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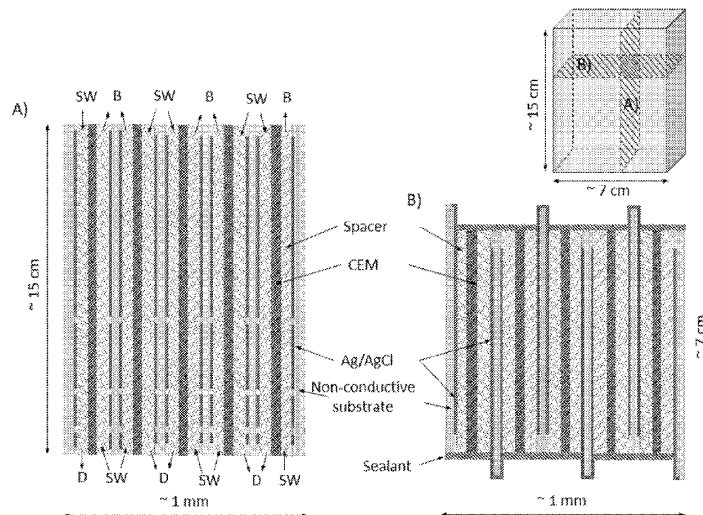
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(54) Title: ELECTROCHEMICAL SYSTEM FOR LOW ENERGY AND HIGH EFFICIENCY WATER DESALINATION

FIG. 4



(57) Abstract: An electrode module operable for electrodialysis, disclosed herein, comprises a substrate, and an array of electrodes arranged on the substrate, wherein each of the electrodes is shaped as a planar sheet and each planar sheet is a segment of the array of electrodes, wherein each segment is arranged apart from another segment, and wherein each segment has a different planar surface area from another segment. An electrodialysis system, disclosed herein, comprises one or more electrodialysis cells, wherein each of the one or more electrodialysis cells comprise an anode electrically coupled to a cathode, wherein each of the anode and the cathode comprises the electrode module, and a cation-selective membrane arranged between the anode and the cathode to define a concentrate channel and a diluate channel, wherein the anode and the cathode are arranged for segments of the anode and segments of the cathode having identical planar surface area face each other. A method of controlling desalination efficiency in electrodialysis, involving the

[Continued on next page]

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