What is claimed is:

1. A water electrolysis device, comprising:

a housing comprising a side wall;

an ion exchange membrane electrolytic cell within the housing, the ion exchange membrane electrolytic cell comprising a first side, a second side opposite to the first side, an ion exchange membrane, a cathode, an anode, a hydrogen output tube, and an oxygen output tube, and a water tube, the ion exchange membrane being configured between the cathode and the anode; and

an integrated pathway module comprising a water tank and a gas tube, wherein the hydrogen output tube, the oxygen output tube and the water tube are directly coupled to the integrated pathway module;

wherein when the ion exchange membrane electrolytic cell electrolyzes water, the cathode generates hydrogen which is outputted via the hydrogen output tube, and the anode generates oxygen which is outputted via the oxygen output tube;

wherein the water tube extends outward from the second side to allow water to be replenished via the water tube into the ion exchange membrane electrolytic cell from the second side; and

wherein the first side faces the side wall, and the hydrogen output tube and the oxygen output tube extend outward from the second side to allow the hydrogen and the oxygen to be outputted from the second side of the ion exchange membrane electrolytic cell.

2. The electrolysis device of claim 1, wherein the anode is between the ion exchange membrane and the second side, and the cathode is between the ion exchange membrane and the first side; the oxygen

output tube extends from the area between the ion exchange membrane and the second side to the second side, and penetrates through the second side; and the hydrogen output tube extends from the area between the ion exchange membrane and the first side to the second side, and penetrates through the second side.

3. The electrolysis device of claim 1, wherein the anode is between the ion exchange membrane and the first side, and the cathode is located between the ion exchange membrane and the second side; the hydrogen output tube extends from the area between the ion exchange membrane and the second side, and penetrates through the second side; and the oxygen output tube extends from the area between the ion exchange membrane and the first side to the second side, and penetrates through the second side.

4. The electrolysis device of claim 1, wherein the ion exchange membrane electrolytic cell comprises a cathode chamber and an anode chamber, the cathode chamber comprises the cathode, a cathode seal plate, a cathode conductive plate, and a cathode external plate; the anode chamber comprises the anode, an anode seal plate, an anode conductive plate, and an anode external plate.

5. The electrolysis device of claim 4, wherein the water tube is configured to penetrate through the cathode external plate, the cathode conductive plate, and the cathode seal plate to communicate with the cathode chamber and the water tank to allow water to be accommodated in the water tank to flow into the cathode chamber via the water tube to replenish the cathode chamber.

6. The electrolysis device of claim 5, further comprising a water gauge configured to detect water level of the water tank, and further comprising a separation tank comprising a spring valve, a float and a

hydrogen discharge tube, wherein when in use the hydrogen generated by the ion exchange membrane electrolytic cell is transported to the separation tank to separate the residual electrolytic water from the hydrogen, the spring valve is opened due to the hydrogen pressure to output the hydrogen via the hydrogen discharge tube, the residual electrolytic water is accumulated in the separation tank and the float floats up with rising water level of the residual electrolytic water to output the residual electrolytic water to the water tank for reusing.

7. The electrolysis device of claim 1, further comprising a fan and a gas pump, wherein the gas tube is coupled to the hydrogen output tube to receive the hydrogen, the fan is configured to draw the air from external environment outside of the electrolysis device into the electrolysis device, and the gas pump is configured to draw the air into the gas tube to dilute the hydrogen concentration inside the gas tube.

8. The electrolysis device of claim 7, further comprising a gas mixing chamber directly coupled to the integrated pathway module to receive the diluted hydrogen from the gas tube, wherein the gas mixing chamber is configured to selectively generate an atomized gas to mix with the hydrogen to form a healthy gas, and the atomized gas is water vapor, atomized solution, volatile essential oil, or any combination thereof.

9. The electrolysis device of claim 7, wherein the gas pump is coupled to the gas tube via a gas inlet; a linking position between the gas inlet and the gas tube is provided with an angle, and the angle is less than 90 degrees.

10. The electrolysis device of claim 9, wherein the angle is in a range between 25 degrees and 45 degrees, and the shape of the linking position with the angle is made into an arc angle.

11. The electrolysis device of claim 7, further comprising:

a hydrogen concentration detector, coupled to the gas tube and configured to detect whether the hydrogen concentration of the gas tube is in a range between a first threshold and a second threshold, wherein the hydrogen concentration detector is configured to generate a first warning signal when the detected hydrogen concentration is higher than the first threshold; and

a controller, coupled to the hydrogen concentration detector, the gas pump, and the ion exchange membrane electrolytic cell, wherein the controller is configured to generate a start command to turn on the gas pump when receiving the first warning signal.

12. The electrolysis device of claim 11, wherein the hydrogen concentration detector is configured to generate a second warning signal when the detected hydrogen concentration is higher than the second threshold; wherein the controller is configured to generate a stop command to turn off the ion exchange membrane electrolytic cell when receiving the second warning signal.

13. The electrolysis device of claim 12, wherein the first threshold is 4%, the second threshold is 6%, and the range is from 4% to 6%.

14. The electrolysis device of claim 1, wherein the ion exchange membrane comprises a membrane body, a cathode catalyst layer, and an anode catalyst layer; the cathode catalyst layer and the anode catalyst layer are respectively located at two sides of the membrane body; the cathode catalyst layer is located at the cathode chamber, and the anode catalyst layer is located at the anode chamber; the anode catalyst layer is one selected from a group consisting of Pt, Ir, Pd, the alloy powder of Pt, carbon, and combinations thereof, the cathode catalyst layer is one selected from a group consisting of Pt, Ir, Pd, the

alloy powder of Pt, and combinations thereof, and the membrane body is a Nafion membrane.

15. The electrolysis device of claim 1, further comprising a power supplier, wherein the power supplier comprises a high power port and a low power port; the electric power to be outputted from the low power port is less than 50% of the electric power to be outputted from the high power port; the high power port is configured to output a first voltage and a first current, and the low power port is configured to output a second voltage and a second current; and the first voltage is less than the second voltage, and the first current is greater than the second current.

16. The electrolysis device of claim 1, further comprising an operation panel, wherein the volume of the electrolysis device is less than 8.5 liters, and a hydrogen production rate of the electrolysis device regulated by the operation panel is in a range between 120 mL/min to 600 mL/min.

17. A water electrolysis device, comprising:

a water tank configured to accommodate water;

an ion exchange membrane electrolytic cell, wherein the ion exchange membrane electrolytic cell comprises an ion exchange membrane, a cathode, an anode, a hydrogen output tube, and an oxygen output tube; wherein when the ion exchange membrane electrolytic cell electrolyzes the water from the water tank, the cathode generates hydrogen and the anode generates oxygen; the hydrogen output tube is configured to output the hydrogen, and the oxygen output tube is configured to output the oxygen and a remained water;

an integrated pathway module comprising the water tank and a gas tube, wherein the hydrogen output tube and the oxygen output tube are directly coupled to the integrated pathway module; and

a pump coupled to the gas tube, the pump being configured to draw an external gas into the gas tube to dilute the hydrogen inside the gas tube;

wherein the ion exchange membrane electrolytic cell is configured to output the oxygen and the hydrogen from the same side of the ion exchange membrane electrolytic cell.

18. The electrolysis device of claim 17, wherein the ion exchange membrane electrolytic cell further comprises a water tube, a first side, and a second side opposite to the first side, the ion exchange membrane and the first side form a cathode chamber to dispose the cathode therein, the ion exchange membrane and the second side form an anode chamber to dispose the anode therein, the hydrogen output tube is coupled to the cathode chamber, the oxygen output tube and the water tube are coupled to the anode chamber, the hydrogen output tube, the oxygen output tube, and the water tube extend along the same direction to one of the first side and the second side and respectively penetrate the ion exchange membrane and the side wall of the ion exchange membrane electrolytic cell, so as to output the hydrogen and the oxygen and receive the water at the same side of the ion exchange membrane electrolytic cell.

19. The electrolysis device of claim 17, further comprising a pre-heating tank comprising a water inlet, a water outlet, and an oxygen import tube, the water inlet coupled to the water tank to receive the water, and the water outputted to the ion exchange membrane electrolytic cell from the water outlet, the oxygen import tube being coupled to the

oxygen output tube, the remained water and the oxygen being outputted to the pre-heating tank via the oxygen import tube, the remained water outputted from the oxygen import tube pre-heats the water of the pre-heating tank; wherein the pre-heating tank further comprises a plurality of cooling fins and a second fan, the cooling fins are radially configured on an outside wall of the pre-heating tank, and the second fan is configured on an end of the pre-heating tank to cool the pre-heating tank.

20. A water electrolysis device, comprising:

an ion exchange membrane electrolytic cell configured to electrolyze water, comprising a second side, an ion exchange membrane, a cathode, an anode, a hydrogen output tube, and an oxygen output tube, wherein the ion exchange membrane is configured between the cathode and the anode; when the ion exchange membrane electrolytic cell electrolyzes water, the cathode generates hydrogen which is outputted via the hydrogen output tube, and the anode generates oxygen which is outputted via the oxygen output tube; and

an integrated pathway module comprising:

a water tank coupled to the ion exchange membrane electrolytic cell, the water tank being configured to replenish the water to the ion exchange membrane electrolytic cell, wherein the top of the water tank is higher than the top of the ion exchange membrane electrolytic cell; and

a gas pathway coupled to the ion exchange membrane electrolytic cell, the gas pathway being configured to transport the hydrogen; wherein, the second side of the ion exchange membrane

electrolytic cell faces the integrated pathway module, the oxygen and the hydrogen are to be outputted to the gas pathway from the second side, and the water is to be inputted to the ion exchange membrane electrolytic cell from the second side; and

a gas mixing chamber configured to receive the hydrogen from the gas pathway, wherein the gas mixing chamber is configured to selectively generate an atomized gas to mix with the hydrogen to form a healthy gas, and the atomized gas is water vapor, atomized solution, volatile essential oil, or any combination thereof.