Claims

1. A method for heat treatment of water of a first vessel (40) using a system for heat treatment of water, the system (102) comprising: a system inlet (4); a system outlet (10); a heat application section (8); a heat recovering section (6); and a heat treatment piping system, which system does not form part of a fixed installation of the first vessel, the water comprising ballast water of the first vessel and/or waste water from hull cleaning of the first vessel, the method comprising:

- providing a flow of the water from the system inlet towards the system outlet via: a first part of the heat recovering section (7a); the heat application section; and a second part of the heat recovering section (7b); such that the water is flowing: from the system inlet (4) to the first part of the heat recovering section (7a); from the first part of the heat recovering section to the heat application section (8); from the heat application section to the second part of the heat recovering section (7b); and from the second part of the heat recovering section to the system outlet (10); wherein the flow of the water being provided using the heat treatment piping system;
- applying heat to the water at the heat application section, such that the water is heated while flowing through the heat application section; and
- recovering heat from the heated water at the heat recovering section by having the water, which is flowing through the second part of the heat recovering section, pre-heating the water, which is flowing through the first part of the heat recovering section, such that heat is exchanged from the second part of the heat recovering section to the first part of the heat recovering section;

wherein both the step of applying heat and the step of recovering heat occurs outside a fixed installation of the first vessel (40).

2. The method according to claim 1, wherein the water comprises ballast water of the first vessel, and wherein the method comprises temporarily coupling at least one of the system inlet and the system outlet to a ballast water piping system of the first vessel using a vessel piping connector.

3. The method according to claim 2, comprising utilizing a ballast pump of the first vessel for providing a flow of the ballast water from at least one ballast tank of the first vessel towards the system inlet or from the system outlet towards at least one ballast tank of the first vessel.

4. The method according to any of the preceding claims, wherein the step of providing a flow of the water from the system inlet (4) towards the system outlet (10) via the heat application section (8) and via the heat recovering section (6) comprises an initial flow phase wherein the flow rate is lower than during a subsequent flow phase,
the method comprising:

- obtaining one or more temperature measurements of the water prior to entering the heat application section and/or subsequent to leaving the heat application section and/or within the heat application section; and
- utilizing the one or more temperature measurements for controlling: a flow rate of the water through the heat application section and/or a heat disposing setting of the heat application section,

the method comprising utilizing the one or more temperature measurements for controlling the initial flow phase.

5. The method according to any of the preceding claims, taking place at an anchorage.

6. The method according to any of the preceding claims, wherein the water is heated at the heat application section, such that the water reaches a temperature of at least 60 °C, and wherein the flow of the water through the heat application section is provided at a flow rate of at least 5 m^3/h.

7. A system comprising a first vessel (40) and a system (102) for heat treatment of water of the first vessel outside a fixed installation of the first vessel, the water comprising ballast water of the first vessel and/or waste water from hull cleaning of the first vessel, the system comprising:

- a system inlet (4);
- a system outlet (10);
- a heat application section (8) configured for applying heat to the water, such that the water that is flowing through the heat application section is heated;
- a heat recovering section (6) configured for recovering heat from the heated water, the heat recovering section comprising a first part (7a) and a second part (7b) configured for exchanging heat; and
- a heat treatment piping system coupling the system inlet to the system outlet via: the first part of the heat recovering section; the heat application section;

and the second part of the heat recovering section; such that the water can flow: from the system inlet to the first part of the heat recovering section; from the first part of the heat recovering section to the heat application section; from the heat application section to the second part of the heat recovering section; and from the second part of the heat recovering section to the system outlet;

the heat recovering section being configured for exchanging heat such that the water, which is flowing through the second part of the heat recovering section, is pre-heating the water, which is flowing through the first part of the heat recovering section,

wherein the system (102) does not form part of a fixed installation of the first vessel (40).

8. The system according to claim 7, comprising a treatment pump configured for providing the flow of the water between the system inlet and the system outlet at a flow rate of at least 5 m^3/h.

9. The system according to claim 7 or 8, comprising a mode valve system (18), the heat recovering section comprises: a primary inlet (6a); a primary outlet (6b); a secondary inlet (6c); and a secondary outlet (6d); the primary inlet being coupled to the system inlet via the mode valve system, the primary outlet being coupled to the secondary inlet via the heat application section (8), the secondary outlet being coupled to the system outlet via the mode valve system, the secondary outlet being coupled to the primary inlet via the mode valve system, the system being configured for: temporarily setting the mode valve system such that the coupling between the secondary outlet and the primary inlet is open while the coupling between the primary inlet and the system inlet is closed and/or while the coupling between the secondary outlet and the system outlet is closed, wherein the mode valve system comprises: an inlet valve (18a) provided between the system inlet and the primary inlet of the heat recovering section; an outlet valve (18c) provided between the system outlet and the secondary outlet of the heat recovering section; and an internal valve (18b) provided between the primary inlet of the heat recovering section and the secondary outlet of the heat recovering section.

10. The system according to any of the claims 7-9, comprising one or more temperature sensors (22a, 22b, 22c) configured for obtaining one or more temperature measurements of the water prior to entering the heat application section

and/or subsequent to leaving the heat application section and/or within the heat application section; the system being configured for utilizing the one or more temperature measurements for controlling: a flow rate of the water through the heat application section and/or a heat disposing setting of the heat application section and/or a setting of the mode valve system according to claim 9.

11. The system according to any of the claims 7-10, comprising a boiler (14) configured for applying heat to the water at the heat application section and/or wherein the heat application section comprises an electric heater configured for applying heat to the water.

12. The system according to any of the claims 7-11, comprising a mobile container, wherein both the heat application section and the heat recovering section are installed within the mobile container.

13. The system according to any of the claims 7-12, being installed and fixed at a port.

14. The system according to any of the claims 7-12, wherein the system is situated at a vessel (80) other than the first vessel, or wherein the system is situated on the first vessel and is provided as a non-fixed installation of the first vessel.

15. The system according to any of the claims 7-14, comprising a detention section (9), the heat treatment piping system coupling the system inlet to the system outlet via the detention section, such that the water can flow from the heat application section to the second part of the heat recovering section via the detention section, the detention section being configured for detaining the water flowing through the detention section for a pre-determined average detention time by having the heated water, which is flowing from the heat application section to the heat recovering section, being detained, such that the heated water is kept heated for the pre-determined average detention time, and wherein the system does not comprise a filter section configured to filter 45 µm particles from the water while the water is flowing between the system inlet and the system outlet.