

**2021 Frontiers in Optics + Laser Science and  
Quantum Information and Measurement VI**  
**01 November – 05 November 2021**  
**Virtual Event - Eastern Daylight Time (UTC - 04:00)**

# Agenda of Sessions — Monday, 01 November

Technical Sessions are hyperlinked. Click the session title to access the appropriate virtual room.

Eastern Daylight Time (EDT, UTC - 04:00)	FiO	FiO	FiO	FiO	FiO	LS	QIM VI	QIM VI	QIM VI		
06:00–08:00	<a href="#">FM1A • Structured Light</a> (ends at 07:45)	<a href="#">FM1B • Comb and Advanced Light Source</a>	<a href="#">FM1C • Photonic Quantum Technologies I</a> (ends at 07:30)								
08:00–09:00	Dedicated Exhibit Time										
09:00–10:00		<a href="#">FM2B • Eye Tracking</a>	<a href="#">FM2C • Volume Holography and Fiber Devices</a>	<a href="#">FM2D • Novel Developments in Optical Interferometric Imaging</a>	<a href="#">FM2E • Nanophotonics and Nanoplasmonics</a>	<a href="#">LM2F • Terahertz Metamaterials and Plasmonics</a> (begins at 08:30)					
11:00–11:30	SpE1 • Tech Talk: Spiking Neuron in a Photonic Integrated Circuit										
11:00–13:00	<a href="#">FM3A • Autonomous Imaging and Robotic Surgery</a>	<a href="#">FM3B • Analog and Digital Holography</a>	<a href="#">FM3C • Technologies for Optical Device Developments</a>	<a href="#">FM3D • Machine Learning in Biomedical Applications: Optical Coherence Tomography</a>	<a href="#">FM3E • Coherent Laser and Light Generation</a>	<a href="#">LM3F • Laser Science Dissertation Award Presentations</a>	<b>M1A • Opening Remarks and Plenary Session I</b> <i>Lorenza Viola, Dartmouth College, USA</i> <b>Advances in Quantum Metrology under Correlated Quantum Noise</b> <i>Luis L. Sánchez-Soto, Universidad Complutense de Madrid, Spain</i> <b>Achieving the Ultimate Timing Resolution</b> (10:30–12:30)				
11:00–19:45	Laser Science Symposium on Undergraduate Research										
12:00–12:30	<a href="#">SpE2 • Tech Talk: Industrial Applications of the Monocular Stereo Camera as an Omnidirectional Imaging and Ranging Device</a>						<b>SpE1 • Meet Plenary Speaker:</b> Luis Sánchez-Soto <b>SpE2 • Meet Plenary Speaker:</b> Lorenza Viola (12:30–13:00)				
13:00–13:45	JM4A • Visionary Session I <i>Paul Debevec, Netflix, USA</i>						<a href="#">M2A • Entanglement-enabled Quantum Technologies I</a> (13:00–15:00)	<a href="#">M2B • Quantum Sensors I</a> (13:00–15:00)	<a href="#">M2C • Quantum Communication I</a> (13:00–15:00)		
13:45–14:00	Break										
14:00–14:30	SpE3 • Tech Talk: Multi-milijoule Infrared Pulses from a Laser Wakefield Accelerator										
14:00–15:30	<a href="#">FM5A • Sensors for Autonomy</a>	<a href="#">FM5B • New Optical Technologies</a>	<a href="#">FM5C • High-performance Optical Imaging</a>	<a href="#">FM5D • Optical Interactions and Harmonic Generation</a>	<a href="#">FM5E • Optical Sensing, Monitoring, and Imaging for Biomedicine</a> (ends at 16:00)	<a href="#">LM5F • X-ray Spectroscopy and XFELs</a>					
16:00–18:00	<a href="#">FM6A • Autonomous Technologies and Applications</a>	<a href="#">FM6B • Emerging Technologies</a>	<a href="#">FM6C • Interferometry and Camera-based Imaging</a>	<a href="#">FM6D • Optical Processes in Solids and Nanoscale Light-matter Interaction</a>		<a href="#">LM6E • Quantum Science I</a>					
18:00–19:00	SpE21 • Imaging Optical Design Technical Group Special Talk SpE24 • Laser Systems Technical Group Campfire Session: Breakthrough Starshot - The Path to the World's Largest Laser for Interstellar Lightsail Propulsion										
19:00–19:45	SpE26 • Physicist Random Walk: Careers, Graduate School, & Mental Maintenance										

# Agenda of Sessions — Tuesday, 02 November

Technical Sessions are hyperlinked. Click the session title to access the appropriate virtual room.

Eastern Daylight Time (EDT, UTC - 04:00)	FiO	FiO	FiO	FiO	FiO	LS	QIM VI	QIM VI	QIM VI
07:00–08:00	<b>JTu1A • Joint Poster Session I</b>						<b>Tu1A • Plenary Session II</b> Warwick Bowen, <i>University of Queensland, Australia</i> <b>Absolute Quantum Advantage in Biomaging</b> Akira Furusawa, <i>The University of Tokyo and RIKEN, Japan</i> <b>Large-scale Quantum Computing with Quantum Teleportation</b> (06:00–08:00)		
08:00–09:00	<b>FTu2A • Tutorial: Optical Technologies for Autonomous Applications</b>	<b>FTu2B • Medical Applications of AR/VR</b>	<b>FTu2C • Light - Matter Interactions</b>	<b>FTu2D • Fiber Optics and Quantum Communications</b>	<b>FTu2E • Integrated Photonics for Quantum Applications</b>	<b>LTu2F • Ultrafast Dynamics in Complex Systems I</b> (ends at 09:15)	<b>SpE4 • Meet Plenary Speakers:</b> Warwick Bowen and Akira Furusawa (08:00–08:30)		
09:00–09:15	Break								
09:15–10:00	<b>JTu3A • Visionary Session II</b> Eli Yablonovitch, <i>University of California, Berkeley, USA</i>								
10:00–11:00	Dedicated Exhibit Time								
10:30–11:30	<b>SpE5 • Ultra-intense Laser Science and Technology</b>								
11:00–12:30	<b>SpE4 • APS Meet the Physical Review Editors</b>						<b>Tu2A • Precision Measurements and Quantum Metrology I</b>	<b>Tu2B • Nonclassical Light Sources and Detectors I</b>	<b>Tu2C • Quantum Optics of Light-atom Interactions I</b>
11:15–12:00	<b>JTu4A • Visionary Session III</b> Ryan McMichael, <i>Zoox Inc., USA</i>								
12:00–12:30	<b>SpE6 • Tech Talk: Computational 3D/4D Holographic Imaging</b>								
12:30–13:45	<b>JTu5A • Plenary Session I</b> Joseph Goodman, <i>Stanford University, USA</i>						Break (12:30–13:00)		
14:00–14:20	<b>HT1 • Hot Topic Coffee Break: The Time Is Now - Latest Developments from the AIP TEAM-UP Report</b> <i>Presented by AIP</i>						<b>Tu3A • Entanglement-enabled Quantum Technologies II</b> (13:00–14:30)	<b>Tu3B • Quantum Communication II</b> (13:00–14:30)	
14:20–14:40	<b>TS1 • Technology Showcase: Luminare 2021 Industry-first Technology Winners</b> <i>Presented by Luminare</i>						<b>SpE7 • Tuesday Virtual Coffee Break II</b> (14:30–15:00)		
15:00–15:30	<b>SpE8 • Tech Talk: The Power of Label Free Holographic 3D Imaging in Flow-cytometry</b>								
15:00–16:00	<b>SpE7 • Congressional Fellowship Q&amp;A: A Unique Career Opportunity for Scientists and Engineers</b>								
15:30–17:00	<b>FTu6A • Smart Cameras with Machine Learning</b>	<b>FTu6B • Silicon Photonics</b>	<b>FTu6C • Advanced Techniques for Fiber Optics Communications</b>	<b>FTu6D • Frequency Combs</b>		<b>LTu6E • Attosecond Spectroscopy and High Harmonic Generation</b> (15:00–16:30)			
16:00–16:30	<b>SpE9 • Tech Talk: Molecules in Intense XFEL Fields</b>								
16:30–17:30	Break								
17:30–18:15	<b>SpE12 • Optica Annual Business Meeting</b> <b>SpE10 • DLS Business Meeting</b>								
17:30–18:45	<b>JTu7A • Joint Postdeadline Session I</b>								

# Agenda of Sessions — Wednesday, 03 November

Technical Sessions are hyperlinked. Click the session title to access the appropriate virtual room.

Eastern Daylight Time (EDT, UTC - 04:00)	FiO	FiO	FiO	FiO	FiO	LS	QIM VI	QIM VI	QIM VI
08:00–09:00	<a href="#">FW1A • Tutorial: Incorporating Physics Priors into Machine Learning for Inverse Problems</a>	<a href="#">FW1B • Complex Light I</a>	<a href="#">FW1C • Fiber Fabrication and Test</a>	<a href="#">FW1D • Lithium Niobate Integrated Photonics (begins at 07:00)</a>	<a href="#">FW1E • Photonic Quantum Technologies II (begins at 07:00)</a>	<a href="#">LW1F • Ultrafast Dynamics in Complex Systems II</a>			
09:30–10:00	<a href="#">SpE22 • Tech Talk: Cavity Optomechanical Sensors and the Effect of Noise and Drift on Inertial Sensing</a>								
10:00–10:15	Break						<b>W1A • Plenary Session III</b> Philip Walther, <i>University of Vienna, Austria</i> <b>Quantum Photonics for Quantum Machine Learning and Secure Computing</b> (10:00–10:45)		
10:15–11:00	<b>JW2A • Visionary Session IV</b> <i>Jiangying Zhou, Defense Advanced Research Projects Agency, USA</i>								
11:00–12:00	Dedicated Exhibit Time <a href="#">SpE17 • Nonimaging Optical Design Technical Group Special Talk</a> <a href="#">SpE23 • Fiber Modeling and Fabrication Technical Group Special Talk</a>						<b>SpE8 • Meet Plenary Speaker: Philip Walther</b> (11:00–11:30)		
12:00–12:30	<a href="#">SpE11 • Tech Talk: The Search for the Optimum Information Rate and Symbol Rate of PS-QAM Systems to Enable Highly Efficient Optical Transmission</a> <a href="#">SpE25 • Women at FiO Coffee Break</a>						<b>W2A • Precision Measurements and Quantum Metrology II</b> (11:30–13:00)	<b>W2B • Nonclassical Light Sources and Detectors II</b> (11:30–13:00)	<b>W2C • Quantum Sensors II</b> (11:30–13:15)
12:30–13:30	<b>JW3A • Plenary Session II</b> <i>Anne L'Huillier, Lund University, Sweden</i>						<b>SpE9 • Wednesday Virtual Coffee Break I</b> (13:00–13:30)		
13:45–14:30	Break						<b>W3A • Quantum Simulation</b> (13:30–15:00)	<b>W3B • Quantum Communication III</b> (13:30–15:00)	
14:00–14:30	<a href="#">SpE25 • Women at FiO Coffee Break</a>								
14:30–15:15	<b>JW4A • Visionary Session V</b> <i>Ana Maria Rey, University of Colorado at Boulder, USA</i>								
15:30–17:00	<a href="#">FW5A • Optical Computing in Machine Learning</a>	<a href="#">FW5B • Information Acquisition and Processing</a>	<a href="#">FW5C • Complex Light II</a>	<a href="#">FW5D • Novel Fiber Optics Devices and Components</a>	<a href="#">FW5E • Neuromorphic Photonics</a>	<a href="#">LW5F • Quantum Science II</a>	<b>SpE10 • Wednesday Virtual Coffee Break II</b> (15:00–15:30)		
17:00–17:30	<a href="#">SpE13 • Tech Talk: Interactive Generation of Full Color 4K Image Hologram</a>								
17:30–19:00	<a href="#">FW6A • Machine Learning for Extreme Measurements</a>	<a href="#">FW6B • Advanced SiN Photonics</a>							
19:00–20:00	<b>JW7A • Joint Poster Session II</b>								
19:30–20:30	<a href="#">SpE19 • Color Technical Group Coffee Break</a>								

# Agenda of Sessions — Thursday, 04 November

Technical Sessions are hyperlinked. Click the session title to access the appropriate virtual room.

Eastern Daylight Time (EDT, UTC - 04:00)	FiO	FiO	FiO	FiO	FiO + LS	LS	QIM VI	QIM VI	QIM VI
06:00–07:30	JTh1A • Joint Postdeadline Session II								
07:30–08:00	Break								
08:00–09:00	FTh2A • Integrated Laser Technology	FTh2B • Ultrafast Phenomena I	FTh2C • Computer-generated Holography and Holographic Display	FTh2D • Plasmonics and Metamaterials	LTh2E • Optical Cavity and Nanocavity Coupling				
09:00–09:15	Break								
09:15–10:00	JTh3A • Visionary Session VI Keith Nelson, Massachusetts Institute of Technology, USA								
10:00–10:30	SpE14 • Tech Talk: Silicon Photonics for the Visible Spectrum								
10:30–12:00	FTh4A • Computational Imaging with Machine Learning	FTh4B • Ultrafast Phenomena II (begins at 10:15)	FTh4C • Computational/ Transformation Optics and Display	FTh4D • Advanced Materials for Photonics	FTh4E • Nanophotonics and Plasmonics II (begins at 10:00)	LTh4F • Photonics and Nanophotonics			
11:00–11:30	SpE15 • Tech Talk: Light Emission by Atoms and by Free Electrons in Photonic Time-crystals						Th2A • Precision Measurements and Quantum Metrology III (11:00–12:30)	Th2B • Quantum Optics of Light-atom Interactions II (11:00–12:30)	Th2C • Quantum Information Processing and Computing I (11:00–12:30)
12:40–13:00	HT2 • Hot Topic Coffee Break: Will Congress Provide a Windfall for Science Budgets? <i>Presented by AIP</i>						SpE11 • Thursday Virtual Coffee Break I (12:30–13:00)		
13:00–13:45	Dedicated Exhibit Time (ends at 14:00) SpE20 • Fiber Optics Technology and Applications Technical Group Special Talk on Fiber Sensors						Th4A • Quantum Imaging I (13:00–14:30)	Th4B • Integrated and On-chip Quantum Devices I (13:00–14:30)	
14:00–14:30	SpE16 • Tech Talk: Generalized Collective Mode Spectroscopy and Quantum Probes of Quantum Matter from a Theory Perspective								
14:00–15:00	JTh5A • Joint Poster Session III SpE27 • Nonlinear Optics Technical Group Coffee Break						SpE12 • Thursday Virtual Coffee Break II (14:30–15:00)		
15:00–15:30	SpE18 • Tech Talk: Cylite Delivers Hyperparallel OCT into Ophthalmic Markets						Posters		
15:00–17:00	FTh6A • Computational Microscopy with Machine Learning	FTh6B • Novel Passive Photonics	FTh6C • Classical/ Quantum Information Processing, Sensing and Metrology	FTh6D • General Quantum Electronics	LTh6E • Ultrafast Dynamics in Complex Systems III				

## — Friday, 05 November

Eastern Daylight Time (EDT, UTC - 04:00)	QIM VI	QIM VI	QIM VI
10:30–12:30	F1A • Quantum Imaging II	F1B • Quantum Opto-mechanics	F1C • Quantum Information Processing and Computing II
12:30–13:00	SpE13 • Friday Virtual Coffee Break II		
13:00–15:00	F2A • Quantum Repeaters and Quantum Memory	F2B • Integrated and On-chip Quantum Devices II	F2C • Quantum Information Processing and Computing III
15:00–15:30	SpE14 • Friday Virtual Coffee Break II		