

Title (en)
NANOTUBE ELECTRO-OPTICAL COMPONENT, OPTRONIC OR OPTICAL LINK-BASED HYBRID INTEGRATED CIRCUIT INTEGRATING THIS COMPONENT, AND METHOD OF FABRICATION

Title (de)
ELEKTROOPTISCHE NANORÖHRCHENKOMPONENTE, AUF OPTRONISCHER ODER OPTISCHER VERBINDUNG BASIERENDE INTEGRIERTE HYBRIDSCHALTUNG MIT DIESER KOMPONENTE UND HERSTELLUNGSVERFAHREN

Title (fr)
COMPOSANT ÉLECTRO-OPTIQUE À NANOTUBES, CIRCUIT INTÉGRÉ HYBRIDE OPTRONIQUE OU À LIEN OPTIQUE INTÉGRANT CE COMPOSANT, ET PROCÉDÉ DE FABRICATION

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Application
EP 11735496 A 20110615

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Abstract (en)
[origin: WO2011157948A1] The present invention relates to a photonic component comprising at least one linear optical waveguide, of which a so-called active portion is surrounded over all or part of its periphery by a grouping of one or more essentially semiconducting nanotubes. These nanotubes interact with their exterior environment in an active zone extending on either side of the optical waveguide, so as to thus induce an optical coupling between an electrical or optical signal applied to the nanotubes and on the other hand an optical signal in the active portion of the waveguide. Such a component can carry out in particular bipolar electro-optical functions as light source, or modulator or detector, inside the optical guide, for example with an electro-optical coupling between on the one hand an electrical signal applied between the electrodes, and on the other hand an optical signal emitted or modified in the active portion of the optical waveguide towards the remainder of said optical guide. It furthermore relates to an electronic and optical hybrid integrated circuit whose optical and electronic circuits interact through at least one such electro-optical component; as well as to a method of fabrication of such a component or integrated circuit.

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Citation (search report)
See references of WO 2011157948A1

Citation (examination)
TAKENOBU TAISHI ET AL: "Optical evidence of Stark effect in single-walled carbon nanotube transistors", APPLIED PHYSICS LETTERS, A I P PUBLISHING LLC, US, vol. 89, no. 26, 29 December 2006 (2006-12-29), pages 263510 - 263510, XP012087930, ISSN: 0003-6951, DOI: 10.1063/1.2425009

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