CLAIMS

1. A fine bubble electrolyzed water generating apparatus, comprising:

an electrolytic apparatus having a three-chamber structure including an anode chamber with an anode electrode, a cathode chamber with a cathode electrode, an intermediate chamber provided between the anode chamber and the cathode chamber, an anode diaphragm provided between the anode chamber and the intermediate chamber, and a cathode diaphragm provided between the cathode chamber and the intermediate chamber;

an acidic electrolyzed water storage tank that stores acidic electrolyzed water;

an alkaline electrolyzed water storage tank that stores alkaline electrolyzed water;

a first pipe through which the anode chamber is in communication with the acidic electrolyzed water storage tank;

a second pipe through which the cathode chamber is in communication with the alkaline electrolyzed water storage tank;

a first and second nanobubble generator that generates nanobubbles with gas and liquid, respectively;

a third pipe through which the acidic electrolyzed water storage tank is in communication with the first nanobubble generator, one end of the third pipe being connected with the first pipe in

the acidic electrolyzed water storage tank;

a fourth pipe through which the first nanobubble generator is in communication with the acidic electrolyzed water storage tank;

a fifth pipe through which the alkaline electrolyzed water storage tank is in communication with the second nanobubble generator, one end of the fifth pipe being connected with the second pipe in the alkaline electrolyzed water storage tank;

a sixth pipe through which the second nanobubble generator is in communication with the alkaline electrolyzed water storage tank;

wherein the first nanobubble generator receives an anode electrolyzed water and chlorine gas generated in the anode chamber through the first and third pipes and generates the nanobubbles with the anode electrolyzed water and the chlorine gas to supply the nanobubbles to the acidic electrolyzed water storage tank through the fourth pipe, and

wherein the second nanobubble generator receives a cathode electrolyzed water and hydrogen gas generated in the cathode chamber through the second and fifth pipes and generates the nanobubbles with the cathode electrolyzed water and the hydrogen gas to supply the nanobubbles to the alkaline electrolyzed water storage tank through the sixth pipe.

2. The fine bubble electrolyzed water generating apparatus according to claim 1, wherein the fine bubble acidic electrolyzed

water containing the nanobubbles generated in the anode electrolyzed water is used for sterilization.

3. The fine bubble electrolyzed water generating apparatus according to claim 1, wherein the third pipe and the fifth pipe are extending in a vertical direction, respectively.

4. A method for generating fine bubble electrolyzed water, comprising:

electrolyzing an aqueous solution of sodium chloride with an anode electrode and a cathode electrode;

feeding chlorine gas and acidic electrolyzed water generated at the anode electrode to a first nanobubble generator after feeding the chlorine gas and the acidic electrolyzed water to an acidic electrolyzed water storage tank;

feeding hydrogen gas and alkaline electrolyzed water generated at the cathode electrode to a second nanobubble generator after feeding the hydrogen gas and the alkaline electrolyzed water to an alkaline electrolyzed water storage tank;

processing the chlorine gas and the acidic electrolyzed water by the first nanobubble generator to generate chlorine nanobubble electrolyzed water;

processing the hydrogen gas and the alkaline electrolyzed water by the second nanobubble generator to generate hydrogen nanobubble electrolyzed water;

feeding the chlorine nanobubble electrolyzed water to the acidic electrolyzed water storage tank through a pipe different from a pipe that feeds the chlorine gas and the acidic electrolyzed water to the first nanobubble generator; and

feeding the hydrogen nanobubble electrolyzed water to the alkaline electrolyzed water storage tank through a pipe different from a pipe that feeds the hydrogen gas and the alkaline electrolyzed water to the second nanobubble generator.

5. A fine bubble electrolyzed water generating apparatus, comprising:

an electrolytic apparatus having a two-chamber structure including an anode chamber with an anode electrode, a cathode chamber with a cathode electrode, and a diaphragm provided between the anode chamber and the cathode chamber;

an acidic electrolyzed water storage tank that stores acidic electrolyzed water;

an alkaline electrolyzed water storage tank that stores acidic electrolyzed water;

a first pipe through which the anode chamber is in communication with the acidic electrolyzed water storage tank;

a second pipe through which the cathode chamber is in communication with the alkaline electrolyzed water storage tank;

a first and second nanobubble generators that generate nanobubbles with gas and liquid;

a third pipe through which the acidic electrolyzed water storage tank is in communication with the first nanobubble generator, one end of the third pipe being connected with the first pipe in the acidic electrolyzed water storage tank;

a fourth pipe through which the first nanobubble generator is in communication with the acidic electrolyzed water storage tank;

a fifth pipe through which the alkaline electrolyzed water storage tank is in communication with the second nanobubble generator, one end of the fifth pipe being connected with the second pipe in the alkaline electrolyzed water storage tank,

a sixth pipe through which the second nanobubble generator is in communication with the alkaline electrolyzed water storage tank,

wherein the first nanobubble generator receives an anode electrolyzed water and chlorine gas generated in the anode chamber through the first and third pipes and generates the nanobubbles with the anode electrolyzed water and the chlorine gas to supply the nanobubbles to the acidic electrolyzed water storage tank through the fourth pipe, and

the second nanobubble generator receives a cathode electrolyzed water and hydrogen gas generated in the cathode chamber through the second and fifth pipes and generate the nanobubbles with the cathode electrolyzed water and the hydrogen gas to supply the nanobubbles to the alkaline electrolyzed water storage tank through the sixth pipe.

6. The fine bubble electrolyzed water generating apparatus according to claim 5, wherein the third pipe and the fifth pipe are extending in a vertical direction, respectively.

7. A fine bubble electrolyzed water generating apparatus, comprising:

an electrolytic apparatus having a one-chamber structure in which an anode electrode and a cathode electrode are arranged in one chamber;

an electrolyzed water storage tank that stores an electrolyzed water;

a first pipe through which the electrolytic apparatus is in communication with the electrolyzed water storage tank;

a nanobubble generator that generates nanobubbles with gas and liquid;

a second pipe through which the electrolyzed water storage tank is in communication with the nanobubble generator, one end of the second pipe being connected to the first pipe in the electrolyzed water storage tank; and

a third pipe through which the nanobubble generator is in communication with the electrolyzed water storage tank;

wherein the nanobubble generator receives an acidic electrolyzed water and chlorine gas generated by the anode electrode through the first and second pipes and generates the nanobubbles

with the acidic electrolyzed water and the chlorine gas to supply the nanobubbles to the electrolyzed water storage tank through the third pipe.

8. The fine bubble electrolyzed water generating apparatus according to claim 7, wherein the second pipe is extending in a vertical direction.