

## TOPTICA celebrates World Quantum Day

Serving quantum technology for 25 years



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**TOPTICA celebrates World Quantum Day on April 14 to recognize the importance of quantum technology. The company has been serving this technology for 25 years and has become a world leader in laser systems for quantum research and applications. World Quantum Day on April 14<sup>th</sup> is an initiative of quantum scientists from more than 65 countries to promote public understanding of quantum science and technology worldwide.**

TOPTICA is one of the key "toolmakers" in this field. Over the past 25 years, the company has grown from a two-man technology start-up to a globally recognized specialist in research lasers, with annual growth rates of around 15%. Today, after 25 years, nearly 500 employees worldwide generate sales of 120 million euros.



*Dr. Wilhelm Kaenders, Founder  
and member of the board of  
TOPTICA*

"The market for our cutting-edge research products is going to come, we just have to wait and be ready when it does!" was what the founders of TOPTICA said more than 25 years ago.

In the meantime, we know that the possibilities of quantum technologies are so great that they will have far-reaching effects on the economy and society - and are also of great security relevance. The international race to implement these technologies on an industrial scale has already begun. Governments, research institutions and companies around the world are pushing the field of quantum technologies forward with great

energy and considerable financial resources.

In 1995, the idea was born to industrialize the tunable grating stabilized diode laser from the research laboratory - the foundation for what would become TOPTICA. These lasers have since become the basic tool for effective manipulation of ultracold atoms in quantum laboratories around the world; the first step on the road to commercialization of quantum technologies based on atoms and ions.

The project was quickly implemented by a small team, scientifically driven by Wilhelm Kaenders, with the founding help of Prof. Haensch, Prof. Hemmerich and Prof. Zimmermann. The idea and its implementation were so successful that more than 10,000 tunable diode lasers have been built and sold to date.

Coming from the scientific quantum technology environment, TOPTICA has not only quickly conquered this market, but has also made the transition to becoming a reliable and highly valued OEM supplier. "We still share the language, the application know-how and the passion with the scientists, but we also understand and meet the specific requirements of the industry," emphasizes Dr. Wilhelm Kaenders, founder and member of the board as CTO. "We can also reliably manufacture products in series sizes of 10,000 units per year."

### **Involvement in major European quantum projects**

In the last 25 years, many contributors have joined the field worldwide on the path to the quantum technology revolution. The field has subsequently been awarded 4 Nobel Prizes in Physics and has attracted interest as a new technological platform outside the laboratory. With the publication of the Quantum Manifesto in 2016, a turnaround in the field was also started in political Europe.

For the European Union, the Quantum Flagship Program, launched as a spearhead, is a good example of focusing on a common goal, supported by the financial commitment of 1 billion euros over 10 years. TOPTICA has made important initial contributions here, as the only company in Europe, in all four technology pillars (Communication, Computing Simulation, Metrology and Sensing) and continues to be a key partner in the implementation of quantum technology in emerging application markets.

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### **World Quantum Day 2023 – Why April 14?**

World Quantum Day is celebrated on April 14 and refers to 4.14, the rounded first digits of Planck's constant:  $4.135667696 \times 10^{-15} \text{ eV.s} = 0.000\ 000\ 000\ 000\ 004\ 135667696$  electron volt-second, a product of energy and time that is the fundamental constant of quantum physics.

World Quantum Day was officially launched in 2022 with more than 200 events on 5 continents, in more than 44 countries, 193 cities and in more than 17 different languages.

[worldquantumday.org](https://worldquantumday.org)

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