

MONDAY AUGUST 22TH, 2022

- 7:30** Registration
- 8:30** Opening ceremony
- 9:00** **Keynote Lecture:** Leonardo A. AMBROSIO
Structured fields constructed from superpositions of nondiffracting beams
- SESSION 1: BEAM SHAPE DESCRIPTION AND EFFECTS**
Chairs: Fabrice ONOFRI & Huan TANG
- 9:45** Diverging and converging schemes of approximations for Gaussian beams
G. Gouesbet*, J. Shen and I. A. Ambrosio
- 10:10** Analytical solutions to classes of integrals with products of Bessel functions of the first kind and their derivatives
L. A. Ambrosio*, G. Gouesbet and J. Wang
- 10:35** Shape sensitive intensity fluctuations using structured illumination
S. Dawda*, Z. Shen and A. Dogariu
- 11:00** Coffee break & registration
- SESSION 2: DROPLETS**
Chairman: Maciej KOLWAS & Gennadiy DERKACHOV
- 11:30** Optical lattices and structural transitions in microdroplets of colloidal suspension probed with luminescent nanoparticles
Y. Shopa, M. Kolwas, I. Kamińska, G. Derkachov, K. Nyandey, T. Jakubczyk, T. Wojciechowski and D. Jakubczyk*
- 11:55** Assessment of non diffractive contributions in the formation and analysis of digital holograms
F. R.A. ONOFRI
- 12:20** Glare points and near-zone sagittal caustic for scattering of a plane wave by a spherical or spheroidal bubble floating in air
J. Lock* and M. Selmke
- 12:45** Luneberg's integral for the description of interferometric particle imaging beyond Fresnel's approximation
M. Brunel*, E. Porcheron, P. Lemaitre, J. Van Beeck, R. Vetrano, G. Grehan and S. Coetmellec
- 13:10** LUNCH
- 19:00** Welcome reception

TUESDAY, AGUST 23TH, 2022

- 9:00** **Keynote Lecture:** David G. GRIER
Holographic particle characterization: unveiling the composition and dynamics of colloidal dispersions with holographic video microscopy
- SESSION 3: SUSPENSIONS**
Chairs: Mariusz Woźniak & Łucja Janicka
- 9:45** Classification of milk fat content categories based on speckle pattern using machine learning
K. Nyandey* and D. Jakubczyk
- 10:10** Laser based detection of microplastics in water
A. Smarandache*, I.-R. Andrei, M. Boni, A. Dinache, A.-M. Udrea and A. Staicu
- 10:35** Statistical investigation of the ultrafast image-based dynamic light scattering to measure bimodal gaussian distributions of nanoparticles
A. Y. Zhao*, J. J. Wang, Y. P. Han and P. Briard
- 11:00** Coffee break
- SESSION 4: FORCES & PROPERTIES**
Chairs: Gérard GOUESBET & Liu YANG
- 11:30** Photophoretic force on an absorbing sphere illuminated by a gaussian beam
L. Liu, J. J. Wang*, P. Briard, L. A. Ambrosio, G. Gouesbet
- 11:55** Particle manipulation using evanescent light fields of optical nanofibres
G. Tkachenko, V. G. Trung and S. Nic Chormaic*
- 12:20** Optical properties of monolayer of spherical particles in absorbing host medium under normal illumination
V. Loiko*, A. Miskevich, N. Loiko
- 12:45** Radiation force on a pemc sphere illuminated by arbitrary-shaped beam
H. Tang*, R. Li, L. Yang, B. Wei, S. Gong
- 13:10** LUNCH
- 14:30** Visit to the Lab

WEDNESDAY, AUGUST 24TH, 2022

- 9:00** **Keynote Lecture:** Monika RICH-MARTE
Tailored optical and acoustic traps for organoid research
- SESSION 5: FORCES & TRAPPING**
Chairs: Leonardo A. AMBROSIO & Monika Rich-Marte
- 9:45** A three-angle light scattering detection scheme for probing orientational dynamics of optically trapped microsphere dimers
P. Parthasarathi*, D. Maciver, L. Lue, J. Sefcik and M. Haw
- 10:10** Optical trapping with femtosecond pulses: excitations, challenges and opportunities
A. De
- 10:35** Coffee break
- SESSION 6: BEAMS & SURFACES**
Chairs: Sile NIC CHORMAIC & Jurgis GRUBE
- 11:05** Beam shape coefficients of electromagnetic zero-order on-axis continuous frozen waves in the generalized Lorenz-Mie theory
L. A. Ambrosio
- 11:30** Ellipsometric control of plasmonic evolution after high-temperature annealing of thin gold film
T. Mishakova, E. Borzhagovsky* and V. Stepkin
- 11:55** Classical and stimulated Doppler effects and the recoil effect on a moving media interface
V. Lymar*, Y. Makovetskiy, R. Ovsianikov and T. Sari
- 12:20** Inverse design of metasurface based on neural network
L. Yang*, R. Li and H. Tang
- 13:00** LUNCH



THURSDAY, AUGUST 25TH, 2022

9:00 **Keynote Lecture:** Edouard BERROCAL
Exhaled saliva droplets and aerosols measured in time and 3D space: Quantification of SARS-CoV-2 flow rates

SESSION 7: MISCELLANEOUS

Chairs: Daniel JAKUBCZYK & Yaroslav SHOPA

9:45 High-resolution volumetric lithographic recording of 3d structures by activating up-conversion luminescence in yb3+ and tm3+ nanoparticles doped into a negative su8 photoresist.
J. Pervenecka, J. Grube*, E Tropins, K. Vítols, V.-T. Viksna, J. Teterovskis, A. Vembris, J. Butikova, G. Kriekle and M. Springis

10:10 Optical model to describe coherent transmittance and absorbance of polymer dispersed liquid crystal film doped with carbon nanotubes at normal interface anchoring.
V. A. Loiko*, A.V. Konkolovich, A. A. Miskevich, D. E. Nestserovich, D. Manaila-Maximean, O. Danila, V. Cîrcu, A. Bărar.

10:35 **Coffee break**

SESSION 8: AEROSOLS

Chairs: Jonas Gienger & Daniel MACIVER

11:05 Remote sensing of biomass burning aerosol by the means of multiwavelength lidar measurements in Warsaw.
L. Janicka*, I. S. Stachlewska, C. Boeckmann, S. Bycenkiene, W. Kumala, H. Baars and R. Engelmann

11:30 On the impact of the internal coupling on fractal aggregates structure factors.
C. Argentin*, M. Mazur, R. Ceolato, M. J Berg and J. Yon

11:55 Modeling atmospheric dust particle optical properties using first generation fractal triangular bipyramid particles.
N. Okeudo*, J. Ding, P. Yang and R. Saravanan

12:20 Improving ice cloud backscattering and determining an optimal ice particle optical property database for lidar-based applications.
J. Coy*, M. Saito, J. Ding, P. Yang

13:00 **LUNCH**

14:30 **Excursion**

19:00 **Conference dinner**

FRIDAY, AUGUST 26TH, 2022

9:00 **Keynote Lecture:** Maciej WOJTKOWSKI
In vivo imaging by spatio-temporal optical coherence techniques

SESSION 9: BIOMEDIA

Chairs: Maciej Wojtkowski & Monika Rich-Marté

9:45 High throughput light scatter imaging of microparticles in flow cytometry.
J. Gienger*, C. Goerke, A. Hoppe, A. Putz, D. Grosenick, M. Hussels

10:10 Scanning dls-oct flow imaging
K. Cheishvili* and J. Kalkman

10:35 Modelling of angle-resolved near-forward light-scatter pulses in flow cytometry using generalized lorenz-mie theory.
J. Gienger*, D. Kage and T. Kaiser

11:00 **Coffee break**

SESSION 10: PLASMONICS & NANOPARTICLES

Chairs: Krystyna KOLWAS & Anastasiya Derkachova

11:30 A new method for measurement of surface plasmon polaritons propagation losses in a laser-cut single silver nanowire.
M. Cwierzona*, M. Żebrowski, M. A. Antoniak, K. Sulowska, M. Nyk, S. Maćkowski, D. Piątkowski

11:55 Ellipsometric registration of coupling of surface and localized plasmons.
E. Bortchagovsky*, T. Mishakova and A. Bogoslovskva

12:20 Dependence of plasmonic properties of lattices of nanoparticles on their orientation. Microellipsometric investigations.
E. Bortchagovsky*, Y. Demydenko, A. Bogoslovskva, T. Mishakova, J. Tang, M. Fleischer, I. Milekhin and D. R. T. Zahn

12:45 Extended dynamics and lasing of nanoemitters enhanced by dispersive carbon nanotubes.
G. Burlak

13:10 Damping rates of dissipative processes in metal plasmonic nanoparticle.
K. Kolwas

13:30 **LUNCH**

14:30 **End of LIP2022**

PROGRAM

August 21-26th, 2022

Institute of Physics Polish Academy of Sciences,

Warsaw, Poland



Laser-light and Interactions with Particles

Optical Particle Characterization follow-up !



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