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AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) Title: NANOFIBER CONTAINING COMPOSITE STRUCTURES

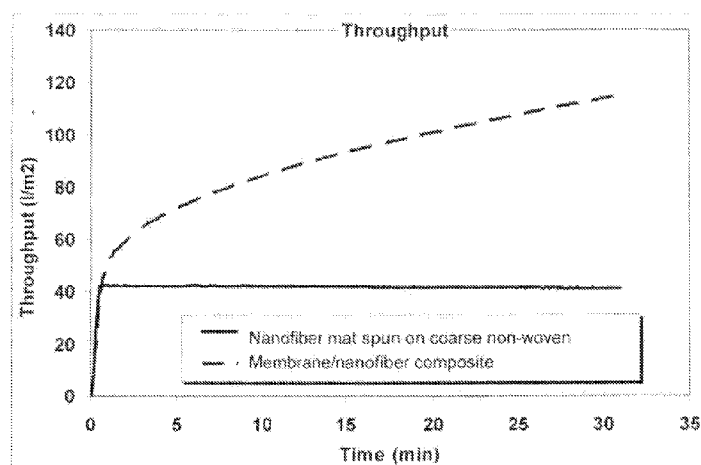


Figure 8

(57) **Abstract:** A composite liquid filtration platform including a composite filtration medium featuring an electrospun polymeric nanofiber layer collected on a porous membrane. When in use, the porous membrane acts as a prefilter used upstream from the polymeric nanofiber layer to remove particles from a liquid stream flowing through the composite filtration structure. The nanofiber layer, positioned downstream from the porous membrane, is used as the retentive layer for critical filtration to provide biosafety assurance, and is responsible for capturing microorganisms like bacteria, mycoplasma or viruses. The composite liquid filtration platform provided herein exhibits permeability advantages over conventional porous membranes or nanofiber mats spun on coarse non-wovens.



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A. CLASSIFICATION OF SUBJECT MATTER***B01D 69/12(2006.01)i, B01D 69/00(2006.01)i, B01D 71/06(2006.01)i, D01D 5/00(2006.01)i, B01D 69/10(2006.01)i***

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)

B01D 69/12; H01M 2/16; H01M 10/40; B01D 63/14; B01D 39/00; B01D 67/00; B01D 39/14; B01D 69/00

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)

eKOMPASS(KIPO internal) & Keywords: filter, membrane, nanofiber, pore, electrospinning, bubble point, composite

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	US 7875380 B2 (CHUN SUK-WON et al.) 25 January 2011 See abstract, claims 1,3,5	1 2-18 19,20
Y A	WO 2010-120668 A1 (ENTEGRIS, INC. et al.) 21 October 2010 See claims 1,4,6,8,11,12, page 18 lines 10-12, page 20 lines 28-35, figure 1	2-18 1,19,20
A	US 7743929 B2 (KOOLS WILLEM) 29 June 2010 See abstract, claims 1,6,12	1-20
A	US 2006-0060519 A1 (GABRIEL TKACIK et al.) 23 March 2006 See abstract, claims 1-5	1-20
A	US 2003-0213744 A1 (WILLEM KOOLS et al.) 20 November 2003 See abstract, claims 1-6	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

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