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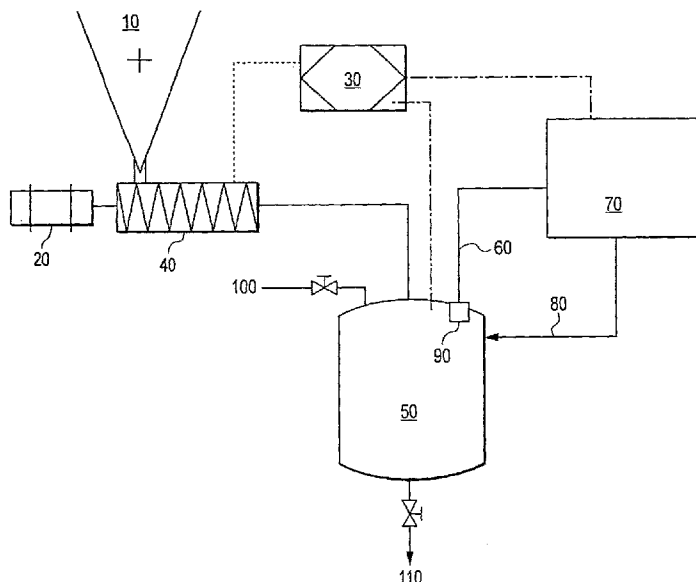
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(54) Title: METHODS AND DEVICES FOR HYDROGEN GENERATION FROM SOLID HYDRIDES



(57) Abstract: Hydrogen generators and power module systems that use solid chemical hydrides and acidic reagents for hydrogen storage and generation on demand are disclosed. The generators incorporate mechanisms for controlling the contact between solid chemical hydride and acidic reagents to control the rate of hydrogen generation and characteristics of the reaction products, including bulk density. The preferred systems of the present invention combine functions of fuel reagent storage, reaction chamber, and gas-liquid separation into a minimum number of components to reduce the balance of plant of hydrogen generation systems.

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A. CLASSIFICATION OF SUBJECT MATTER

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USPC - 423/648.1; 48/61

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B. FIELDS SEARCHED

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USPC - 423/\$; 422/\$ (search terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST, Google Patents Database, Google Scholar Database

(hydrogen, hydrolyze, fuel, reaction chamber, acid, reagent, outlet, separate, solid, liquid, screw feeder, rotary star feeder, controller, fuel cell, generate, permeable, membrane, partition, pump, valve, silicon, polyethylene, polypropylene, polyurethane, fluoropol)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0047801 A1 (Petillo, et al.) 11 Mar 2004 (11.03.2004) paragraphs 0003, 0007, 0015-0019, 0024, 0026-0029, 0032, 0034; 0045	1-10, 13, 22, 28-33, 37, 46-49, 55-62, 69-74, 76-84, 86 and 88-92
Y		11-12, 14-21, 23-27, 34-36, 38-45, 50-54, 63-68, 75, 85, 87, 93-96
Y	US 6,939,529 B2 (Strizki, et al.) 6 Sep 2005 (06.09.2005) column 1, line 11-22, column 2, line 50-58, column 3, line 40-63, column 6, line 9-15	11-12, 14-21, 23, 34-36, 38-45, 75, 85 and 87
Y	US 6,645,651 B2 (Hockaday, et al.) 11 Nov 2003 (11.11.2003) column 1, line 10-18, column 5, line 2-3, line 59-64, column 9, line 38-41, line 62-66, column 10, line 20-22, column 11, line 15-17, line 22-27	24-27
Y	US 4,196,177 A (Sallay) 1 Apr 1980 (01.04.1980) column 1, line 11-18, column 4, line 59-61, column 5, line 2-3, column 9, line 38-41, line 62-66	50-54, 63-68 and 93-96

Further documents are listed in the continuation of Box C.

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