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(54) Title of the invention : RESONANT CRYPTOGRAPHY DEVICE AND METHOD

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(57) Abstract :
A resonant cryptography system and method utilize a resonant element exhibiting resonant behavior, vibrating at its natural frequency upon excitation by an external force of the same frequency. Encryption and decryption keys are generated based on the resonant properties of the element, which include frequency, amplitude, phase, and damping. Plaintext data is converted into a resonant form by mapping it onto the resonant properties. Enhanced security measures are achieved through dynamic modulation of the resonant properties, introducing a time-varying component during the encryption process. Further security layers incorporate multi-factor authentication, including biometric data or cryptographic tokens, and an adaptive encryption mechanism tailors the encryption scheme to the specific data characteristics. The system and method are designed to resist attacks from quantum computers, leveraging the unique resonant properties as a foundational encryption element.

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