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The Dark Exciton in a Quantum Dot- A Novel Bright Qubit with Very Long Coherence Time

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- **OCIS Codes:**
- [\(270.0270\)](#) Quantum optics : Quantum optics
- [\(300.0300\)](#) Spectroscopy : Spectroscopy
- [\(300.6470\)](#) Spectroscopy : Spectroscopy, semiconductors
- [\(270.5585\)](#) Quantum optics : Quantum information and processing

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<http://www.opticsinfobase.org/abstract.cfm?URI=QELS-2010-QPDA9>

- [Abstract](#)
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Abstract


We demonstrate for the first time that the quantum dot confined dark exciton is a natural, coherent and long-lived qubit. We optically “write” its spin state and successfully “read” its subsequent coherent evolution.

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