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(54) Title: MULTISPECTRAL PLASMONIC CRYSTAL SENSORS

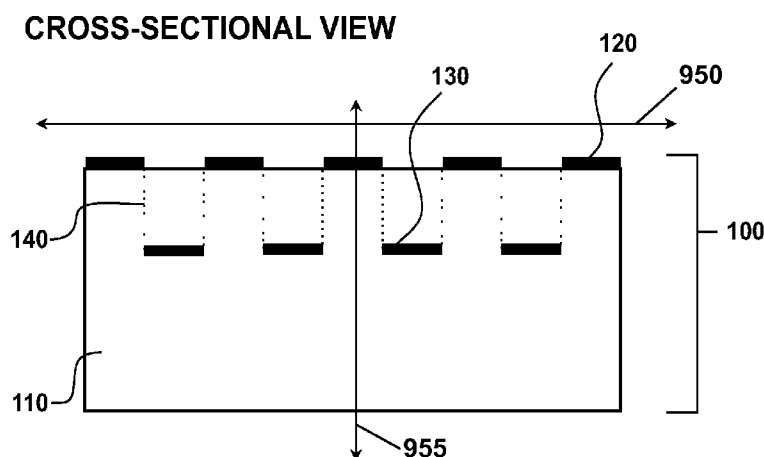


FIG. 1B

(57) Abstract: The present invention provides plasmonic crystals comprising three-dimensional and quasi comprising three-dimensional distributions of metallic or semiconducting films, including multi-layered crystal structures comprising nanostructured films and film arrays. Plasmonic crystals of the present invention include precisely registered and deterministically selected nonplanar crystal geometries and spatial distributions providing highly coupled, localized plasmonic responses in thin film elements and/or nanostructures of the crystal. Coupling of plasmonic responses provided by three-dimensional and quasi-three dimensional plasmonic crystal geometries and structures of the present invention generates enhanced local plasmonic field distributions useful for detecting small changes in the composition of an external dielectric environment proximate to a sensing surface of the plasmonic crystal. Plasmonic crystal structures of the present invention are also useful for providing highly localized excitation and/or imaging of fluorophores proximate to the crystal surface.

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C DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	US 2002/0021445 A1 (Boxhevolnyi et al) 21 February 2002 (21 02 2002), paragraphs 12-103 and 121-186	1-44
A	US 5,455,178 (Fattnger) 3 October 1995 (10 03 1995), column 5-9	1-44
A	US 2006/0119853 A1 (Baumberg et al) 08 June 2006 (08 06 2006) paragraphs 60-147	1-44
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