

World of Photonics Congress 2019 - Session Overview

	Plenary / Keynote / Award		CLEO@Europe-EQEC - Conference on Lasers and Electro-Optics and European Quantum Electronics Conference		European Conferences on Biomedical Optics (ECBO)
	Joint Session		EOS Conferences on Optical Technologies		LiM - Lasers in Manufacturing
			SPIE Digital Optical Technologies		SPIE Optical Metrology
					OSA Imaging and Applied Optics

Day	Sunday June 23	Monday June 24	Tuesday June 25	Wednesday June 26	Thursday June 27
Room 1 ICM Ground Floor	EB – Quantum Information, Communication and Sensing 10:30 - 12:00 Quantum interfaces 14:00 - 15:30 Integrated and engineered photonics 16:00 - 17:30 Quantum communication and applications 18:00 - 19:30 Quantum information processing	08:30 - 09:30 CLEO/Europe Plenary Talk 09:40 - 11:00 World of Photonic Congress Opening and Plenary Talk CJ - Fibre and Guided Wave Lasers and Amplifiers 11:15 - 12:45 Mid-IR laser sources and components 14:15 - 15:45 Waveguide lasers 16:15 - 17:45 Mode-locked fiber lasers and nonlinear amplifiers 18:00 -19:00 Nobel Price Plenary Talk	CJ - Fibre and Guided Wave Lasers and Amplifiers 08:30 - 10:00 Nonlinear frequency conversion and 2 μm fiber lasers 10:30 - 12:30 EQEC 2019 Plenary Talk and Award Ceremony EA – Quantum Optics and Ultracold Quantum Matter 14:00 - 15:30 Quantum control CJ – Fibre and Guided Wave Lasers and Amplifiers 16:00 - 17:30 Multimode nonlinear fiber optics	10:30 - 11:25 Optical Metrology Plenary Session CJ – Fibre and Guided Wave Lasers and Amplifiers 14:00 - 15:30 Ultrafast 2μm fiber laser systems JSVI – 50 years of integrated optics 16:00 - 17:30 50 Years of integrated optics I	CJ – Fibre and Guided Wave Lasers and Amplifiers 08:30 - 10:00 Spatiotemporal effects in multimode fiber lasers 10:30 - 12:00 Single frequency and tunable lasers 14:00 - 15:30 Raman and NIR fiber lasers 16:00 - 17:30 Coherent beam combining and multi-core fibers
Room 2 ICM Ground Floor	Preclinical and Clinical Optical Diagnostics 8:30 - 10:00 Clinical Applications: Spectroscopy 10:30 - 12:00 Clinical Applications: Imaging 16:00 - 18:00 Novel Technologies in Optical Diagnostics I	11:15 -12:45 Joint Session SPIE-OM - EQEC: Computational photonics for metrology application Macro Processing 14:30 - 16:00 Brazing 16:30 - 18:00 Welding Cu + Al	Macro Processing 08:30 - 10:00 Welding of Thick Plates and Hybrid Welding 1 10:30 - 12:00 Welding of Thick Plates and Hybrid Welding 2 14:00 - 15:30 Welding (Spatters, Titanium) 16:00 - 17:45 Precision from Melt (Joining, Cutting, Simulation)	Macro Processing 08:30 - 10:00 Joining (Welding and Brazing) 6 10:30 - 12:00 Processing of Transparent Materials 1 14:00 - 15:30 Processing of Transparent Materials 2 16:00 - 17:45 Processing of Transparent Materials 3	Micro Processing 08:30 - 10:00 Processing of Transparent Materials 4 10:30 - 12:00 Surface Functionalization 1 14:00 - 15:30 Surface Functionalization 2 16:00 - 17:45 Surface Functionalization 3
Room 3 ICM Ground Floor	CJ – Fibre and Guided Wave Lasers and Amplifiers 10:30 - 12:00 Short-wavelengths thulium-doped fiber lasers 14:00 - 15:30 Fiber lasers characterisation and components 16:00 - 17:30 Hollow-core fibers and systems 18:00 - 19:30 Large-mode-area fiber-based laser systems	EB – Quantum Information, Communication and Sensing 11:15 - 12:45 Quantum state engineering Micro Processing 14:30 - 16:00 Ablation, Drilling and Micro-Cutting 1 16:30 - 18:00 Ablation, Drilling and Micro-Cutting 2	Micro Processing 08:30 - 10:00 Ablation, Drilling and Micro-Cutting 3 10:30 - 12:00 Ablation, Drilling and Micro-Cutting 4 14:00 - 15:30 Ablation, Drilling and Micro-Cutting 5 Additive Manufacturing 16:00 - 17:45 SLM-Metal 1	Additive Manufacturing 08:30 - 10:00 SLM-Metal 2 10:30 - 12:00 SLM-Metal 3 14:00 - 15:30 SLM-Metal 4 16:00 - 17:45 SLM-Metal 5	Additive Manufacturing 08:30 - 10:00 Laser Metal Deposition 1 10:30 - 12:00 Laser Metal Deposition 2 14:00 - 15:30 Laser Metal Deposition 3 16:00 - 17:45 Laser Metal Deposition 4

Room 4a ICM Ground Floor	JSII – Label-free Techniques for Molecular Identification 14:00 - 15:30 Raman spectroscopy I 16:00 - 17:30 Raman spectroscopy II	EE – Ultrafast Optical Science 11:15 - 12: 45 Ultrafast control by light EA – Quantum Optics and Ultracold Quantum Matter 14:15 - 15:45 Quantum effects 16:15 - 17:45 Coherent atom-light interaction	EA – Quantum Optics and Ultracold Quantum Matter 08:30 - 10:00 Quantum optomechanics CI – Optical Technologies for Communications and Data Storage 14:00 - 15:30 Phase and spectrum manipulation for photonic devices EA – Quantum Optics and Ultracold Quantum Matter 16:00 - 17:30 Long-range interactions	ED – Precision Metrology and Frequency Combs 08:30 - 10:00 Direct comb spectroscopy I 10:30 - 12:00 Direct comb spectroscopy II EH – Plasmonics and Metamaterials 14:00 - 15:30 Plasmonics and metamaterials with 2D-materials 16:00 - 17:30 Metasurfaces and metadevices	JSIII – Photonics for Renewable Energy and Sustainability 08:30 - 10:00 Light management for photovoltaics 10:30 - 12:00 Thermo-photonics, materials and energy efficiency EH – Plasmonics and Metamaterials 14:00 - 15:30 Nonlinear metasurfaces and plasmonics 16:00 - 17:30 Plasmonic enhancement of light-matter interactions
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Room 4b ICM Ground Floor	JSIV – Nanoscale Heat Processes 14:00 - 15:30 Nanoscale heat transfer background 16:00 - 17:30 Nanodevices controlled by heat manipulation 18:00 - 19:30 Nanoscale heat processes in plasmonic nanostructures	CK – Micro- and Nano-Photonics 11:15 - 12:45 Photonic integration 14:15 - 15:45 Microresonators 16:15 - 17:45 From nano to quantum sensing	EI – Two-dimensional and Novel Materials 08:30 - 10:00 Exciton/polariton physics in 2D materials EE – Ultrafast Optical Science 14:00 - 15:30 Interaction between ultrafast sources and matter 16:00 - 17:30 Ultrafast processes in fibers	EI – Two-dimensional and Novel Materials 08:30 - 10:00 Optical spectroscopy of 2D materials 10:30 - 12:00 Hot electrons and nonlinear dynamics in 2D materials EF – Nonlinear Phenomena, Solitons and Self-organization 14:00 - 15:30 Modulation instabilities and recurrence phenomena 16:00 - 17:30 Soliton molecules	EF – Nonlinear Phenomena, Solitons and Self-organization 08:30 - 10:00 Quantum and random systems 10:30 - 12:00 Solitons in microcavities EC – Topological States of Light 14:00 - 15:30 Lasing and driven dissipative topological systems 16:00 - 17:30 Nonlinear and quantum aspect in topological photonics
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Room 5 ICM Ground Floor	Diffuse Optical Spectroscopy and Imaging 08:30 - 10:00 Advances in Instrumentation and Technology I 10:30 - 12:00 Theory, Algorithms and Computational Tools I ECBO Hot Topics 14:00 - 15:30: Light for Life Diffuse Optical Spectroscopy and Imaging 16:00 - 18:00 Cerebral Hemodynamics and Neural Activity I 18:00 - 19:00 Joint Session ECBO - CLEO/Europe	Diffuse Optical Spectroscopy and Imaging 08:30 - 9:30 Computation Software and Analysis Tools 11:15 - 12:45 Theory, Algorithms and Computational Tools II 14:15 - 15:45 Cerebral Hemodynamics and Neural Activity II 16:15 - 17:45 Advances in Instrumentation and Technology II	Diffuse Optical Spectroscopy and Imaging 8:30 - 10:00 Novel Applications of Diffuse Optics 10:30 - 12:00 Phantoms and Performance Assessment 14:00 - 15:30 ECBO Plenary Session Diffuse Optical Spectroscopy and Imaging 16:00 - 17:45 Clinical Application of Diffuse Optics	JSVI – 50 years of integrated optics 08:30 - 10:00 50 Years of integrated optics II EB – Quantum Information, Communication and Sensing 10:30 - 12:00 Quantum state characterization and foundation 14:00 - 15:30 Colour centres and novel sources 16:00 - 17:30 Quantum networks
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Room 11 ICM 1st Floor	Translation of Lasers and Biophotonics Technologies and Procedures: Toward the Clinic 8:30 - 10:00 Pulsed Laser and Photothermal Applications I 10:30 - 12:00 Short Pulse and Photothermal Applications II 16:00 - 17:45 Optical Diagnostic Techniques	Translation of Lasers and Biophotonics Technologies and Procedures: Toward the Clinic 08:30 - 09:15 PDT Delivery and Monitoring I 11:15 - 12:45 PDT Delivery and Monitoring II 14:15 - 15:45 Photobiomodulation and Photoacoustic 16:15 - 17:45 Spectroscopy and other Biophotonics Technologies	Optical Coherence Imaging Techniques and Imaging in Scattering Media 08:30 - 10:00 Advances in Optical Coherence Imaging 10:30 - 12:00 Scattering and Wavefront Control	Optical Coherence Imaging Techniques and Imaging in Scattering Media 08:30 - 09:45 New Technology for Medical Instrumentation I 10:30 - 12:00 Advances of OCT for Eye Imaging 14:00 - 15:15 Clinical Applications of Optical Coherence Imaging 16:00 - 17:30 Advances in OCT Technology	Optical Coherence Imaging Techniques and Imaging in Scattering Media 08:30 - 09:45 New Technology for Medical Instrumentation II 10:30 - 12:00 Polarization, Phase and Signal Processing 14:00 - 15:30 Brain Imaging 16:00 - 17:30 Ophthalmic Applications
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Room 12a ICM 1st Floor	CLEO®/Europe-EQEC Short Course 1 14:00 - 17:30 Ultrashort pulse characterization / Selcuk Aktürk	Optics for Arts, Architecture, and Archaeology VII 08:30 - 10:00 3D Tomography: Applications 11:20 - 13:10 Light-Matter Interaction and Nonlinear Optics 14:10 - 15:50 Imaging and Spectroscopy for Material Analysis 16:15 - 17:55 Structural Analysis	Optics for Arts, Architecture, and Archaeology VII 08:10 - 10:00 Optical Coherence Tomography: Instruments and Methods 10:30 - 11:30 Advanced Image Processing 11:30 - 12:30 Poster Pitch Presentations 14:20 - 15:30 Remote Imaging and Spectroscopy 16:00 - 17:50 Applications to Cultural Heritage	Optics for Arts, Architecture, and Archaeology VII 08:20 - 10:00 3D Surface Analysis 11:30 - 12:50 Multimodal Imaging and Spectroscopy Modeling Aspects in Optical Metrology VII 13:40–15:30 Photometry and Radiometry 16:00–18:00 Optical Systems	Automated Visual Inspection and Machine Vision III 10:30 - 11:30 Image Acquisition 13:40 - 15:00 Inspection, Measurement, and Control
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Room 12b ICM 1st Floor	CLEO®/Europe-EQEC Short Course 2 14:00 - 17:30 High-power fiber lasers / Andy Clarkson	Modeling Aspects in Optical Metrology VII 14:00 - 15:50 Interferometry I 16:20 - 18:10 Optical Materials/Imaging and Microscopy	Modeling Aspects in Optical Metrology VII 08:30 - 10:00 3D and Shape Metrology 10:30 - 12:30 Scatterometry 13:30 - 15:40 Mueller Matrix, Ellipsometry and Polarimetry 16:10 - 17:50 Interferometry II	Multimodal Sensing and Artificial Intelligence: Technologies and Applications 08:10 - 10:00 Multimodal Sensing for Surveillance 16:00 - 18:00 Multiwave Light Technology	Multimodal Sensing and Artificial Intelligence: Technologies and Applications 08:10-10:00 Multimodal Sensing for Infrastructure Monitoring 10:30 - 12:10 Hyperspectral Imaging Applications 13:20 - 15:30 Machine Learning Applications 16:00 - 18:10 Multimodal Sensing Applications
Room 13a ICM 1st Floor	CA – Solid-state Lasers 10:30 - 12:00 Laser beam control 14:00 - 15:30 Laser facilities 16:00 - 17:30 Waveguide lasers 18:00 - 19:30 Visible and UV lasers	CA - Solid-state Lasers 11:15 - 12:45 Thin disk lasers 14:15 - 15:45 2 μm lasers 16:15 - 17:45 Novel laser concepts	CB – Semiconductor Lasers 08:30 - 10:00 Superluminescent diodes and semiconductor optical amplifiers 14:00 - 15:30 High-power semiconductor lasers 16:00 - 17:30 Long wavelength semiconductor lasers	CB – Semiconductor Lasers 08:30 - 10:00 Wavelength control of QCLs CA – Solid-state Lasers 10:30 - 12:00 Laser amplifier systems 14:00 - 15:30 Mid-infrared lasers 16:00 - 17:30 Nonlinear frequency conversion 19:00 - 20:30 Postdeadline Session 1	CB – Semiconductor Lasers 08:30 - 10:00 Short pulse generation from semiconductor lasers 10:30 - 12:00 Optical frequency combs in semiconductor lasers 14:00 - 15:30 Semiconductor laser dynamics 16:00 - 17:30 Vertical cavity semiconductor lasers
Room 13b ICM 1st Floor	CD – Applications of Nonlinear Optics 10:30 - 12:00 Solitons 14:00 - 15:30 Nonlinear spectroscopy 16:00 - 17:30 Tunable light sources 18:00 - 19:30 Nonlinear imaging	11:15 - 13:15 LiM Plenary Session and WLT ceremony CB – Semiconductor micro-lasers: 14:15 - 15:45 Semiconductor micro-lasers: Novel dynamics 16:15 - 17:45 Integrated semiconductor lasers and amplifiers	CA – Solid-state Lasers 08:30 - 10:00 Ytterbium doped laser materials CD – Applications of Nonlinear Optics 14:00 - 15:30 Nonlinear nano materials 16:00 - 17:30 Micro-resonators	CK – Micro- and Nano-Photonics 08:30 - 10:00 Plasmonics and antennas 10:30 - 12:00 Novel materials and their characterisation CD – Applications of Nonlinear Optics 14:00 - 15:30 Micro-comb-resonators 16:00 - 17:30 Spatio-temporal manipulation of light 19:00 - 20:30 Postdeadline Session 2	EC – Topological States of Light 08:30 - 10:00 Novel systems for topological photonics I 10:30 - 12:00 Novel systems for topological photonics II CD – Applications of Nonlinear Optics 14:00 - 15:30 Nonlinear application at extreme wavelengths 16:00 - 17:30 Quantum and information technologies
Room 14a ICM 1st Floor	CK – Micro- and Nano-Photonics 10:30 - 12:00 Light management 14:00 - 15:30 Light coupling 16:00 - 17:30 Active devices CB – Semiconductor Lasers 18:00 - 19:30 Semiconductor micro-lasers: Novel technology concepts	EH – Plasmonics and Metamaterials 11:15 - 12:45 Engineering nontrivial light fields 14:15 - 15:45 Metasurfaces-polarimetry, chirality and photon spin EI – Two-dimensional and Novel Materials 16:15 - 17:45 Optics of graphene and related 2D materials	CK – Micro- and Nano-Photonics 08:30 - 10:00 Metasurface EF – Nonlinear Phenomena, Solitons and Self-organization 14:00 - 15:30 Nonlinear nano-optics and plasmonics 16:00 - 17:30 Mode locking and spatio-temporal localization	EF – Nonlinear Phenomena, Solitons and Self-organization 08:30 - 10:00 Photon fluids and Hawking-like effect 10:30 - 12:00 Nonlinear integrated photonics EG – Light-matter Interactions at the Nanoscale 14:00 - 15:30 Engineering of complex electromagnetic fields 16:00 - 17:30 Ultrafast and strong field nano-optics	EG – Light-matter Interactions at the Nanoscale 08:30 - 10:00 Nanoscale imaging and spectroscopy 10:30 - 12:00 Nonlinear nano-optics 14:00 - 15:30 Emission control at the nanoscale 16:00 - 17:30 Coupling at the nanoscale
Room 14b, ICM 1st Floor	CM – Materials Processing with Lasers 10:30 - 12:00 Beam shaping for laser processing 14:00 - 15:30 Silicon structuring by ultrafast lasers 16:00 - 17:30 Advanced functionalization of materials 18:00 - 19:30 Femtosecond laser writing of integrated photonic devices	CM – Materials Processing with Lasers 11:15 - 12:45 Laser nanostructuring of transparent materials for advanced devices 14:15- 15:45 3D laser additive micromanufacturing 16:15 - 17:45 New trends on laser ablation	08:00 - 10:00 Imaging and Applied Optics Plenary Session CK – Micro- and Nano-Photonics 14:00 - 15:30 Novel nano and micro fabrication techniques 16:00 - 17:30 Frequency combs	CM – Materials Processing with Lasers 08:30 - 10:00 Microfluidics and novel applications of laser micromachining CH – Optical Sensing and Microscopy 10:30 - 12:00 Microscopy I EA – Quantum Optics and Ultracold Quantum Matter EB – Quantum Information, Communication and Sensing 14:00 - 15:30 Quantum memories I 16:00 - 17:30 Quantum memories II	CH – Optical Sensing and Microscopy 08:30 - 10:00 Microscopy II 10:30 - 12:00 Infrared gas sensing 14:00 - 15:30 Spectroscopic sensing 16:00 - 17:30 Time-resolved sensing

Room 14c ICM 1st Floor	EE – Ultrafast Optical Science 10:30 - 12:00 New principles of ultrafast spectroscopy 14:00 - 15:30 Ultrafast phenomena in 2D materials and on surfaces	Optical Measurement Systems for Industrial Inspection XI 08:30 - 10:00 Interferometry I 11:20 - 12:40 Digital Holography 13:45 - 15:45 Interferometry II 16:15 - 17:55 Speckle and Shearing Interferometry	Optical Measurement Systems for Industrial Inspection XI 08:30 - 10:00 Topography Sensors and Measuring Systems 10:30 - 12:00 Resolution Enhancement Techniques 14:20 - 15:20 High-speed Techniques 16:00 - 18:00 3D Microscopy	Optical Measurement Systems for Industrial Inspection XI 08:30 - 10:00 Structured Illumination Techniques I 11:30 - 12:50 Structured Illumination Techniques II 13:50 - 15:30 Light Scattering Techniques 16:00–18:10 Joint Session SPIE OM–EOS MOS: Measurement of Optical Components I: Asphere and Freeform Measurement	Optical Measurement Systems for Industrial Inspection XI 08:30 - 10:00 Measurement of Optical Components II 10:30 - 12:30 Hyperspectral Imaging and Spectroscopic Techniques 13:40 - 15:40 In-process and In-situ Measurements 16:00 - 18:00 Nondestructive Testing and Fault Detection
Room Osterseen ICM 2nd Floor	CLEO®/Europe-EQEC Short Course 5 14:00 - 17:30 Practical quantum optics / Gerd Leuchs	CL – Photonic Applications in Biology and Medicine 11:15 - 12:45 Clinical applications 14:15 - 15:45 Nano-optics, light field control and sensing 16:15 - 17:45 Novel lasers, instruments and technology	CL – Photonic Applications in Biology and Medicine 08:30 - 10:00 Chip-based methods and cellular sensing 14:00 - 15:30 Label-free imaging and sensing	EJ – Theoretical and Computational Photonics Modelling 10:30 - 12:00 Theoretical and computational photonics methods 14:00 - 15:30 Computational quantum optics, plasmonics and metamaterials 16:00 - 17:30 Application-driven computational photonics modeling	CD – Applications of Nonlinear Optics 08:30 - 10:00 Spectral broadening 10:30 - 12:00 Novel approaches in nonlinear optics EF – Nonlinear Phenomena, Solitons and Self-organization 14:00 - 15:30 Solitons and their applications 16:00 - 17:30 Frequency conversion and localized structures
Room 21 ICM 2nd Floor	JSV – Quantum Sensing and Applications 10:30-12:00 Atom interferometry and quantum optics 14:00 - 15:30 Magnetometry and biological imaging 16:00 - 17:30 Optomechanics and atomic clocks		Manufacturing, Tolerancing and Testing of Optical Systems (MOS) 08:30 - 10:00 MOS19-a 10:30 - 11:50 MOS19-b 14:00 - 15:30 MOS19-c 16:00 - 17:30 MOS19-d	Manufacturing, Tolerancing and Testing of Optical Systems (MOS) 08:30 - 10:00 MOS19-e 10:30 - 11:55 MOS19-f 14:00 - 15:15 MOS Plenary Session	
Room 22a ICM 2nd Floor	CLEO®/Europe-EQEC Short Course 3 14:00 - 17:30 Optical parametric oscillators / Majid Ebrahim-Zadeh	Optofluidics 08:30 - 09:30 On-Chip Imaging I 11:15 - 12:45 On-Chip Imaging II 14:15 - 15:00 Optofluidics Plenary Session Optofluidics 15:00 - 15:45 Emerging Topics I 16:15 - 17:45 Microsystems	Optofluidics 08:30 - 10:00 Manipulation 10:30 - 12:00 Emerging Topics II		
Room 22b ICM 2nd Floor	CLEO®/Europe-EQEC Short Course 4 14:00 - 17:30 Laser beam analysis, propagation, and spatial shaping techniques / James Leger	Macro Processing 14:30 - 16:00 System Technology and Process Control 1 16:30 - 18:00 System Technology and Process Control 2	Micro Processing 08:30 - 10:00 System Technology and Process Control 1 10:30 - 12:00 System Technology and Process Control 2 14:00 - 15:30 System Technology and Process Control, Laser Safety Macro Processing 16:00 - 17:45 Surface Treatment and Cladding	Macro Processing 08:30 - 10:00 Surface Treatment and Cladding, SLM Polymer 10:30 - 12:00 Thin Plate Welding and Plastics Micro Processing 14:00 - 15:30 Micro-Joining (Welding and Brazing) 1 16:00 - 17:45 Micro-Joining (Welding and Brazing) 2	Macro Processing 08:30 - 10:00 Cutting and CFRP-Processing 1 10:30 - 12:00 Cutting and CFRP-Processing 2 Micro Processing 14:00 - 15:30 Fundamentals and Process Simulation 16:00 - 17:45 Fundamentals and Process Simulation
Room 1 "Albert Einstein" Hall A1 Ground Floor	CH – Optical Sensing and Microscopy 10:30 - 12:00 Optical fibre sensors 14:00 - 15:30 LIDAR systems 16:00 - 17:30 Photoacoustic sensors 18:00 - 19:30 Integrated sensors I	CH – Optical Sensing and Microscopy 11:15 - 12:45 Integrated sensors II 14:15 - 15:45 Fibre bio- and medical sensors 16:15 - 17:45 Microstructured fibre sensors	CH – Optical Sensing and Microscopy 08:30 - 10:00 Nanostructured sensors ED – Precision Metrology and Frequency Combs 14:00 - 15:30 Frequency metrology and transfer 16:00 - 17:30 Precision spectroscopy	EA – Quantum Optics and Ultracold Quantum Matter 08:30 - 10:00 Integrated quantum photonics 10:30 - 12:00 Nanoclassical light ED – Precision Metrology and Frequency Combs 14:00 - 15:30 Frequency combs: Sources and characterization I 16:00 - 17:30 Frequency combs: Sources and characterization II	CC – Terahertz Sources and Applications 08:30 - 10:00 THz applications 10:30 - 12:00 High power THz pulse generation 14:00 - 15:30 CW THz systems and spectroscopy 16:00 - 17:30 High power THz sources and application

Room 2 "Emmy Noether" Hall A1 Ground Floor	CF – Ultrafast Optical Technologies 10:30 - 12:00 High-power oscillators 14:00 - 15:30 New developments for ultrafast oscillators 16:00 - 17:30 Fiber lasers 18:00 - 19:30 Solitons and self-compression	CF – Ultrafast Optical Technologies 11:15 - 12:45 Techniques for wavelength conversion of ultrashort pulses 14:15 - 15:45 Characterisation of ultrashort laser pulses 16:15-17:45 Ultrabroadband laser sources	CF – Ultrafast Optical Technologies 08:30 - 10:00 Generation and characterisation of ultraviolet pulses CG – High-Field Laser and Attosecond Science 14:00 - 15:30 Strong-field and high-power sources and interactions 16:00 - 17:30 Strong-field processes in atoms and molecules	CG – High-Field Laser and Attosecond Science 08:30 - 10:00 Twisted light fields 10:30 - 12:00 Attosecond dynamics in bulk solids 14:00 - 15:30 Ultrafast dynamics in molecules 16:00 - 17:30 Interferometry and imaging	CF – Ultrafast Optical Technologies 08:30 - 10:00 Generation of few-cycle pulses 10:30 - 12:00 Methods for CEP-stable sources 14:00 - 15:30 XUV generation and characterisation 16:00 - 17:30 New techniques for ultrafast spectroscopy and imaging
Room 3 "Theodore Maiman" Hall A1 Ground Floor	CLEO®/Europe-EQEC Short Course 6 14:00 - 17:30 Mid-infrared semiconductor lasers / Jérôme Faist	CE – Optical Materials, Fabrication and Characterisation 11:15 - 12:45 Novel light confinement waveguides technologies 14:15 - 15:45 Metamaterials and functional photonic bandgap systems 16:15 - 17:45 Advances in optical fibre configurations and materials	CE – Optical Materials, Fabrication and Characterisation 08:30 - 10:00 High performance bragg gratings and mirrors CC – Terahertz Sources and Applications 14:00 - 15:30 THz time-domain spectroscopy 16:00 - 17:30 THz QCL-broadband operation and modelling	CC – Terahertz Sources and Applications 08:30 - 10:00 THz QCL and THz imaging 10:30 - 12:00 THz quantum optics and spintronics CE – Optical Materials, Fabrication and Characterisation 14:00 - 15:15 Rare earth, polymers, ceramics, fibres and beyond 16:00 - 17:30 Advanced layered materials for photonics	CE – Optical Materials, Fabrication and Characterisation 08:30 - 10:00 Micro resonators and diffractive optics CG – High-Field Laser and Attosecond Science 10:30 - 12:00 Generation and applications of attosecond pulses 14:00 - 15:30 Harmonic generation and spectroscopy 16:00 - 17:15 Photoemission spectroscopy and sources
Room 4 "Emmett Leith" Hall A1 Ground Floor	CLEO®/Europe-EQEC Short Course 7 14:00 - 17:30 THz measurements and their applications / Daniel Mittleman	Computational Optical Sensing and Imaging 11:30 - 13:00 CM1A Phase Retrieval / Wavefront Sensing 14:00 - 15:45 CM2A Indirect / Non Line-of-Sight Imaging 16:15 - 18:00 CM3A Quantum Computational Imaging	Computational Optical Sensing and Imaging 10:30 - 12:30 CTu2A Compressed Sensing - State of the Art 14:00 - 15:30 CTu3A Learning based approaches to Computational Imaging 16:00 - 18:00 CTu4A Imaging through turbid and scattering media	Computational Optical Sensing and Imaging 08:30 - 10:00 CW1A Applications of Deep Learning to Computational Imaging 10:30 - 11:15 Poster Previews 11:15 - 12:30 Hot Topics Discussions 14:00 - 15:30 CW3A Advances in Ptychography and emerging applications 16:00 - 18:00 CW4A Advances in Computational Microscopy	Computational Optical Sensing and Imaging 08:30 - 10:00 CTh1A Computed Tomography 10:30 - 12:30 CTh2A Advances in Macroscopic 3D Sensing (including LiDAR) 14:00 - 15:30 CTh3A Computational Micro and Nano-Optics 16:00 - 18:00 CTh4A Circumventing Traditional Imaging Limits
Room 5 "Marie Curie" Hall A1 Ground Floor	CLEO®/Europe-EQEC Short Course 8 14:00 - 17:30 Atoms and molecules in tailored laser fields / Thomas Pfeifer	Imaging Systems and Applications 11:30 - 13:00 IM1B Neuromorphic Imaging 14:00 - 15:45 IM3B Deep Learning and AI 16:15 - 18:00 IM2B Telescopes and Superresolution	Imaging Systems and Applications 10:30 - 12:30 ITu2B 3D Image Acquisition and Display: Technology, Perception and Applications I 14:00 - 15:30 ITu3B Spectral Imaging 16:00 - 18:00 ITu4B Imaging (Diffractive and Single Pixel)	Imaging Systems and Applications 08:30 - 10:00 IW1B 3D Image Acquisition and Display: Technology, Perception and Applications II 14:00 - 15:30 IW3B Novel Imaging Computational Optical Sensing and Imaging 16:00 - 17:00 JW4B Compressed Sensing / Multi-aperture Imaging	Imaging Systems and Applications 08:30 - 10:00 ITh1B 3D Image Acquisition and Display: Technology, Perception and Applications III 10:30 - 12:30 ITh2B Optical Coherence Tomography 14:00 - 15:30 ITh3B Biophotonics 16:00 - 18:00 ITh4B Biophotonics
Room A11 "Gordon Gould" Hall A1 1st Floor	CLEO®/Europe-EQEC Short Course 9 14:00 - 17:30 Frequency combs principles and applications / Thomas Udem	Propagation Through and Characterization of Atmospheric and Oceanic Phenomena 11:30 - 13:00 PM1C Atmospheric Turbulence I 14:00 - 15:45 PM2C Atmospheric Turbulence Profiling 16:15 - 18:00 PM3C Atmospheric Turbulence II	Imaging Systems and Applications 10:30 - 12:30 ITu2C. Augmented Reality / Virtual Reality Propagation Through and Characterization of Atmospheric and Oceanic Phenomena 14:00 - 15:30 PTu3C Adaptive Optics & Wavefront Sensing I Computational Optical Sensing and Imaging 16:00 - 17:30 CTu4C Advances in Microscopy / Digital Holographic Microscopy	Imaging Systems and Applications 08:30 - 10:00 IW1C Industrial Imaging Propagation Through and Characterization of Atmospheric and Oceanic Phenomena 14:00 - 15:30 PW3C Adaptive Optics & Wavefront Sensing II 16:00 - 17:45 PW4C Wavefront Sensing & Optical Links	Imaging Systems and Applications 08:30 - 10:00 ITh1C Microscopy Computational Optical Sensing and Imaging 10:45-11:45 CTh2C Holography / Phase Retrieval Propagation Through and Characterization of Atmospheric and Oceanic Phenomena 14:00 - 15:30 PTh3C Turbulence Characterization II 16:00 - 17:45 PTh4C Underwater and Marine Environment

Room A12 "Max Born", 1st Floor, Hall A1	CLEO®/Europe-EQEC Short Course 10 14:00 - 17:30 Silicon photonics / Dries Van Thourhout	Mathematics in Imaging 11:30 - 13:00 MM1D Image Restoration 14:00 - 15:45 MM2D Multi-Dimensional Imaging 16:15 - 18:00 MM3D Super-Resolution	Propagation Through and Characterization of Atmospheric and Oceanic Phenomena 10:30 - 12:30 PTu2D Imaging Mathematics in Imaging 14:00 - 15:30 MTu3D New Methodological Tools 16:00 - 18:00 MTu4D Phase Retrieval	Mathematics in Imaging 08:30 - 10:00 MW1D Imaging System Analysis 14:00 - 15:30 MW3D Imaging in Complex Media 16:00 - 17:30 MW4D Tomography	Propagation Through and Characterization of Atmospheric and Oceanic Phenomena 08:30 - 10:00 PTh1D Turbulence Characterization I 10:30 - 12:30 PTh2D Beam Propagation
Room 6 "Charles Townes" Hall A1 Ground Floor	CI – Optical Technologies for Communications and Data Storage 10:30 - 12:00 Probabilistic shaping and NFT-based transmission 14:00 - 15:30 Advanced high capacity fiber systems 16:00 - 17:30 Components and systems for metro and short range networks 18:00 - 19:30 Integrated technologies for data networks	Preclinical and Clinical Optical Diagnostics 11:15 - 12:45 Novel Methods for Cell and Tissue Analysis 14:15 - 15:45 Tissue Characterization and Analysis 15:45 - 18:00 Novel Technologies in Optical Diagnostics II	Preclinical and Clinical Optical Diagnostics 08:30 - 10:00 Novel Technologies for In Vitro Diagnostics 10:30 - 12:00 Computational Analysis and Machine Learning 16:00 - 18:00 In Vivo Imaging and Spectroscopy	Advances in Microscopic Imaging 08:30 - 10:05 Super-Resolution Imaging 10:35 - 12:15 Neurophotonics 14:00 - 15:30 Multiphoton Microscopy 16:00 - 17:45 Excitation Shaping and Advanced Methods	Advances in Microscopic Imaging 08:00 - 9:30 Quantitative Phase Imaging: Methods 09:30 - 11:00 Quantitative Phase Imaging: Basic Science 11:00 - 13:00 Quantitative Phase Imaging: Computation 14:00 - 14:45 Quantitative Phase Imaging: Clinical Applications 14:45 - 15:45 Polarization-Resolved Imaging 16:00 - 17:15 Advanced Applications
Room 7 "Dennis Gábor" Hall A1 Ground Floor	CE – Optical Materials, Fabrication and Characterisation 10:30 - 12:30 Opportunities for advanced nanostructured and non-linear optical materials 14:00 - 15:30 Infrared material fibres glasses and applications 16:00 - 17:30 Neuro-inspired computing and random photonics 18:00 - 19:30 Multiferroics and non-linear optics and photonics	Opto-Acoustic Methods and Applications in Biophotonics 08:30 - 09:15 Clinical Applications I 11:15 - 12:45 Clinical Applications II 14:15 - 15:45 Algorithms and Quantitative Imaging 16:15 - 17:45 Novel Detectors and Systems I	Opto-Acoustic Methods and Applications in Biophotonics 08:30 - 10:00 Novel Detectors and Systems II 10:30 - 12:00 Advances in Optoacoustic Imaging 16:00 - 17:30 Microscopy	Novel Biophotonics Techniques and Applications 08:30 - 10:00 Physiology and Flow 10:30 - 12:00 Multimodal and Clinical Imaging 14:00 - 15:30 Cell Physiology and Imaging I 16:00 - 17:15 Cell Physiology and Imaging II	Novel Biophotonics Techniques and Applications 08:30 - 10:00 Sensing, Diagnostics and Therapy I 10:30 - 11:45 Sensing, Diagnostics and Therapy II
Room 8 "Gustav Hertz" Hall A1 Ground Floor	JSI – Neuromorphic Photonics 14:00 - 15:30 Photonic platforms for reservoir computing 16:00 - 17:30 Neuromorphic processing for optical communications 18:00 - 19:30 Neuromorphic photonic platforms	Optical Methods for Inspection, Characterization, and Imaging of Biomaterials IV 08:30 - 10:00 Advanced Microscopy Modalities 11:20 - 12:50 Advanced Diagnostics by Speckle Techniques 13:50 - 15:50 Digital Holography 16:15 - 17:35 Learning Approaches in Microscopy I	Optical Methods for Inspection, Characterization, and Imaging of Biomaterials IV 08:20 - 10:00 Understanding Biomechanics by Optical Methods I 10:30 - 12:00 Understanding Biomechanics by Optical Methods II 14:00 - 15:30 Phase Contrast and 3D Imaging 16:00 - 17:30 Learning Approaches in Microscopy II	Optical Methods for Inspection, Characterization, and Imaging of Biomaterials IV 08:30 - 10:00 Advanced Biosensors 11:30 - 12:40 Thermal Imaging for Medicine and Biotechnology 13:40 - 15:30 Joint Session: Holography Technology 16:00 - 18:00 Phase Contrast Tomography: New Trends	
Room 9 "Arthur Schawlow" Hall A1 Ground Floor	Digital Optical Technologies Courses 08:30 - 12:30 Optical Technologies and Architectures for Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) Head-Mounted Displays (HMDs) / Bernard Kress 13:30 - 17:30 Design, modeling and fabrication techniques for micro-optics: applications to display, imaging, sensing and metrology / Bernard Kress	13:00 - 14:00 Digital Optical Technologies Plenary Session Digital Optical Technologies 14:00 - 15:40 3D Display Techniques and Technologies 16:10 - 17:50 Switchable, Tunable and Reconfigurable Optics	Digital Optical Technologies 08:00 - 10:00 Novel Optics for Augmented, Mixed and Virtual Reality Systems (AR, MR, VR) 10:30 - 12:30 Waveguide Optics for AR/MR Systems 13:30 - 15:30 Digital Optics for Image Formation 16:00 - 17:40 Increasing Visual Comfort in 3D Displays	Digital Optical Technologies 08:40 - 10:00 Digital Optics for Sensing 10:30 - 11:50 Computation Display and Imaging I 13:50 - 15:30 Computation Display and Imaging II 16:00 - 17:40 Computation Display and Imaging III	
Room 10 "Wilhelm Röntgen" Hall A1 Ground Floor	Digital Optical Technologies Courses 13.30 - 17:30 An Introduction to Deep Learning / Maarten Kruithof	Digital Optical Technologies 10:00 - 17:00 AR VR MR Headset Demos	Digital Optical Technologies 09:00 - 17:00 AR VR MR Headset Demos	Digital Optical Technologies 09:00 - 17:00 AR VR MR Headset Demos	
Room B11 "Thomas Edison 1" Hall B1 1st Floor	16:00 - 17:30 YM - Career event: Options after your PhD				

Room B12 "Thomas Edison 2" Hall B1 1st Floor	CLEO®/Europe-EQEC Short Course 11 14:00 - 17:30 Optics in graphene and other 2D materials / Coskun Kocabas
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Room B13 "Thomas Edison 3" Hall B1 1st Floor	CLEO®/Europe-EQEC Short Course 12 14:00 - 17:30 Finite element modelling methods for photonics and optics / Arti Agrawal
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Hall B0, ICM Ground Floor	Poster Sessions	Poster Sessions	Poster Sessions	Poster Sessions	Poster Sessions
	13:00 - 14:00 CLEO®/Europe-EQEC	13:15 - 14:15 CLEO®/Europe-EQEC	13:00 - 14:00 CLEO®/Europe-EQEC	13:00 - 14:00 CLEO®/Europe-EQEC	13:00 - 14:00 CLEO®/Europe-EQEC
		12:45 14:15 European Conferences on Biomedical Optics (ECBO)	12:00 14:00 European Conferences on Biomedical Optics (ECBO)	12:45 14:00 European Conferences on Biomedical Optics (ECBO)	12:00 14:00 European Conferences on Biomedical Optics (ECBO)
				12:30 - 14:00 Imaging and Applied Optics	
			12:00 - 14:00 Manufacturing, Tolerancing and Testing of Optical Systems / Optofluidics		
			12:00 - 14:20 Optical Metrology	11:30 - 12:40 Optical Metrology	11:30 - 12:30 Optical Metrology
				12:50 - 13:50 Digital Optical Technologies	