



QP-TECH.EDU

Experimental Quantum Technologies

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*Hands-on Training – April 2024*

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16-17 April 2024

Abbe Center of Photonics, Albert-  
Einstein-Str. 6, 07745 Jena

Contact Person:  
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Schedule	
<b>Day 1: Entanglement and Superposition</b>	
10:00	Reception at the ACP entrance
10:15 – 11:00	Overview of Quantum Science and Technology
11:00 – 13:00	<p><b>Lab: Single Photon experiments</b></p> <ul style="list-style-type: none"> <li>• Particle Nature of Photons</li> <li>• Quantum Random Number Generation</li> <li>• Single Photon Michelson Interferometer</li> <li>• Quantum Eraser</li> </ul>
13:00 – 13:45	Lunch
13:45 – 15:45	<p><b>Lab: Photon-pair experiments</b></p> <ul style="list-style-type: none"> <li>• Hong-Ou-Mandel 2-Photon Interference</li> <li>• Entanglement characteristics</li> </ul>
15:45 – 16:00	Coffee break
16:00 – 18:00	Quantum Cryptography

Day 2: Quantum Applications	
08:30 – 10:30	<b>Quantum Communication and Cryptography</b> by Fraunhofer Institute for Applied Optics and Precision Engineering (IOF) Jena
10:30 – 10:45	Coffee break
10:45 – 13:00	<p><b>Lab: Quantum Sensing</b> using Diamond Magnetometer</p> <ul style="list-style-type: none"> <li>• NV Center Fluorescence</li> <li>• Optically Detected Magnetic Resonance (ODMR)</li> <li>• Spin Relaxation Time</li> <li>• Magnetic Field Sensing</li> </ul>
13:00 – 13:45	Lunch
13:45 – 15:45	<p><b>Lab tours: Quantum Imaging</b> Extended hands-on lab sessions &amp; discussions</p>
15:45 – 16:00	Closing session