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(81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, 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.

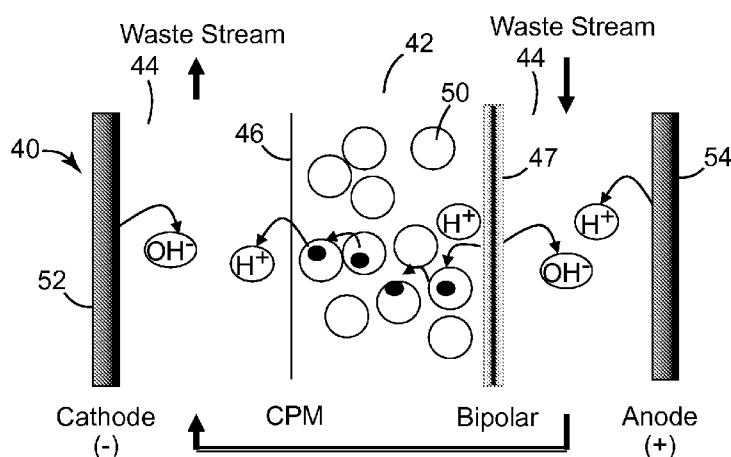
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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: RECHARGEABLE ELECTROCHEMICAL CELLS

**FIG. 4**

(57) **Abstract:** Provided are electrochemical devices that are rechargeable, where the regeneration techniques are based on a batch-wise application of current or current density to the cells, where there are a service mode where no current or current density is applied and a recharge mode where a current or current density is applied. Electrochemical and EDI systems according to the embodiments herein are suitable for deionization and/or purification of typical municipal tap quality water in applications where demand for purified, low-TDS water is intermittent. Such operations avoid the use of chemical additions for regeneration purposes. In addition the cells provided herein are amenable to small footprints for consumer and commercial applications such as: dishwashers, washing machines, coffee and espresso makers, ice makers, steam tables, car wash water sources, and steamers.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) C02F B01J A47J 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) EP0-Internal, WPI Data																	
C. DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%; padding: 5px;">Category*</th> <th style="width: 70%; padding: 5px;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width: 20%; padding: 5px;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">X</td> <td style="padding: 5px;"> WO 2004/024992 A1 (IONICS [US]; GREBENYUK VLADIMIR [US]; CARSON WILLIAM C [US]; GREBENYUK) 25 March 2004 (2004-03-25) page 1, line 1 - page 23, line 11 ----- </td> <td style="text-align: center; vertical-align: top; padding: 5px;"> 1-15, 17-27 </td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">X</td> <td style="padding: 5px;"> US 4 964 970 A (O'HARE HARRY [US]) 23 October 1990 (1990-10-23) figures 1-8 column 1, line 41 - column 6, line 45 ----- </td> <td style="text-align: center; vertical-align: top; padding: 5px;"> 1-15, 17-19, 21-37 </td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">X</td> <td style="padding: 5px;"> WO 2005/106100 A1 (UNILEVER NV [NL]; UNILEVER PLC [GB]; LEVER HINDUSTAN LTD [IN]; VAN KRA) 10 November 2005 (2005-11-10) page 4, line 28 - page 5, line 32 page 8, line 1 - page 9, line 5 claims 1, 5,6,14 ----- </td> <td style="text-align: center; vertical-align: top; padding: 5px;"> 1-16, 28-37 </td> </tr> <tr> <td colspan="3" style="text-align: center; padding: 5px;">-/-</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	WO 2004/024992 A1 (IONICS [US]; GREBENYUK VLADIMIR [US]; CARSON WILLIAM C [US]; GREBENYUK) 25 March 2004 (2004-03-25) page 1, line 1 - page 23, line 11 -----	1-15, 17-27	X	US 4 964 970 A (O'HARE HARRY [US]) 23 October 1990 (1990-10-23) figures 1-8 column 1, line 41 - column 6, line 45 -----	1-15, 17-19, 21-37	X	WO 2005/106100 A1 (UNILEVER NV [NL]; UNILEVER PLC [GB]; LEVER HINDUSTAN LTD [IN]; VAN KRA) 10 November 2005 (2005-11-10) page 4, line 28 - page 5, line 32 page 8, line 1 - page 9, line 5 claims 1, 5,6,14 -----	1-16, 28-37	-/-		
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Date of the actual completion of the international search 28 February 2013		Date of mailing of the international search report 12/03/2013															
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Rozanska, Agnieszka															

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