

Quantum randomness from NV center and Quantum computing based on photonic platform

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Randomness is a very important resource for cryptography, algorithms, and scientific simulations. Since all classical processes are intrinsically deterministic, we must build quantum random number generators which utilize quantum processes to generate true randomness. In the first part of this talk, I will talk about the work I've done in my PhD study: building quantum random number generators with NV-centers.

By using the principles of quantum mechanics, quantum computers have the potential to solve complex problems that are currently beyond the reach of classical computers. From cryptography to drug discovery, the implications of this technology are vast and transformative. There are several quantum computing platforms, in Q.ANT, we focus on the photonic platform, which has several advantages over other platforms such as easy scalability and room temperature operation. In the second part of this talk, I will briefly talk about my work at Q.ANT GmbH regarding photonic quantum computing.