Sinelnik** Synthesis, characterization, and diffraction study of three-dimensional icosahedral quasicrystals

8	**Tatiana Liashenko** Electric field-induced segregation in a sky-blue perovskite light-emitting diode based on CsPbBr2Cl:PEO composite	**Azim Nukhov** Use of the adsorption properties of graphene to create metamaterials
9	**Daria Markina** Rapid synthesis and optical properties of CsPbBr2Cl perovskite nanolasers	**Valentin Milichko** Glia-neuronal transitions in development: significance in medical research and treatment of pathologies
10	**Irina Koryakina** Synthesis of perovskite nanoparticles in microfluidic chips	**Polina Pustovoit** Peano curve and a logarithmic fractal: difference reflected in scattering experiments
11	**Pavel Tonkaev** Light induced temperature decrease of semiconductor nanoparticle	**Kirill Anikin** Acoustic Phonons in Periodical GeSiSn/Si Nanostructures
12	**Valentin Milichko** Staining protocols for whole-body and fast tissue clearance for marine invertebrates	**Aleksandra Myshkina** Optical and luminescent properties of ceria nanoparticles produced by gas phase method
13	**Mehdi Molaei** PbS and PbS/CdS QDs synthesized by photochemical and non-linear response properties and optical limiting	**Amir Ghobadi** Spectrally selective ultrathin photodetectors using strong interference in nanocavity design
14	**Anna Popkova** Ultrafast all-optical switching in the presence of Bloch surface waves	**Alexandr Sadovnikov** Magnon straintronics as an alternative controllable way of spin-wave computation

Vladimir Lenets
Selective excitation of TE- and TM-surface waves on self-complementary metasurfaces

Artem Larin
Nonlinear optical properties of Sponge Si/Au nanoparticle

Anna Petrovskaya
Fabrication of nano-micro-sized 14C enriched constructive elements in plasma deactivation treatment of irradiated reactor graphite

Ghebouli Mohamed Amine
Structural, elastic and optoelectronic properties of Sr-based perovskite-type oxides SrXO3 (M = Th, Zr) via first-principles calculations

Alexey Dmitriev
Regimes of optical mode coupling: from core-shell single particle to dimer

Tatiana Prutskij
Low-temperature behaviour of linear polarization of the photoluminescence emission of ordered III-V semiconductor alloys

Alexander Shklyaev
Formation of submicron- and micron-sized SiGe and Ge particles on Si substrates using dewetting

Alena Mamonova
Controlling liquid crystal alignment by micro-patterned substrates

Dmitry Nesterenko
Brewster effect in the broadband light reflectivity

s

Matin Ashurov
Preparation of inverse photonic crystals by ETPTA photopolymerization method and their optical properties

Damir Yagudin
Collective magnetic modes excitation in GaAs nanoclusters by azimuthally polarized vector beams

Prokhor Alekseev
Photodegradation of surface passivated GaAs nanowires

Pavel Terekhov
Multipole evolution in dielectric nanoscatterers in lossless optical media and forward scattering amplification

15	**Elena Romanova** Time-resolved non-linear optical response and photo-induced carriers trapping in glassy semiconductors	**Andrey Samofalov** The development of double-sided nonreflecting absorber of the terahertz waves on the basis of metamaterials
16	**Ilya Antropov** Third harmonic generation from polymer nanocomposite with embedded CdSe quantum dots	**Sergey Degtyarev** Metasurfaces for energy flux control
17	**Evgenii Roginskii** Nonlinear optical properties of tellurium oxide nanocluster**s**	**Nazar Nikolaev** The difference in terahertz dielectric properties of water and water-ethanol DNA solutions
18	**Kristina Frizyuk** Second harmonic generation driven by magnetic dipole moment in dielectric nanoparticles of different shapes.	**Hadi Shamkhi** Metasurfaces with magnetoelectric dipolar coupling near PEC substrate
19	**Valeriy Gerasimov** Collective resonances in hybrid photonic-plasmonic nanostructures	**Kanothai Jarusirirangsi** The dependence of the exciton binding energies on quantum well widths of the donor doped GaAs/AlGaAs QW influencing on the intersubband transition
20	**Nikolai Petrov** Resonance absorption of visible light by ubwavelength gratings	**Alexey Romshin** Coupling of SiV-containing nanodiamonds to a Fabry-Perot microcavity
21	**Dmitry Nesterenko** Analysis of resonance characteristics of surface plasmon-polariton modes at water-metal interfaces by Fano approximation	**Daria Bochek** Bent optical fiber as a tunable bottle microresonator
22	**Shahab Ramezanpour** Controlling Energy Spectra and Whispering Gallery Modes of Electrons in a Few Electrons Lateral QD	**Dmitry Onishchuk** Electrophysical parameters of P3HT:PCBM solar cells

Anastasia Vornovskikh
Influence of carbon contamination on transparency of reactive SPSed Nd3+:YAG ceramics

Anna Nikolaeva
Directional two-photon emission by a resonant nanoparticle in the SPDC process

Irina Arefina
Influence of heteroatoms on optical properties and photoluminescence kinetics of carbon dots

Dmitry Pidgayko
Sublayer induced enhancement of electric andmagnetic dipole scattering of dielectric nanoparticles

Yaroslava Andreeva
Polarization selective metasurface formed by interference laser writing

Vitaly Yaroshenko
Purcell effect control in active silicon dielectricnanoantenna for the near-IR wavelength range

Yali Sun
Tuning of far-field and near-field via fs-laser in various hybrid oligomers

Valentin Milichko
Second harmonic generation enhancement of 2D metal-organic framework using silicon nanoparticles

Valentin Milichko
Light induced heating of silicon nanoparticles inside cervical carcinoma cells (HeLa)

Andrei Manzhurtsev
Cerebral metabolism after one hyperbaric oxygenation session: 1H and 31P magnetic resonance spectroscopy study

Egor Kretov
Control of the RF-magnetic field pattern by tunable metasurface in 1.5T MRI

Mikhail Zubkov
Diffusion tensor based forearm nerve tractography in 1.5 T MRI

Alexey Yakovlev
Comparison of GABA+ and GABA- MEGA-PRESS in measurements of [GABA] changes in visual human cortex during video stimulation.

Alexey Ermakov
Light-responsive and photoluminescent microchambers based on polyelectrolytes and in situ formed carbon dots

Aleksandra Myshkina
Gd2O3, SiO2-Gd2O3 and SiO2-MnO2 nanoparticles as potential MRI contrast agents

23	**Olga Sergaeva** Increase of the zero-phonon-line emission from color centers in nanodiamonds by coupling with dielectric cavity-waveguide structure	**Stanislav Kolodny** Q/V enhancement of Si micropillar resonator with Bragg reflectors in BIC regime
24	**Anton Anzulevich** Optimal microwave heating of biochar containing iron ore pellets	
25	**Nikita Golovastikov** Arbitrary order optical differentiation in refection by sequence of first order differentiators	**Sergey Pavlov** Emitting properties of a-Si:C:H films with a gold submicron grating
26	**Vasily Gerasimov** Infrared localized surface plasmon dark modes generated on subwavelength corrugated metal disks	**Anton Gritchenko** Plasmonic sensor of biomarkers based on the Ebbesen effect
27	**Zhanna Dombrovskaya** Difficulties faced by Yee's scheme in photonics problems	**Evgeny Shtager** Shielding effectiveness calculation of a glass coated with metal nanofilm in partial waves approximation
28	**Wiqar Hussain Shah** Designing and Fabrication of efficient nano-materials for thermoelectric generator	**Alexander Gritsienko** Purcell effect in an organometallic nanopatch antenna with Ru-complex emitter
29	**Danil Kornovan** Suppression of high-order multipole moments in a resonant periodic dipole chain	**Igor Reduto** Nanosecond Laser Surface Silver Metallization of Wet Ion Exchanged Glasses
30		**Alexander Machikhin** Multi-spectral interference imaging using laser- induced plasma light source

Alexey Slobozhanyuk
Applications of dielectric pads, novel materials and resonators in 1.5T and 3T MRI

Ksenia Lezhennikova
A practical realization of an artificial magnetic shield for preclinical bird-cage RF coils

Evgeniy Koreshin
RF-resonator for clinical MR imaging in urology and andrology

Ekaterina Brui
High-amplitude radiofrequency pulses for metadevice-assisted MRI

Georgiy Solomakha
A new RF-coil for UHF MRI based on a slotted microstip line

Anna Hurshkainen
Volume metasolenoid-based coil for 23Na MRI at 7 Tesla

Oleksii Peltek
Development of anticancer drug delivery system based on bone marrow-derived multipotent mesenchymal stem cells

Alexander Romaschenko
Accumulation pattern of intranasally installed metal oxide nanoparticles in the mouse olfactory bulb

Philippe Lalanne
Light emission close to metal surface (a “balade au gré du vent” in surface plasmon modes)

Vladimir Novikov
Magneto-optical properties of plasmonic hyperbolic metamaterials

Timofey Karpov
Multifunctional Scaffolds Based on Piezoelectric Electrospun Fibers modified with Biocompatible Drug Carriers for Regenerative Medicine

Ekaterina Maslova
Dielectric metamaterials with hexagonal lattice

Landysh Fatkhutdinova
Polymer capsules modified with iron oxide nanoparticles as an effective platform for MRI visualization and drug delivery

Nazar Nikolaev
Application of metasurface-based low pass filters for improving THz-TDS characteristics

Petr Menshchikov
1H MRS as a novel quantitative method for osteoporosis detection

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