What is claimed is:

1. A preparation method for a biological surgery patch, comprising the following steps:

(1) fermenting culturing a strain to obtain a bacterial cellulose membrane; adding biopolymer materials during the fermenting culturing process; the biopolymer materials include one or more of polylactic acid, polyamide, polyester, glycerol, polylactide, polycaprolactone, polyvinyl chloride and polyethylene;

(2) soaking the bacterial cellulose membrane obtained in step (1) in an inorganic base solution and an acid solution sequentially to obtain a purified bacterial cellulose membrane;

(3) immersing the purified bacterial cellulose membrane obtained in step (2) into an oxidant solution for oxidation to obtain an oxidized bacterial cellulose membrane;

(4) subjecting the oxidized bacterial cellulose membrane obtained in step (3) to freeze-thawing to obtain a freeze-thawed bacterial cellulose membrane;

(5) placing the freeze-thawed bacterial cellulose membrane obtained in step (4) into a glycerol aqueous solution, stirring and drying to obtain a composite processed bacterial cellulose membrane;

(6) performing electrostatic spinning on the composite processed bacterial cellulose membrane obtained in step (5) to obtain an intermediate product of a biological surgery patch; the electrostatic spinning solution includes a solution of one or more of polylactic acid, polycaprolactone, chitosan, polyacrylonitrile and polycarbonate; the solvent of the solution is one or more of dichloromethane, trichloromethane, tetrahydrofuran, N,N-dimethylformamide, N,N-dimethylacetamide, dimethyl sulfoxide, diethyl ether, n-hexane and petroleum ether; and

(7) subjecting the intermediate product of a biological surgery patch obtained in step (6) to freeze drying and membrane pressing to obtain the biological surgery patch;

wherein, each 1000 mL of the medium for the fermenting culturing in step (1) comprises: 20 g to 25 g of mannitol, 10 g to 15 g of polyethylene glycol, 25 g to 30 g of sucrose, 15 g to 20 g of glucose, 0.5 mg to 0.8 mg of nicotinic acid, 5 g to 6 g of yeast powder, 10 g to 15 g of dry powder of corn steep liquor, 5 g to 10 g of beef extract, 5 g to 10 g of peptone, 1.5 g to 2.5 g of KH_2PO_4, 2.0 g to 2.5 g of $MgSO_4$, 8 g to 10 g of anhydrous ethanol, 0.5 g to 0.8 g of ammonium sulfate, 0.5 g to 0.6 g of citric acid, 0.5 g to 0.6 g of sodium carboxymethylcellulose and 40 g to 50 g of a mixture of gluconic acid and sodium gluconate; and the mass ratio of the gluconic acid to the sodium gluconate is 1: (1 to 5).

2. The preparation method according to claim 1, wherein, the strain of step (1) comprises one or more of *Acetobacter*, *Rhizobium*, *Gluconobacter*, *Acetobacter xylinum*, *Sarcina*, *Pseudomonas*, *Achromobacter*, *Alcaligenes*, *Aerobacter*, *Azotobacter*, and *Agrobacterium*.

3. The preparation method according to claim 1, wherein, the fermenting culturing in step (1) is performed at 20°C to 40°C with an oxygen flux of 0.01 L/min to 10 L/min and a pH value of 3 to 9 for 6 days to 14 days.

4. The preparation method according to claim 1, wherein, when the biopolymer materials in step (1) include a plurality of types, the biopolymer materials are added one by one in the order of polylactic acid, polyamide, polyester, glycerol, polylactide, polycaprolactone, polyvinyl chloride, and polyethylene.

5. The preparation method according to claim 1, wherein, the oxidant in step (3) is an aqueous solution comprising one or more of hydrogen peroxide, sodium hypochlorite, sodium peroxide, potassium peroxide, peracetic acid, sodium percarbonate, sodium perborate and potassium perborate.

6. The preparation method according to claim 5, wherein, the mass fractions of the hydrogen peroxide, sodium hypochlorite, sodium peroxide, potassium peroxide, peroxyacetic acid, sodium percarbonate, sodium perborate and potassium perborate in water are 1% to 50%, respectively.

7. The preparation method according to claim 1, wherein, in step (4), the freeze-thawing is carried out as follows: freezing the oxidized bacterial cellulose membrane obtained in step (3) at -45°C to -1°C for 0.2 to 10 h, taking out and thawing under the environment of 5°C to 35°C for 0.2 to 10 hours, and discarding the thawed water; repeating the above freezing and thawing operations for 2 to 9 times.

8. The preparation method according to claim 1, wherein, the mass concentrations of polylactic acid, polycaprolactone, chitosan, polyacrylonitrile or polycarbonate in the electrostatic spinning solution in step (6) are 0.01 g/mL to 5 g/mL, respectively.

9. The preparation method according to claim 1, wherein, the mass ratios of the composite processed bacterial cellulose membrane in step (6) to polylactic acid, polyacrylonitrile, polycarbonate, chitosan or polycaprolactone are (0.1 to 3):10, respectively.

10. The biological surgery patch prepared by the preparation method according to any one of claims 1 to 9, wherein, the biological surgery patch is composed of bacterial cellulose

and has a nano-network structure.

11. The biological surgery patch according to claim 10, wherein, the bacterial cellulose has a Young's modulus of 10 to 1000 GPa and a tensile strength of 0.1 to 100 Gpa.

12. The biological surgery patch according to claim 10, wherein, the diameter of the fiber in the nano-network structure is 10 to 200 nm.

13. The biological surgery patch according to claim 10 or 12, wherein, the porosity of the nano-network structure is 60% to 99%; and the pore size of the nano-network structure is 10 to 500 nm.

14. Use of the biological surgery patch according to any one of claims 10 to 13 for the preparation of a repair material for medical use.