Jena LIGHT – Photonics meets AI

	Tuesday, 03.09.2024	Wednesday, 04.09.2024	Thursday, 05.09.2024	Friday, 06.09.2024
08:30			**Demetri Psaltis (EPFL) KEYNOTE, ONLINE** Nonlinear Computation with Linear Optics	**Yaron Bromberg (Jerusalem) KEYNOTE** Quantum Communication and Computation with High-Dimensional Entangled Photons
09:00		**Timo Mappes (D.O.M. & FSU Jena)** Science Heritage Experience on Optics in Jena: Past - Present - Future We will take you on a walk through Jena's more than 100 years of optics history, from the early days of the founding fathers Abbe, Zeiss and Schott to the future in the new Zeiss campus.		
09:30			**Clara Wanjura (MPL Erlangen)** Fully Nonlinear Neuromorphic Computing with Linear Wave Scattering	**Mauro Paternostro (Palermo & Belfast)** Quantum Enhanced Machine Learning: From Gate Synthesis to Photonic Reservoir Computing
10:00				
10:30			Coffee break & posters	Coffee break & posters
11:00	Registration & welcome coffee		**Joachim Giesen & Alexander Breuer (Uni Jena)** Einsum - A Formal Language for Tensor Expressions	**Elena Goi (USST Shanghai) ONLINE** Hybrid Nanoprinted Neural Networks
11:30		**Welcome Address** by VP Research FSU (at 11:45)		
12:00	**Visit of photonics research labs** Fraunhofer Institute for Applied Optics and Precision Engineering IOF (Albert-Einstein-Strasse 7, 07745 Jena)	**Sina Saravi (University Jena)** AI Photonics - Merging Disciplines	**Carlo Holly (Aachen)** The potential of AI in Photonics - From Advanced Beam Shaping to Self-Learning Laser Processes	**Peter Bienstman (Ghent)** Optical Computing with Silicon Photonic Reservoirs
12:30				
13:00		Lunch (Casino Beutenberg)	Lunch (Casino Beutenberg)	Lunch (Casino Beutenberg)
13:30	Lunch (Casino Beutenberg)			
14:00	**Conference Opening** (at 14:15)	**Wolfram Pernice (Heidelberg)** Photonic computing with incoherent light	**Alexander Heinecke (Intel)** From Tensor Processing Primitive towards Tensor Compilers using upstream MLIR	**Birgit Stiller (MPL Erlangen)** Photonic Computation Enabled by Sound Waves
14:30	**Carsten Rockstuhl (KIT)** Machine Learning Enhanced Design of Meta-Atoms and Metasurfaces			
15:00		**Martin Gärttner (University Jena)** Machine-Learning for Quantum Many-Body Physics	**Mario Chemnitz (Leibniz IPHT Jena)** Neuromorphic Computing with Nonlinear Dynamics in Single-mode Fibers	**Janik Wolters (TU Berlin & DLR)** Information Processing with Photons and Atoms
15:30	**Bhavin Shastri (Queen's CA) ONLINE** Neuromorphic Photonic Computing: Applications, Classical to Quantum			
16:00		Coffee break & posters	Coffee break	Farewell coffee & goodbye
16:30	Coffee break	**Tatsuhiro Onodera (Cornell) ONLINE** Deep Physical Neural Networks: A Case Study with a 2D Programmable Photonic Chip	**Visit of photonics research labs** Leibniz Institute of Photonic Technology IPHT (Albert-Einstein-Strasse 9, 07745 Jena)	
17:00	**Humeyra Caglayan (Tampere)** Imaging Applications through Learning-Enhanced Metasurface Optics			
17:30		**Aydogan Ozcan (UCLA) KEYNOTE, ONLINE** Programming Light Diffraction for Informa-tion Processing and Computational Imaging		
18:00	**Dragomir Neshev (ANU Canberra)** Analog Image Processing with Linear and Nonlinear Flat Optics			
18:30			**Pizza, Wine & Posters** We will continue our discussions at the posters.	
19:00	**BBQ, Beer & Posters** We will enjoy a typical Thuringian barbeque while having a first look at the posters.			
19:30		**Conference Dinner & Plants** Botanical Garden of University Jena (Fürstengraben 26, 07743 Jena)		
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22:00				