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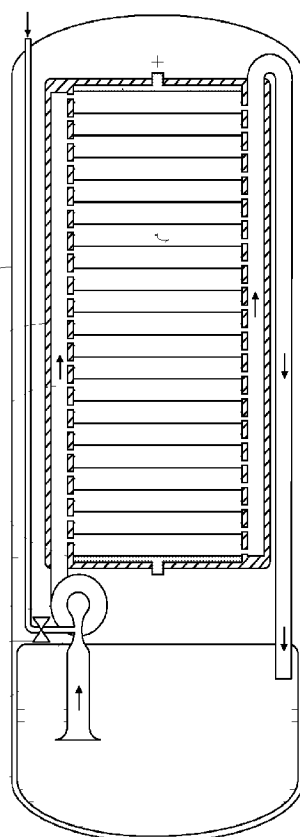
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(54) Title: ELECTROCHEMICAL ENERGY CELL SYSTEM

Containment Vessel 11
Stack Assembly 12
Cell Assembly 13
Current Collector 14
Chlorine Feed 15
Circulation Pump 16
Metering Valve 17
Mixing Venturi 18
Reservoir 19



(57) Abstract: A metal halogen electrochemical energy cell system that generates an electrical potential. One embodiment of the system includes at least one cell including at least one positive electrode and at least one negative electrode, at least one electrolyte, a mixing venturi that mixes the electrolyte with a halogen reactant, and a circulation pump that conveys the electrolyte mixed with the halogen reactant through the positive electrode and across the metal electrode. Preferably, the positive electrode comprises porous carbonaceous material, the negative electrode comprises zinc, the metal comprises zinc, the halogen comprises chlorine, the electrolyte comprises an aqueous zinc chloride electrolyte, and the halogen reactant comprises a chlorine reactant. Also, variations of the system and a method of operation for the systems.

INTERNATIONAL SEARCH REPORT

International application No

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A CLASSIFICATION OF SUBJECT MATTER IPC(8) - H01 M 8/04, 4/02 (2008.04) USPC - 429/15, 29 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) 429/15, 29 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) PubWEST(USPT,PGPB,EPAB,JPAB), DialogPRO(Engineering), Google Scholar Search Terms electrochemical cell, porous, carbonaceous, zinc, halogen, chloride, manifold, pump, electrode/cathode/anode																	
C DOCUMENTS CONSIDERED TO BE RELEVANT <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No</th> </tr> </thead> <tbody> <tr> <td>X ----- Y</td> <td>US 4,518,663 A (Kodali et al) 21 May 1985 (21 05 1985), entire document especially col 7, ln 10-15, col 7, ln 25-45, col 4, ln 3-45, col 4, ln 3-65, col 13, ln 10-35, col 4, ln 3-65, col 3, ln 65 to col 4, ln 5, col 4, ln 15-40, Fig 2-4</td> <td>1-8, 11-28, 34-35, 38-45, 48-65 and 71-72 ----- 9-10, 29-33, 36-37, 46-47, 66-70 and 73-74</td> </tr> <tr> <td>Y</td> <td>US 4,162,351 A (Putt et al) 24 Jul 1979 (24 07 1979), entire document especially Abstract and col 4, ln 49-64</td> <td>9, 29-33, 46 and 66-70</td> </tr> <tr> <td>Y</td> <td>US 4,115,529 A (Behling) 19 Sep 1978 (19 09 1978), entire document especially Example 1</td> <td>10, 33, 47 and 70</td> </tr> <tr> <td>Y</td> <td>US 3,644,190 A (Weist et al) 22 Feb 1972 (22 02 1972), entire document especially col 3, ln 15-35</td> <td>36-37 and 73-74</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No	X ----- Y	US 4,518,663 A (Kodali et al) 21 May 1985 (21 05 1985), entire document especially col 7, ln 10-15, col 7, ln 25-45, col 4, ln 3-45, col 4, ln 3-65, col 13, ln 10-35, col 4, ln 3-65, col 3, ln 65 to col 4, ln 5, col 4, ln 15-40, Fig 2-4	1-8, 11-28, 34-35, 38-45, 48-65 and 71-72 ----- 9-10, 29-33, 36-37, 46-47, 66-70 and 73-74	Y	US 4,162,351 A (Putt et al) 24 Jul 1979 (24 07 1979), entire document especially Abstract and col 4, ln 49-64	9, 29-33, 46 and 66-70	Y	US 4,115,529 A (Behling) 19 Sep 1978 (19 09 1978), entire document especially Example 1	10, 33, 47 and 70	Y	US 3,644,190 A (Weist et al) 22 Feb 1972 (22 02 1972), entire document especially col 3, ln 15-35	36-37 and 73-74
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