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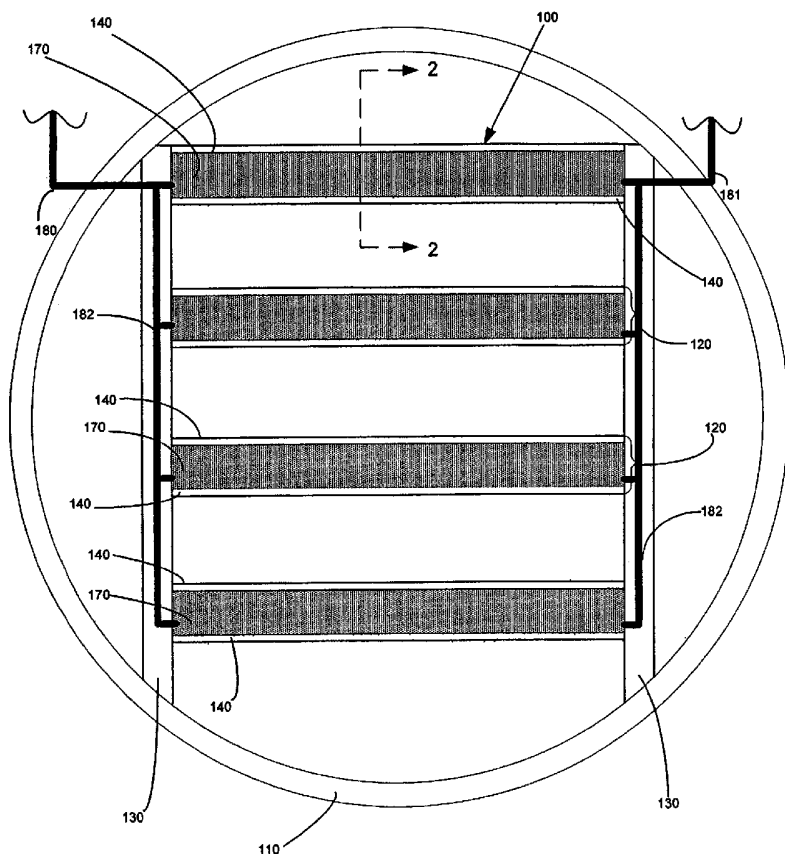
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[Continued on next page]

(54) Title: REACTIVE MEMBRANE PROCESS FOR THE REMOVAL OF VAPOR PHASE CONTAMINANTS



(57) Abstract: Generally, the present invention provides a method and apparatus (100) for removing a vapor phase contaminant from a gas stream, thereby reducing the concentration of the vapor phase contaminant in the gas stream. In one embodiment, the present invention provides a method for removing a vapor phase contaminant from a gas stream, comprising contacting a gas stream comprising a vapor phase contaminant with a first side of a membrane (140); sorbing the vapor phase contaminant using the membrane (140); reacting the vapor phase contaminant into an reacted form of the vapor phase contaminant; transporting the reacted form of the vapor phase contaminant through the membrane (140) to a second side of the membrane (140); contacting the second side of the membrane (140) with a liquid; and dissolving the reacted form of the vapor phase contaminant into the liquid. Methods for making a membrane comprising a metal for use in the present invention is also described.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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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.
A	US 5,409,522 A (DURHAM et al.) 25 April 1995 (25.04.1995) entire document.	1-31
A	US 6,695,894 A (CHANG et al.) 24 February 2004 (24.02.2004), entire document.	1-31
A	US 6,136,072 (SJOSTROM et al.) 24 October 2000 (24.10.2000), entire document.	1-31
A	US 6,172,878 B2 (CHANG et al.) 30 March 2004 (30.03.2004), entire document.	1-31
A	US 6,514,315 B1 (CHANG, Ramsay) 04 February 2003 (04.02.2003), entire document.	1-31
A	US 6,558,454 B1 (CHANG et al.) 06 May 2003 (06.05.2003), entire document.	1-31
A	US 5,024,681 A (CHANGE, Ramsay) 18 June 1991 (18.06.1991), entire document.	1-31

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,948,143 A (SJOSTROM et al.) 07 September 1999 (07.09.1999), entire document.	1-31