

## Program-At-A-Glance

Monday, 24 June, 2019		Tuesday, 25 June, 2019		Wednesday, 26 June, 2019		Thursday, 27 June, 2019	
08:30 – 09:00	Registration	Registration	Registration	Registration	Registration	Registration	Registration
09:00 – 10:00	Opening Ceremony and Opening Talk	Session III (9:00 am - 10:15 pm) <b>Acousto-Optic Instrumentation</b>	Session VII (9:00 am - 10:15 pm) <b>Acousto-Optics in Waveguides/Photonic Structures</b>	Session X (9:00 am - 10:00 am) <b>Novel Applications of Acoustics / Optics</b>	Session X (9:00 am - 10:00 am) <b>Novel Applications of Acoustics / Optics</b>	Session X (9:00 am - 10:00 am) <b>Novel Applications of Acoustics / Optics</b>	Session X (9:00 am - 10:00 am) <b>Novel Applications of Acoustics / Optics</b>
10:00 – 11:00	Session I (10:30 am - 12:00 pm) <b>Photoacoustic Imaging and Spectroscopy</b>	Tea / Coffee Break	Tea / Coffee Break	Tea / Coffee Break	Tea / Coffee Break	Tea / Coffee Break	Summary and Closing Ceremony
11:00 – 12:00	Lunch and Tea / Coffee	Session IV (10:45 am - 12:30 pm) <b>Light &amp; Sound in Biology and Medicine</b>	Session VIII (10:45 am – 12:05 pm) <b>Fundamentals of Acousto-Optic Interaction II</b>	Session VIII (10:45 am – 12:05 pm) <b>Fundamentals of Acousto-Optic Interaction II</b>	Session VIII (10:45 am – 12:05 pm) <b>Fundamentals of Acousto-Optic Interaction II</b>	Session VIII (10:45 am – 12:05 pm) <b>Fundamentals of Acousto-Optic Interaction II</b>	Session VIII (10:45 am – 12:05 pm) <b>Fundamentals of Acousto-Optic Interaction II</b>
12:00 – 13:00	Lunch and Tea / Coffee	Lunch and Tea / Coffee	Lunch and Tea / Coffee	Lunch and Tea / Coffee	Lunch and Tea / Coffee	Lunch and Tea / Coffee	Lunch and Tea / Coffee
13:00 – 14:00	Session II (1:00 pm - 2:05 pm) <b>Fundamentals of Acousto-Optic Interaction I</b>	Session V (1:30 pm – 2:50 pm) <b>Acousto-Optic Materials and Structures (Dedicated to the Memory of Prof. L. Kulakova)</b>	Session IX (1:00 pm – 2:45 pm) <b>Acousto-Optic Devices</b>	Session IX (1:00 pm – 2:45 pm) <b>Acousto-Optic Devices</b>	Session IX (1:00 pm – 2:45 pm) <b>Acousto-Optic Devices</b>	Session IX (1:00 pm – 2:45 pm) <b>Acousto-Optic Devices</b>	Session IX (1:00 pm – 2:45 pm) <b>Acousto-Optic Devices</b>
14:00 – 15:00		Tea / Coffee Break	Tea / Coffee Break	Tea / Coffee Break	Tea / Coffee Break	Tea / Coffee Break	Tea / Coffee Break
15:00 – 16:00		Session VI (3:20 pm -4:35 pm) <b>Acousto-Optics for Spectroscopy, Metrology and Imaging</b>	Session VI (3:20 pm -4:35 pm) <b>Acousto-Optics for Spectroscopy, Metrology and Imaging</b>	Session VI (3:20 pm -4:35 pm) <b>Acousto-Optics for Spectroscopy, Metrology and Imaging</b>	Session VI (3:20 pm -4:35 pm) <b>Acousto-Optics for Spectroscopy, Metrology and Imaging</b>	Session VI (3:20 pm -4:35 pm) <b>Acousto-Optics for Spectroscopy, Metrology and Imaging</b>	Session VI (3:20 pm -4:35 pm) <b>Acousto-Optics for Spectroscopy, Metrology and Imaging</b>
16:00 – 17:00	Visit to the Toruń Center for Astronomy (Płwnice) and Welcome BBQ Reception						
17:00 – 18:00							
18:00 – 19:00							
19:00 – 20:00							
20:00 – 21:00							Conference Dinner (Discussions at Round Tables)
21:00 – 22:00							

## Monday, June 24, 2019

08:30 – 10:00

**Registration and Welcome Tee / Coffee**

10:00 – 10:30

**Opening Ceremony**

**Welcome Addresses**

Dean, Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University in Toruń

Director, Institute of Experimental Physics, University of Gdańsk

**Opening Talk**

A. ŚLIWIŃSKI, Acousto-optics as a field of current interest in research and application

**Session I: Photoacoustic Imaging and Spectroscopy**

Chair: I. Grulkowski

10:30 – 11:15

X.L. DEÁN-BEN, Interrogating Rapid Biological Dynamics with Volumetric Multi-Spectral Photoacoustic Tomography [Keynote]

11:15 – 11:30

B.B.J. LINDE, N. PONIKWICKI, E. SKRODZKA, Photoacoustics as a tool for studying the aqueous mixtures of non-electrolytes

11:30 – 11:45

P. ROCHOWSKI, S.J. POGORZELSKI, M. GRZEGORCZYK, Drug permeation through a skin-mimicking system studied by means of the photoacoustic depth-profiling method

11:45 – 12:00

V. ZARUBIN, A. BYCHKOV, E. CHEREPETS KAYA, A. KARABUTOV, Broadband real-time laser ultrasound tomography of composites

12:00 – 13:00

**Lunch and Tea / Coffee**

**Session II: Fundamentals of Acousto-Optic Interaction I**

Chair: V. I. Balakshy

13:00 – 13:35

P. KWIEK, Interaction of two coherent light beams with ultrasonic wave [Invited]

13:35 – 13:50

M.V. MARUNIN, V.B. VOLOSHINOV, Physical Properties of  $\alpha$ -BaB<sub>2</sub>O<sub>4</sub> and  $\beta$ -BaB<sub>2</sub>O<sub>4</sub> Crystals Promising for Application in Acousto-Optic Devices

13:50 – 14:05

V.YA. MOLCHANOV, K. YUSHKOV, V. GUROV, A. CHIZHIKOV, A. DARINSKY, Novel method of the unscattered phonons energy removal from acousto-optical devices

16:00 – 21:00

**Visit to the Toruń Centre for Astronomy (Piwnice)  
and Welcome BBQ Reception**

16:00

Coach Departure from the Faculty of Physics, Astronomy and Informatics,  
Nicolaus Copernicus University, ul. Grudziądzka 5

## Tuesday, June 25, 2019

08:30 – 09:00	<b>Registration and Morning Tea / Coffee</b>
	<b>Session III: Acousto-Optic Instrumentation</b> Chair: B.B.J. Linde
09:00 – 09:15	<u>J.-C. KASTELIK</u> , S. Dupont, J. Champagne, Multi-electrode array for spectral bandwidth control
09:15 – 09:30	<u>K.B. YUSHKOV</u> , Acousto-Optic Programmable Filters and the Sampling Theorem
09:30 – 09:45	<u>G. SLINKOV</u> , <u>V.I. BALAKSHY</u> , <u>S.N. MANTSEVICH</u> , <u>L.N. MAGDICH</u> , Effects of Electric Matching Circuit Parameters on the Acousto-optic Mode Locker Functioning
09:45 – 10:00	<u>M.M. MAZUR</u> , <u>L.I. MAZUR</u> , <u>YU.A. SUDDENOK</u> , <u>V.N. SHORIN</u> , Adaptive change of AOTF instrumental function at frequency modulation of ultrasonic wave
10:00 – 10:15	<u>A.I. CHIZHIKOV</u> , <u>K. YUSHKOV</u> , <u>V. MOLCHANOV</u> , Acousto-optic modulator based on crystal NaBi(MoO <sub>4</sub> ) <sub>2</sub>
10:15 – 10:45	<b>Tea / Coffee Break</b>
	<b>Session IV: Light and Sound in Biology and Medicine</b> Chair: P. Saggau
10:45 – 11:30	<u>M. DUOCASTELLA</u> , Toward ultrafast volumetric microscopy with acoustic liquid lenses [Keynote]
11:30 – 11:45	<u>S.J. POGORZELSKI</u> , <u>P. ROCHOWSKI</u> , <u>M. GRZEGORCZYK</u> , Photosynthetic energy storage efficiency in biofilms determined by photoacoustics
11:45 – 12:00	<u>A. JIMÉNEZ-VILLAR</u> , <u>D. RUMIŃSKI</u> , <u>G. GONDEK</u> , <u>I. GRULKOWSKI</u> , Scanning Laser Ophthalmoscope Integrated with Tunable Lens: Imaging and Ophthalmic Applications
12:00 – 12:15	<u>A. MACHIKHIN</u> , <u>V. BATSHEV</u> , <u>A. GOREVOY</u> , <u>D. KHOKHLOV</u> , <u>V. POZHAR</u> , Improvement of endoscopic imaging systems by means of acousto-optic filtration of light
12:15 – 12:30	<u>A. JIMÉNEZ-VILLAR</u> , <u>E. MAĆZYŃSKA</u> , <u>K. KARNOWSKI</u> , <u>M. JANNESARI</u> , <u>B. KAŁUŻNY</u> , <u>M. WOJTKOWSKI</u> , <u>I. GRULKOWSKI</u> , Non-contact Optical Probing of Ocular Biomechanics
12:30 – 13:30	<b>Lunch and Tea / Coffee</b>

## Tuesday, June 25, 2019 (cont'd)

**Session V: Acousto-Optic Materials and Structures**  
**SESSION DEDICATED TO THE MEMORY OF PROF. LUDMILA KULAKOVA**  
 Chair: V.Ya. Molchanov

- 13:30 – 13:45 V.B. VOLOSHINOV, Tribute to the Memory of Professor Lyudmila Kulakova
- 13:45 – 14:20 V.B. VOLOSHINOV, N.V. POLIKARPOVA, Acousto-Optic Probing of Acoustic Beams Generated by Multiple Reflections in Paratellurite Crystal [Invited]
- 14:20 – 14:35 W. JEON, J. AN, Enhancement of Acousto-Optic Interaction by Using Two-Scale Phoxonic Crystals
- 14:35 – 14:50 V.S. KHORKIN, V.B. VOLOSHINOV, M.S. KUZNETSOV, Anisotropic Acousto-Optic Interaction in KRS-5 Cubic Crystal Possessing Induced Optical Anisotropy

14:50 – 15:20

**Tea / Coffee Break**

**Session VI: Acousto-Optics for Spectroscopy, Metrology and Imaging**  
 Chair: M. Delgado-Pinar

- 15:20 – 15:35 Y. DOBROLENSKIY, O. KORABLEV, A. FEDOROVA, S. MANTSEVICH, Y. KALINNIKOV, N. VYAZOVETSKIY, A. TITOV, A. STEPANOV, A. SAPGIR, I. DZYUBAN, N. EVDOKIMOVA, R. KUZMIN, Y. IVANOV, I. SYNIAVSKIY, Acousto-Optic Spectrometer ISEM for ExoMars-2020 space mission: ground measurements and calibrations
- 15:35 – 15:50 A. NAUMOV, A. GOREVOY, A. MACHIKHIN, V. BATSHEV, V. POZHAR, M. MAZUR, Calibration features of a stereoscopic AOTF-based hyperspectral imager
- 15:50 – 16:05 S.N. MANTSEVICH, K.B. YUSHKOV, A.S. VOLOSHIN, Applications of Collinear Acousto-optic Diffraction for Optical Frequency Combs Generation
- 16:05 – 16:20 C. ISAZA, K. ANAYA, J. PAUL ZAVALA, A. RIZZO, J.C. MOSQUERA, Semiautomatic Acousto-optical Tunable Filter Calibration from Spectrometry in the Visible Range with Deep Learning
- 16:20 – 16:35 G. KOWZAN, Selected applications of acousto-optic modulators in high-precision spectroscopy

## Wednesday, June 26, 2019

08:30 – 09:00

### Registration and Morning Tea / Coffee

#### Session VII: Acousto-Optics in Waveguides / Photonic Structures

Chair: J.-C. Kastelik

09:00 – 09:15

S. ROSALES-MENDOZA, M. DELGADO-PINAR, A. DÍEZ, M.V. ANDRÉS, Characterization of sensitivity of in-fiber acousto-optic interaction

09:15 – 09:30

H. HAN, YU. LI, L. HUANG, L. GAO, M. LIU, T. ZHU, All-fiber dual-wavelength narrowband acousto-optic tunable bandpass filter based on vector mode coupling

09:30 – 09:45

I.M. SOPKO, G.A. KNYAZEV, D.O. IGNATYEVA, V.I. BELOTELOV, Application of layered structures for mid-infrared acousto-optics

09:45 – 10:00

A. TWAROWSKI, P. WCISŁO, Setup for noise cancellation in optical fiber

10:00 – 10:15

M. PAWLAK, Toward Laser Induced Photothermal Infrared Radiometry Spectroscopy

10:15 – 10:45

### Tea / Coffee Break

#### Session VIII: Fundamentals of Acousto-Optic Interaction II

Chair: V.B. Voloshinov

10:45 – 11:20

V.I. BALAKSHY, M.I. KUPREYCHIK, S.N. MANTSEVICH, Anisotropic Light Diffraction in Spatially Periodical Acoustic Field [Invited]

11:20 – 11:35

D.L. POROKHOVNICHENKO, J. RYU, D.V. ZINKIN, V.B. VOLOSHINOV, Analysis of Wide-Angle Acousto-Optic Interaction Geometry in Single Crystal Mercury Bromide

11:35 – 11:50

D. ČIPLYŠ, R. RIMEIKA, A Novel Configuration for Effective Acousto-Optic Diffraction by IDT-radiated Bulk Waves in Lithium Tantalate

11:50 – 12:05

M.I. KUPREYCHIK, V.I. BALAKSHY, Investigation of Close to Collinear Anisotropic Acousto-Optic Interaction in a Biaxial Crystal of Alpha-Iodic Acid

12:05 – 13:00

### Lunch and Tea / Coffee

## Wednesday, June 26, 2019 (cont'd)

### Session IX: Acousto-Optic Devices

Chair: S.J. Pogorzelski

- 13:00 – 13:45 P. SAGGAU, Review of Acousto-Optical Devices in Advanced Microscopy: from 3D Scanning via Super-Resolution to Encoded Multi-Beams [Keynote, SPIE Visiting Lecturer]
- 13:45 – 14:00 J. VANHAMEL, E. DEKEMPER, V.B. VOLOSHINOV, E. NEEFS, D. FUSSEN, Comparison between the electrical bandwidth performance of a transducer and the diffraction efficiency of an AOTF
- 14:00 – 14:15 A.V. RYABININ, M.M. MAZUR, L.I. MAZUR, V.N. SHORIN, Two-crystal acousto-optic modulator of high-power laser radiation
- 14:15 – 14:30 S. VALLE, K.C. BALRAM, High-frequency ( $f_{RF} > 1\text{GHz}$ ) Acousto-Optic modulation using a doubly resonant cavity in a MEMS foundry platform
- 14:30 – 14:45 A. ZUNINO, S. SURDO, M. DUOCASTELLA, Acousto-Optofluidic Multi-spot Generation for High-throughput Laser Material Processing
- 14:45 – 15:40 **Scientific Committee Meeting**
- 19:00 – 21:00 **Conference Dinner (Discussions at Round Tables)**  
**Venue: Hotel Nicolaus, ul. Ducha Świętego 14-16, Toruń**

## Thursday, June 27, 2019

08:30 – 09:00

**Registration and Morning Tea / Coffee****Session X: Novel Applications of Acoustics / Optics**

Chair: M. Duocastella

09:00 – 09:15

E. DEKEMPER, J. VANHAMEL, J.-C. KASTELIK, N. PEREIRA, D. BOLSÉE, G. CESSATEUR, H. LAMY, D. FUSSEN, AOTF-based instrumental concepts for atmospheric science

09:15 – 09:30

R. BIELAS, A. JÓZEF CZAK, Z. ROZYNEK, Acoustical and optical control of Pickering emulsions formation in electric field

09:30 – 09:45

R. HODÉ, S. RAETZ, V. GUSEV, F. JENSON, N. CUVILLIER, M. DUCOUSO, V. TOURNAT, Laser ultrasonics for non-destructive evaluation of adhesively bonded joints

09:45 – 10:00

M. URBAŃSKA, S.M. KOLENDERSKA, F. VANHOLSBECK, Optical Coherent Elastography of the vitreous humour

10:00 – 10:30

**Summary and Closing Ceremony**