[CLAIMS]

[Claim 1]

An anti-biofouling method which suppresses biofouling in water, comprising:

a preparation step of using a copper alloy-made anti-biofouling object member immersed in the water as a cathode electrode, and immersing and arranging an anode electrode member serving as a counter electrode of the anti-biofouling object member with a space from the anti-biofouling object member in the water; and

a current supplying step of supplying DC current between the anti-biofouling object member and the anode electrode member, wherein

the anti-biofouling object member is a water-immersed structure, and

in the current supplying step, the current with a water electrolysis start current density or greater is supplied between the anti-biofouling object member and the anode electrode member to consume all the oxygen around the anti-biofouling object member through reduction of the oxygen.

[Claim 2]

The anti-biofouling method according to claim 1, wherein in the current supplying step, the current with a current density in a range of the water electrolysis start current density to 2.5 A/m^2 is supplied between the anti-biofouling object member and the anode electrode member.

[Claim 3]

The anti-biofouling method according to claim 1, wherein

the copper alloy contains aluminum, and

in the current supplying step, the current with a current

density in a range of the water electrolysis start current density to 20 A/m^2 is supplied between the anti-biofouling object member and the anode electrode member.

[Claim 4]

The anti-biofouling method according to any one of claims 1 to 3, wherein in the current supplying step, the current with a current density of 0.06 A/m^2 or greater is supplied.

[Claim 5]

The anti-biofouling method according to any one of claims 1 to 3, wherein in the current supplying step, the current with a current density of 0.24 A/m^2 or greater is supplied.

[Claim 6]

The anti-biofouling method according to any one of claims 1 to 5, wherein the copper alloy is aluminum bronze.

[Claim 7]

The anti-biofouling method according to any one of claims 1 to 6, wherein the anti-biofouling object member is a ship propeller.

[Claim 8]

The anti-biofouling method according to claim 7, wherein

in the preparation step, additionally, a reference electrode is immersed and arranged in the water, and

in the current supplying step, the DC current is supplied between the ship propeller and the anode electrode member with a potential of the ship propeller kept constant relative to the reference electrode.

[Claim 9]

The anti-biofouling method according to claim 7, wherein

in the preparation step, a water level sensor which measures a position of a waterline is further arranged, and

in the current supplying step, a submerged propeller area under the waterline is obtained from the position of the waterline measured by the water level sensor, and an amount of DC current to be supplied between the ship propeller and the anode electrode member is changed depending on the submerged propeller area in order to keep the current density constant.

[Claim 10]

An anti-biofouling apparatus which suppresses biofouling in water, comprising:

an anode electrode member immersed in the water, serving as a counter electrode of a copper alloy-made anti-biofouling object member which serves as a cathode electrode, and arranged with a space from the anti-biofouling object member;

a power supply electrically connected to the anti-biofouling object member and the anode electrode member; and

a controller which controls the power supply to supply DC current between the anti-biofouling object member and the anode electrode member, wherein

the anti-biofouling object member is a water-immersed structure, and

the controller controls the power supply to supply the current with a water electrolysis start current density or greater between the anti-biofouling object member and the anode electrode member to consume all the oxygen around the anti-biofouling object member through reduction of the oxygen.

[Claim 11]

The anti-biofouling apparatus according to claim 10, wherein the anti-biofouling object member is a ship propeller.

[Claim 12]

The anti-biofouling apparatus according to claim 11, wherein

the ship propeller is arranged on a stern side of a ship hull, and

the anode electrode members are provided to surround the ship propeller from a ship width direction of the ship propeller to a stern direction of the ship propeller.