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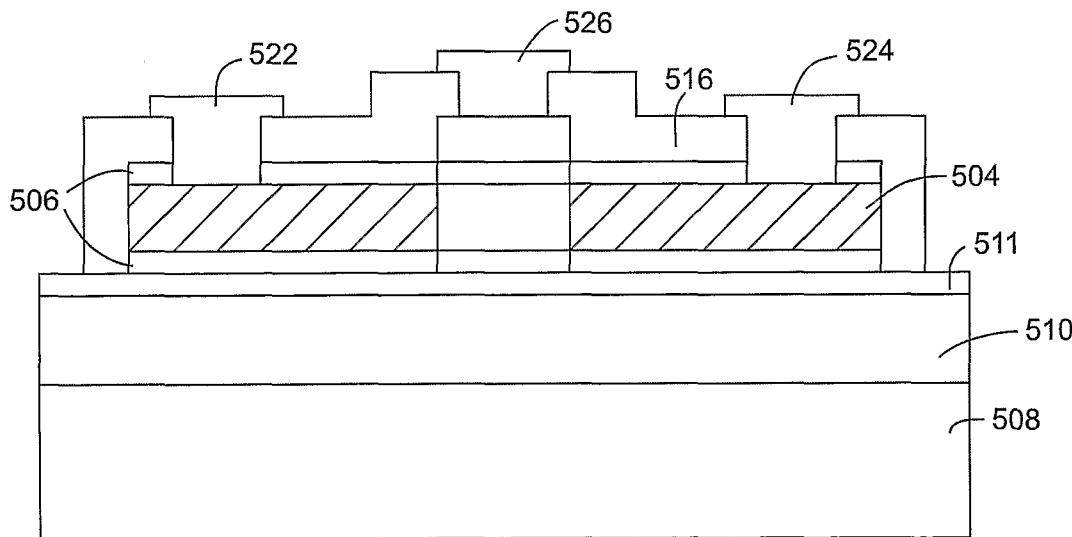
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) **Title:** CONTACT DOPING AND ANNEALING SYSTEMS AND PROCESSES FOR NANOWIRE THIN FILMS



(57) **Abstract:** Embodiments of the present invention are provided for improved contact doping and annealing systems and processes. In embodiments, a plasma ion immersion implantation (PIII) process is used for contact doping of nanowires and other nanoelement based thin film devices. According to further embodiments of the present invention, pulsed laser annealing using laser energy at relatively low laser fluences below about 100 mJ/cm² (e.g., less than about 50 mJ/cm², e.g., between about 2 and 18 mJ/cm²) is used to anneal nanowire and other nanoelement-based devices on substrates, such as low temperature flexible substrates, e.g., plastic substrates.



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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B82B 1/00; B82B 3/00; H01L 21/00 (2007.01)

USPC - 438/795

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

USPC- 438/795

IPC (8): B82B 1/00 or B82B 3/00 or H01L 21/00 (2007.01)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Google: Keywords: Nanoscale wires and related devices; doping annealing nanowires; plasma immersion ion implantation and nanowires

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WEST: DB=PGPB,USPT,USOC,EPAB,JPAB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 2002/0175408 A1 (MAJUMBAR et al.) 28 November 2002 (28.11.2002), claims 89, 144, 146, 163, 83, 142, 170, 171, 246, 188 and 198; para [0094]; [0144]; [0076]-[0078];[0094]; [0219]-[0220]; [0140]; [0142]-[0144]; [0145]; [0146]; [0169]; [0170]; [0242]; [0076]-[0078];[0140]; [0142]-[0143]; [0201]; [0234]	1, 2, 9, 12-15, 20-26, 43, 50-51, 60-63, 74 ----- 3-8, 10-11, 16-19, 27-42, 44-49, 52-59, 64-70
Y	US 4,949,348 A (NGUYEN et al.) 14 August 1990 (14.08.1990), abstract; Col 4, ln 44-48' Col 3, ln 36-41; Col 1, ln 23-27; Col 2, ln 58-60; Col 2, ln 10-16	3-8, 10-11, 17-19, 27-42, 44-48, 52-59, 64-70
Y	US 6,458,430 B1 (BERNSTEIN et al.) 01 October 2002 (01.10.2002), Col 2, ln 1-5; Col 9, ln 6-68; Col 10, ln 1-10	16, 35, 49

 Further documents are listed in the continuation of Box C.

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