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— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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(54) Title: SELECTIVE FLUORIDE AND AMMONIA REMOVAL BY CHROMATOGRAPHIC SEPARATION OF WASTE-WATER

(57) Abstract: A process of fluoride removal from wastewater streams produced during industrial operation for further industrial use or to comply with environmental regulations. The process segregates the removal of fluoride and fluorosilicate ions, from the totality of ions in the wastewater stream, thus improving treatment efficiency and reducing costs. Ion-exchange chromatography is used to remove the fluoride and fluorosilicate ions by passing the wastewater stream through one or more columns that contain a charge resin, which selectively binds cations/anions in the stream. The fluoride ions are washed from the column and then collected for removal or use in other processes.

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# INTERNATIONAL SEARCH REPORT

International application No.

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**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : B01D 15/08  
 US CL : 210/656, 682; 423/483, 488

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)  
 U.S. : 210/656, 659, 662, 682, 915; 423/483, 484, 488

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 5,876,685 A (KRULIK et al) 02 March 1999 (02.03.1999), column 4, lines 9-13.	1-21
A	US 5,043,072 A (HITOTSUYANAGI et al) 27 August 1991 (27.08.1991), column 2, lines 4-15.	1-21

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"O"	document referring to an oral disclosure, use, exhibition or other means	
"P"	document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

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