

Title (en)  
QUBIT ELEMENT

Title (de)  
QUBIT-ELEMENT

Title (fr)  
ÉLÉMENT À BITS QUANTIQUES

Publication  
**EP 4356431 A1 20240424 (DE)**

Application  
**EP 21733935 A 20210614**

Priority  
EP 2021065942 W 20210614

Abstract (en)  
[origin: WO2022262933A1] The invention relates to a qubit element (1) comprising: a quantum well structure (2), within which a quantum well (3) is formed along a first direction (x); an electrode assembly (4) which is arranged spaced apart from the quantum well structure (2) in the first direction (x) and which is designed to reduce a movement of a charge carrier in the quantum well (3) in and against a second direction (y) and in and against a third direction (z), in order to form a quantum dot (5), wherein the first direction (x), the second direction (y) and the third direction (z) are each perpendicular to one another in pairs; and a back gate (14) which is arranged spaced apart from the quantum well structure (2) against the first direction (x).

IPC 8 full level  
**H01L 29/76** (2006.01); **B82Y 10/00** (2011.01); **B82Y 40/00** (2011.01); **H01L 21/334** (2006.01); **H01L 29/12** (2006.01); **H01L 29/40** (2006.01); **H01L 29/423** (2006.01)

CPC (source: EP)  
**H01L 29/122** (2013.01); **H01L 29/401** (2013.01); **H01L 29/423** (2013.01); **H01L 29/66977** (2013.01); **H01L 29/7613** (2013.01); **B82Y 10/00** (2013.01); **B82Y 40/00** (2013.01)

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**WO 2022262933 A1 20221222**; CN 117480615 A 20240130; EP 4356431 A1 20240424

DOCDB simple family (application)  
**EP 2021065942 W 20210614**; CN 202180099383 A 20210614; EP 21733935 A 20210614