Title: Quantum Computing in Chemistry: Simulating Molecular Structures

Abstract: This paper examines how quantum computing enhances simulations of molecular structures for chemical research.

1. Introduction Quantum computing offers unprecedented power for simulating complex systems.
2. Quantum Simulations in Chemistry Algorithms like the Variational Quantum Eigensolver (VQE) allow precise modeling of molecular interactions, aiding drug discovery.
3. Applications Useful in material science and pharmaceuticals, but not directly tied to security systems.
4. Conclusion Quantum computing is revolutionizing chemistry research.

References: - McArdle, S. (2020). Quantum computational chemistry.