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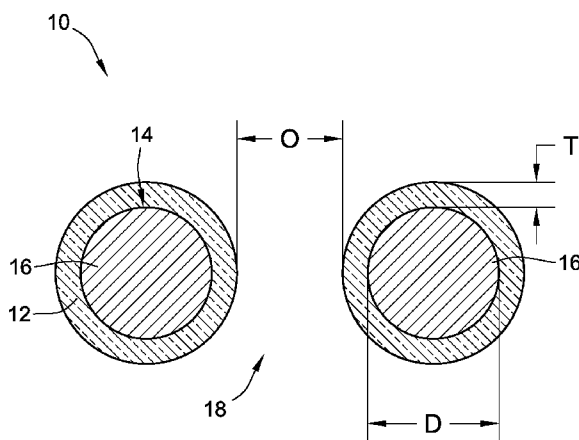
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(54) Title: CONTAMINANT ADSORPTION FILTRATION MEDIA, ELEMENTS, SYSTEMS AND METHODS EMPLOYING WIRE OR OTHER LATTICE SUPPORT

FIG. 1



(57) Abstract: A contaminant adsorption is provided that includes a self-assembled monolayers on mesoporous supports (SAMMS) on a lattice support structure such as sintered metal wire mesh. Individual wire fibers of the sintered wire mesh may have a film coating of mesoporous material that is functionalized for a target metal. The mesh material is formed into filtration elements with or without particulate filtration media. Systems employing such filtration elements in one or multiple stages are also disclosed with an optional acid stripping system for regenerating SAMMS and to facilitate reclamation of contaminants that can be refined into usable commercial materials.

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A. CLASSIFICATION OF SUBJECT MATTER

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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 35/30; B01D 15/04; B01D 15/08; B01D 15/18; B01D 53/14; B29C 45/14; C02F 1/28; C02F 1/42

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

Korean utility models and applications for utility models since 1975.
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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords:SAM, mesoporous, absorbent, heavy metal contaminant

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	US 2009-0032472 A1 (KROGUE JOHN A. et al.) 05 February 2009 See abstract, [0036]-[0040], and claims 1-77	1-60
X	US 2007-0262025 A1 (KROGUE JOHN A. et al.) 15 November 2007 See abstract, [0025]-[0029], claims 1-70, and Figs.1-2	1-60
A	US 2007-0295204 A1 (KROGUE JOHN A. et al.) 27 December 2007 See the whole document	1-60
A	US 2007-0262027 A1 (KROGUE JOHN A. et al.) 15 November 2007 See the whole document	1-60

Further documents are listed in the continuation of Box C.

See patent family annex.

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