

# Quantum Communication Scheme for Blind Signature with Arbitrary Two-Particle Entangled System

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**Abstract**—A quantum communication scheme for blind signature is proposed based on two-particle entangled quantum system to create a novel systemetrical quantum cryptosystem. All the messages are encrypted by the private key of the sender Alice during the communication and the authenticity verification of signatures and an arbitrator's batch efficient proxy signature is applied. It demonstrates that a large number of blind signatures can be derived with the characteristics: impossibility of forgery, impossibility of disavowal by the signatory and impossibility of denial by the receiver. The security of our scheme depends on the two-particle entangled system which cannot be deterministically intercepted. column.

**Keyword**—Quantum communication, Blind signature, Proxy signature, Quantum signature, Quantum cryptography



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