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## Implementation and security analysis of fiber-based B92 QKD protocol

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### Abstract content <br> &nbsp; (Max 300 words)

Quantum Key Distribution (QKD) is an encryption scheme which uses two concepts of quantum mechanics, namely No-cloning Theorem and Uncertainty Principle, to allow a secure exchange of a cryptographic key between two communicating parties; Alice (sender) and Bob (receiver) in such a way that the presence of an eavesdropper (Eve) could be detected.

In this paper, we report our work on the implementation of the B92 QKD protocol on id3100 Clavis2 'plug-and-play' cryptosystem. Traditionally, this cryptosystem only supports two four-state QKD protocols, namely BB84 and SARG04 protocols. However, we show in this work that it is possible to implement a two-state protocol (B92) in such a system, by changing the number of encoded state. Additionally, we provide a security analysis of our approach, in order to ascertain its feasibility.

### Apply to be<br> considered for a student <br> &nbsp; award (Yes / No)?

Yes

### Level for award<br>&nbsp;(Hons, MSc, <br> &nbsp; PhD)?

PhD

### Main supervisor (name and email)<br>and his / her institution

Francesco Petruccione (Petruccione@ukzn.ac.za),  
University of KwaZulu-Natal

### Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

No

**Primary author:** Mr SENEKANE, Makhamisa (Quantum Research Group, School of Chemistry and Physics, University of KwaZulu-Natal, Private Bag X54001, Durban 4000, South Africa)

**Co-authors:** Dr MIRZA, Abdul (University of KwaZulu-Natal); Prof. PETRUCCIONE, Francesco (University of KwaZulu-Natal); Mr MAFU, Mhlambululi (University of KwaZulu-Natal)

**Presenter:** Mr SENEKANE, Makhamisa (Quantum Research Group, School of Chemistry and Physics, University of KwaZulu-Natal, Private Bag X54001, Durban 4000, South Africa)

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