

Title (en)
ELECTRONIC STRUCTURAL COMPONENT FOR LOGICALLY CONNECTING QUBITS

Title (de)
ELEKTRONISCHES STRUKTUR-BAUELEMENT FÜR LOGISCHE VERSCHALTUNGEN VON QUBITS

Title (fr)
COMPOSANT ÉLECTRONIQUE À STRUCTURE POUR INTERCONNEXIONS DE QUBITS

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Application
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Abstract (en)
[origin: WO2021052539A1] The invention relates to an electronic component (10) which is formed by a semiconductor component or a semiconductor-like structure with gate electrode arrangements (16, 18, 20) for the transport of a quantum dot (52). The electronic component (10) contains a substrate (12) comprising a two-dimensional electron gas or electron hole gas. Electrical contacts connect the gate electrode arrangements (16, 18, 20) to voltage sources. A first gate electrode arrangement (16) having gate electrodes (22, 24) is provided on a surface (14) of the electronic component in order to create a potential well (50) in the substrate (12). The gate electrode arrangement (16) has parallel electrode fingers (32, 34), said electrode fingers (32, 34) being alternately connected together at intervals which causes almost continuous transport of the potential well (50) through the substrate (12), a quantum dot (52) being translated together with this potential well (50) in one direction.

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