Press Release:

Securing local and global connectivity,

Abu Dhabi University Professor Earns U.S. Patent for Quantum Teleportation Networking Technology

UAE, Abu Dhabi, 20 January 2025: In a significant milestone for research and innovation at Abu Dhabi University (ADU), Professor Montasir Qasymeh, Associate Provost for Research, Innovation and Academic Development and Professor of Electrical Engineering at ADU, has been awarded his 16th U.S. patent for groundbreaking advancements in quantum teleportation technology.

The patent, titled 'Quantum Teleportation Network Using a System of Electrically Enabled Graphene Waveguides,' describes a cutting-edge solution for creating secure and unhackable local area networks (LANs) that seamlessly integrate with global infrastructure and emerging technologies like blockchain. By leveraging graphene-based materials and quantum teleportation principles, the technology facilitates efficient microwave signal transmission through optical fibers, minimizing energy loss and enhancing scalability. Its advanced framework effectively addresses cybersecurity challenges in today's interconnected world.

Professor Montasir Qasymeh, Associate Provost for Research, Innovation and Academic Development at ADU, said: "This milestone reflects Abu Dhabi University's (ADU) commitment to fostering a research-driven ecosystem that enables faculty and researchers to develop transformative solutions, aligning with the UAE's visionary goals for innovation and global leadership in advanced technologies. The 'Quantum Teleportation Network' technology addresses two fundamental challenges – the need for secure, tamper-proof local communication networks and their integration into global infrastructures. By harnessing the power of graphene-enabled quantum teleportation, we are laying the foundation of a new era in data security while establishing a scalable, adaptable and future-ready global connectivity framework."

The implications of this patent extend far beyond creating secure LANs, leveraging the properties of graphene with advanced quantum technology. This innovation holds transformative potential across several sectors, including finance, healthcare, defense and government and global IoT networks. By ensuring the security of financial transactions, safeguarding sensitive medical data, protecting government communications for critical operations and enhancing IoT networks, the technology reinforces its pivotal role in shaping a secure connection globally.

Prof. Montasir continues to be a key figure in the quantum field, aligning with ADU's strategic goals to drive innovation. Last year, he was granted a patent focused on redefining the landscape of quantum communication, by improving the efficiency and reliability of quantum computing. This technology contributes to building a knowledge-based economy, fostering economic diversification and developing a skilled workforce.

As one of the region's leading academic institutions, ADU remains at the forefront of technological progress, fostering impactful discoveries that contribute to the UAE's strategic goals and vision for the future.

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