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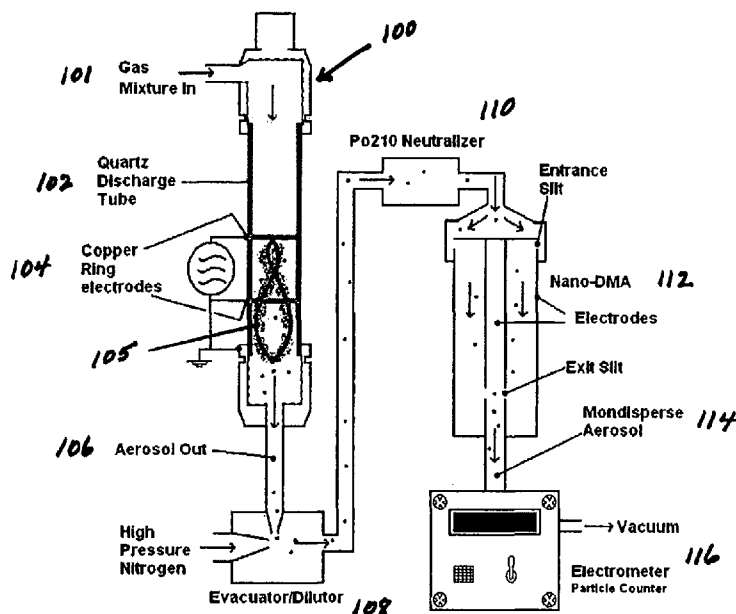
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(54) Title: PROCESS AND APPARATUS FOR FORMING NANOPARTICLES USING RADIOFREQUENCY PLASMAS



(57) Abstract: Methods and apparatus for producing nanoparticles, including single-crystal semiconductor nanoparticles, are provided. The methods include the step of generating a constricted radiofrequency plasma in the presence of a precursor gas containing precursor molecules to form nanoparticles. Single-crystal semiconductor nanoparticles, including photoluminescent silicon nanoparticles, having diameters of no more than 10 nm may be fabricated in accordance with the methods.

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 USPC: 438/776  
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**B. FIELDS SEARCHED**  
 Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 438/776,775,772 ; 427/212,217,443.1; 156/345.28 ; 117/200 ; 257/49 ; B05D 1/18; C23F 1/02; C30B 35/00; H01L 21/461

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2001/0013313 A1( DROOPAD et al) 16 Aug 2001(16.08.2001) fig 1, the whole document	36
Y	US 2002/ 0040765 A1 ( SUZUKI) 11 April 2002(11.04.2002) fig 1 the whole document	37-38
A	US 2002/ 0132045 A1( HALLAS et al) 19 Sep 2002 ( 19.09.2002) fig 1 the whole document	1-38

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