



Quantum Design

LATIN AMERICA

Raising The Science

Materials Science

Spectroscopy

Cryogenics

Optics

Nanoscience

Sample Synthesis

Biotechnology & Chemistry

Industries

Microscopy

Quantum Technology

📍 Condomínio Empresarial Praça Capital
Av. João Scarparo Netto, 170
Milão 117 – Campinas/SP – Brazil
13.080-655

☎ +55 19 3212.0230

📞 +55 19 992.476.554

🌐 qd-latam.com





Qtools started from the idea to provide 'tools' for 'quantum physics'. The company was born from quantum physics lab at Ludwig-Maximilians-University in Munich, in 2005.

Beginning with the development of receiver modules for quantum cryptography, our expertise increases with every challenge that we take on and the ensuing innovation that we uncover. That is how the demonstrator for quantum entanglement quED was born and later transformed into a complete setup for student laboratories, courses and lectures. A similar application suitable for pupils and high-school students and designed primarily for education purposes is the Quantenkoffer. This initial device already included a time-to-digital converter to correlate two APD signals, so it did not take long until the quTAU came to life, measuring timestamps with a resolution of <100ps and calculating coincidences and correlations. This has finally evolved into our newest baby, quTAG, which is faster and more precise.

Key features:

- Study of quantum entanglement
- Violation of Bell's inequalities
- Quick entanglement verification
- Multiple Add-ons
- Timing jitter < 2.3 ps RMS
- Up to 32 channels
- Digital resolution 1 ps
- Quantum Cryptography
- Hong-Ou-Mandel 2-Photon Interference
- Hong-Ou-Mandel Interference + Hanbury Brown & Twiss
- Franson Interference

Most common applications:

- Time-Correlated Single Photon Counting (TCSPC)
- Time Resolved Fluorescence
- Quantum Optics/Information/Communication
- Fluorescence/Phosphorescence Lifetime Measurements / Imaging (FLT / FLIM)
- Fluorescence (Lifetime) Correlation Spectroscopy (FCS / FLCS)
- Stimulated Emission Depletion Microscopy (STED)
- Foerster Resonance Energy Transfer (FRET)
- Single Photon Emitter Characterisation
- LIDAR
- DNA sequencing
- Single Photon Experiments, with and without interference

BIG AREAS

Industries | Materials Science

Optics | Spectroscopy

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quTOOLS

