COLA 2026 | PROGRAM

Sunday, September 13

17:00-19:00		Registration
18:00-21:00		Welcome reception at Radisson BLU Hotel Lietuva

Monday, September 14

PLENARY 1 – session chair: G. Raciukaitis

9:00-9:15		Opening of the COLA 2026 conference	**Gediminas Raciukaitis (Lithuania)**
9:15-10:00	Mo1-PL1	The world of atoms at the attosecond time scale	**Anne L'Huillier (Sweden)**
10:00-10:30		**Coffee break**	

Fundamentals of Laser-Material Interactions 1 - session chair: N. Bulgakova

10:30-11:00	Mo2-IN1	Ultrashort laser excitation of metals: Nonequilibrium dynamics and transient optical properties er ablation of metals	**Baerber Rethfeld (Germany)**
11:00-11:15	Mo2-O2	Generation and stabilization of crystal defects in short pulse laser processing: Insights from large-scale atomistic modeling	**Leonid Zhigilei (United States)**
11:15-11:30	Mo2-O3	Revealing the dynamics of HSFL and LSFL formation on metals through grazing-incidence XFEL scattering	**Motoaki Nakatsutsumi (Germany)**
11:30-11:45	Mo2-O4	Laser-fabrication of vibrating microcavities on silicon	**Jan Siegel (Spain)**
11:45-12:00	Mo2-O5	Physical mechanisms in ultrashort double pulse and burst laser ablation of metals	**Daniel Foerster (Germany)**
12:00-13:45		**Lunch break**	

Laser Ablation in Liquids - session chair: K. M. Tibbetts

13:45-14:15	Mo3-IN1	Laser-Driven Nonequilibrium Chemistry in Liquids for Catalytic Interface Engineering	**Myong Yong Choi (South Korea)**
14:15-14:30	Mo3-O2	Pulsed Laser Fabrication of High-Temperature-Stable, Carbon-Supersaturated Cantor Alloy Nanoparticles in Liquids: Fundamentals and Applications	**Stephan Barcikowski (Germany)**
14:30-14:45	Mo3-O3	Threefold Efficiency Enhancement and Narrowed Nanoparticle Size Distribution in Laser Ablation of Gold in Water by GHz-Burst Irradiation	**Maximilian Spellauge (Germany)**
14:45-15:00	Mo3-O4	Laser Induced Transformation of Gold Nanoparticle Chains: Disruption and Fragmentation Mechanisms	**Giuseppe Compagnini (Italy)**
15:00-15:15	Mo3-O5	Laser ablation in viscous liquids	**Emmanuel Haro Poniatowski (Mexico)**
15:15-15:45		**Coffee break**	

Laser Ablation in Bulk Materials I– session chair: D.Foerster

15:45-16:15	Mo4-IN1	Efficiency aspects in ultrashort pulse laser ablation of metals	**Mindaugas Gedvilas (Lithuania)**
16:15-16:30	Mo4-O2	Influence of pulse repetition rate on particle redeposition during laser ablation of silicon	**Mawuli Ametowobla (Germany)**
16:30-16:45	Mo4-O3	Ablation efficiency in MHz-burst percussion drilling of thin metal foils	**Peter Gregorcic (Slovenia)**
16:45-17:00	Mo4-O4	Femtosecond laser–patterned surface structures replicated in polymers to control cell adhesion	**Johannes Heitz (Austria)**
17:00-19:00		**POSTER SESSION I**	

Tuesday, September 15

Emerging Applications of Laser Ablation - session chair: P. Gecys

9:00-9:30	Tu5-IN1	Visualization and manipulation of quantum vortex enabled by laser ablation in superfluid helium	**Yosuke Minowa (Japan)**
9:30-9:45	Tu5-O2	Low Kerf-Loss Slicing of n-type 4H-SiC Wafers via a Two-Pass Burst-mode Femtosecond Laser Modification Strategy	**Chung-Wei Cheng (Taiwan)**
9:45-10:00	Tu5-O3	Femtosecond Laser Ablation Meets XPS: Opportunities and Pitfalls in Depth Profiling of InP	**Oleksandr Gatsa (Czechia)**
10:00-10:15	Tu5-O4 S	Management of residual stress zones during TGV fabrication using long GHz bursts of femtosecond pulses	**Evaldas Kažukauskas (Lithuania)**
10:15-10:45		**Coffee break**	

Pulsed Laser Deposition I - session chair: Th. Lippert

10:45-11:15	Tu6-IN1	Autonomous synthesis and human-AI collaboration with pulsed laser deposition	**Sumner B. Hariss (United States)**
11:15-11:30	Tu6-O2 S	Autonomous Parameter Optimization for Layer-by-Layer Growth in Pulsed Laser Deposition via Machine-Learning-Assisted RHEED Analysis	**Pietro Mani (Switzerland)**
11:30-11:45	Tu6-O3	Time dependence of the laser ablation plume and deposited film elemental composition for a metal alloy target	**Wayne McGinnis (United States)**
11:45-12:00	Tu6-O4	Entropy-driven catalysis in complex multi-element coatings by colliding plasmas approach	**Stefan-Andrei Irimiciuc (Romania)**
12:00:-12:15	Tu6-O5	Advances in large-scale PLD processing of HTS-Tapes	**Ralph Delmdahl (Germany)**
12:15-13:45		**Lunch break**	

Fundamentals of Laser-Material Interactions 2 - session chair: L Zhigilei

13:45-14:15	Tu7-IN1	Nanosecond optical breakdown - from nanoeffects to extreme states of matter	**Alfred Vogel (Germany)**
14:15-14:30	Tu7-O2	Investigating Carrier Dynamics in Polycarbonate AfterExcitation by Ultrashort Laser Pulses	**George Tsibidis (Greece)**
14:30-14:45	Tu7-O3	Correlation of Ex-Situ Ablation Efficiency and Inter-pulse Dynamics in Burst-Mode USP Laser Processing of Metals	**Benedikt Bornschlegel (Germany)**
14:45-15:00	Tu7-O4	How do structural heterogeneities foster nonequilibrium phase pathways under ultrafast laser excitation?	**Aram Yedigaryan (France)**
15:00-15:15	Tu7-O5 S	Effects of shielding and re-deposition mechanisms during GHz double-pulse irradiation of a thin gold film	**Markus Olbrich (Germany)**
15:15-15:45		**Coffee break**	

Emerging Photon Sources and Applications – session chair: F. Courvoisier

15:45-16:15	Tu8-IN1	Advancing Laser Drivers and Beam Delivery for ScalableLaser-Driven Inertial Fusion	**Anastasios Koulouklidis (Germany)**
16:15-16:30	Tu8-O2	Simultaneous pulse compression and contrast enhancement in Herriot-type multipass cells	**Valentina Shumakova (Germany)**
16:30-16:45	Tu8-O3	High-Power Femtosecond Lasers for Extreme Light Generation	**Valdas Maslinskas (Lithuania)**
16:45-17:00	Tu8-O4	Generation of circularly arranged burst pulse trains with nanosecond pulse intervals	**Keitaro Shimada (Japan)**
17:00-19:00		**POSTER SESSION II**	

Wednesday, September 16

Ultrafast Phenomena - session chair: R. Stoian

9:00-9:30	We9-IN1	Atomic to nano-scale structural dynamics in laser-irradiated materials studied by time-resolved X-ray scattering (INVITED TALK)	**Klaus Sokolowski-Tinten (Germany)**
9:30-9:45	We9-O2	Formation of laser-induced periodic surface structures (LIPSS) on silica films probed by ultrafast time-resolved small-angleX-ray scattering	**Jörn Bonse (Germany)**
9:45-10:00	We9-O3 S	Development of a time-resolved dual-view interferometric imaging system for femtosecond laser ablation in fused silica	**Wataru Kimura (Japan)**
10:00-10:15	We9-O4 S	Time-resolved evidence that spallation is not a general multi-pulse ablation mechanism	**Julian Vollmann (Germany)**
10:15-10:45		**Coffee break**	

Pulsed Laser Deposition II - session chair: S. Harris

10:45-11:15	We10-IN1	Fabrication of Spatially-Addressable Material Libraries of Semiconducting Oxides by Combinatorial Pulsed Laser Deposition	**Holger von Wenckstern (Germany)**
11:15-11:30	We10-O2	Selective acceleration and deceleration processes in multicomponent laser-produced plasmas	**Alexander V. Bulgakov (Czech Republic)**
11:30-11:45	We10-O3	Strain Gradients and Flexoelectric Phenomena in Centrosymmetric Oxide Thin Films	**Nick Shepelin (Switzerland)**
11:45-12:00	We10-O4	Micro-structured carbon-based targets for high-repetition-rate laser-matter interaction experiments	**Maria Dinescu (Romania)**
12:15-18:00		**Lunch on a way to excursion at Trakai Castle**	
19:30-23:00		**Conference dinner** **Important! Buses will depart from the main entrance of the Radisson Blu Hotel Lietuva at 19:00**	

Thursday, September 17

	Laser Applications in Biology and Life Sciences I - session chair: S Barcikowski			
9:00-9:30	Th11-IN1		Scaling fs Laser-Based 3D Printing and Bioprinting	**Aleksandr Ovsianikov (Austria)**
9:30-9:45	Th11-O2		Rare cell isolation via BA-LIFT: from laboratory potential to clinical challenges	**Carlos Molpeceres (Spain)**
9:45-10:00	Th11-O3		Hybrid FDM-Laser 3D Printing for Bone Tissue Engineering and Advanced Manufacturing	**Emmanuel Stratakis (Greece)**
10:00-10:10			FemtoLux - Industrial Femtosecond Laser for Micromachining Applications	**Lukas Rimgaila (Ekspla, Lithuania)**
10:10-10:15			Advanced STANDA Mechatronic Systems for Laser Micromachining, Metrology and Semiconductors	**Artur Piščialov (STANDA, Lithuania)**
10:15-10:45			**Coffee break**	
	Laser MicroNano Machining - session chair: M. Terakawa			
10:45-11:15	Th12-IN1		Ultrafast Laser-Induced Generation of High-spect Ratio Nano-Pillars	**Francois Courvoisier (France)**
11:15-11:30	Th12-O2		Laser-fabricated amplitude filters for shaping longitudinal intensity distribution of non-ffractive laser beams	**Juozas Dudutis (Lithuania)**
11:30-11:45	Th12-O3		Programmable laser nanostructuring	**Razvan Stoian (France)**
11:45-12:00	Th12-O4	S	Enhanced nonlinear interactions in silicon using counter-focused femtosecond laser pulses	**Niladri Ganguly (France)**
12:00:-12:15	Th12-O5		Site-specific pulsed laser annealing of 2D materials	**Nazar Farid (Ireland)**
12:15-13:45			**Lunch break**	
	Laser Direct Writing - session chair: M. Gedvilas			
13:45-14:15	Th13-IN1		Laser direct writing of functional conductive structures	**Mitsuhiro Terakawa (Japan)**
14:15-14:30	Th13-O2		Laser-Based Additive Nanomanufacturing and Inkless Printing Multimaterial Electronics	**Masoud Mahjouri-Samani (United States)**
14:30-14:45	Th13-O3		Spatially Structured Laser Printing of Protein via LCOS-Shaped Illumination	**Daniela Serien (Japan)**
14:45-15:00	Th13-O4	S	Influence of phase explosion on aerosol generation and deposition in laser ablation dry aerosol printing	**Weiming Su (Ireland)**
15:00-15:15	Th13-O5		High Resolution Color Decoration by Selective Ablation of Multilayer Thin Films	**Rainer Kling (Switzerland)**
15:15-15:45			**Coffee break**	
	Laser-Based Analytical Methods - session chair: J. Siegel			
15:45-16:15	Th14-IN1		Full time-range multi-wavelength monitoring for improving underwater LIBS performance	**Tetsuo Sakka (Japan)**
16:15-16:30	Th14-O2		Coupling optical and chemical imaging in laser-assisted mass spectrometry for environmental and biological applications	**Cristian Focsa (France)**
16:30-16:45	Th14-O3	S	Ultrashort Laser Pulse Duration Monitoring via Air-Breakdown Acoustics	**Indrė Meškėlaitė (Lithuania)**
16:45-17:00	Th14-O4		In-Process Quantitative Phase Imaging in Laser Processing inside Glass with Spatial Phase Modulation	**Yuka Yamamuro (Japan)**
17:00-19:00			**POSTER SESSION III**	

Friday, September 18

	Applications of Laser Materials Processing - session chair: M. Mahjouri-Samani			
9:00-9:30	Fr15-IN1		Multi-dimensional optical storage in glass for storage crisis	**Masaaki Sakakura (United Kingdom)**
9:30-9:45	Fr15-O2		Absorption and modifications in glass with single femtosecond MHz burst	**Eric Audouard (France)**
9:45-10:00	Fr15-O3		Opportunities and challenges in processing glass substrates with a femtosecond laser	**Deividas Andriukaitis (Lithuania)**
10:00-10:15	Fr15-O4	S	Fabrication of optical phase elements in bulk sapphire by UV	**Edvinas Aleksandravičius (Lithuania)**
10:15-10:45			**Coffee break**	
	AI and Machine Learning in Laser Processing - session chair: Sh. Tano			
10:45-11:15	Fr16-IN1		Multiscale simulations from ab initio to machine learning for controlling time scales in femtosecond laser-induced melting and recrystallization	**Martin Garcia (Germany)**
11:15-11:30	Fr16-O2		Effects of feedback-controlled beam shaping with Bayesian Optimization on efficiency of ultrashort pulse laser ablation	**Matthias Greiber (Germany)**
11:30-11:45	Fr16-O3	S	Modeling Surface-Topography-Dependent Laser Ablation of Diamond Using Deep Learning	**Yuta Teshima (Japan)**
11:45-12:00	Fr16-O4		Data-Driven Platform for Automated Wettability Control of Laser-Textured Surfaces	**Alexander Wienke (Germany)**
12:00:-12:15	Fr16-O5		Deep learning-assisted prediction of cracks in laser-drilled glass micro-holes	**Kotaro Nakagawa (Japan)**
12:15-13:45			**Lunch break**	
	Surface MicroNano Structuring - session chair: J. Bonse			
13:45-14:15	Fr17-IN1		Nonlinear dynamics, memory, and feedback in ultrafast laser-driven surface nanopatterning	**Jean-Philippe Colombier (France)**
14:15-14:30	Fr17-O2		Laser Ablation-Induced Structural Color in Silicon-on-Insulator via Guided-Mode Resonance	**Vygantas Mizeikis (Japan)**
14:30-14:45	Fr17-O3		Precise Surface Structuring of SiO2 by Femtosecond Laser Pulses Induced Microplasmas	**Martin Ehrhardt (Germany)**
14:45-15:00	Fr17-O4		Influence of Pulse Duration on Ablation Efficiency and Structure Formation in DLIP Using a Pulse Compression Module	**Bogdan Voisiat (Germany)**
15:00-15:15	Fr17-O5		Transient DUV Activation for Surface-Selective 515 nm Ultrafast Ablation of Dielectrics	**Sönke Vogel (Germany)**
15:15-15:45			**Coffee break**	
	PLENARY II - session chair: G. Raciukaitis			
15:45-16:30	Fr18-PL2		Nonlinear Electromagnetic Waves in Strong-Field QED limit	**Sergei Bulanov (Czech Republic)**
16:30-17:00			**AWARDS, COLA 2028 ANNOUNCEMENT AND COLA 2026 CLOSURE**	