Claims

1. Robotic energy converter, for converting movement of a movable object into on average usable energy, in particular electrical energy, comprising:

- at least one base structure, wherein said base structure is, directly or indirectly, connected or connectable to a fixed world,
- at least one kinematic chain comprising at least one link and at least one joint, wherein a first end of the at least one kinematic chain is, directly or indirectly, connected to the at least one base structure, and wherein a second opposite end of the at least one kinematic chain is connected or connectable to a movable or moving object,

wherein the robotic energy converter comprises at least one energy converting unit, for converting the movement of a movable object connected to the second end of the kinematic chain into usable energy, preferably electrical energy.

2. Robotic energy converter according to claim 1, wherein the energy converting unit comprises at least one generator, in particular a rotational generator, wherein at least one joint of the at least one kinematic chain is at least partially formed by said generator, for converting a rotation of a link connected to said joint into usable energy.

3. Robotic energy converter according to claim 2, wherein the at least one energy converting unit comprises a plurality of generators, wherein each joint of the at least one kinematic chain is at least partially formed by at least one generator, for converting rotational movement between adjacent links into usable energy.

4. Robotic energy converter according to any of the preceding claims, wherein the at least one kinematic chain is configured for moving outside a 2D-plane, preferably in a 3D-space.

5. Robotic energy converter according to any of the preceding claims, wherein the at least one kinematic chain comprises at least 3 or more degrees of freedom.

6. Robotic energy converter according to claim 5, wherein the at least one kinematic chain comprises at least four separate rotational axis, mutually connected by at least three links.

7. Robotic energy converter according to any of the preceding claims, wherein the base structure is mounted in a substantially vertical position and/or wherein the at least one kinematic chain is suspended to or from the at least one base structure.

8. Robotic energy converter according to any of the preceding claims, wherein the at least one kinematic chain is at least partially formed by a robotic arm and/or robot manipulator and/or, wherein the at least one kinematic chain is movably, preferably rotatably connected to the at least one base structure.

9. Robotic energy converter according to any of the preceding claims, wherein the at least one link, preferably all links, of the at least one kinematic chain are substantially rigid or flexible links and/or, wherein at least a portion of the at least one kinematic chain comprises a protective coating, preferably a corrosive protection coating.

10. Robotic energy converter according to any of the preceding claims, wherein at least one link of the at least one kinematic chain is adjustable in its length direction for increasing or decreasing a range of motion of the at least one kinematic chain.

11. Robotic energy converter according to any of the preceding claims, wherein the movable object is a moveable floating body.

12. Robotic energy converter according to claim 11, wherein the robotic energy converter and/or floating body comprises at least one stabilizing element, preferably a submersed or submersible element, such as a plate, for stabilizing the floating body and/or, wherein the robotic energy converter and/or floating body comprises at least one flow conducting element, for introducing a movement into the at least one floating body through a fluid flow.

13. Robotic energy converter according to any of the preceding claims, wherein the base structure is mounted, preferably to the fixed world, in a substantially vertical direction and/or, wherein at least one link and/or at least one joint comprises at least one actuator, for actuating said at least one link and/or said at least one joint.

14. Robotic energy converter according to any of the preceding claims, wherein the robotic energy converter comprises at least two kinematic chains, preferably independently movable, each comprising at least one link and at least one joint, wherein a first end of the at least two kinematic chains is, directly or indirectly, connected to the at least one base structure, and wherein a second opposite end of the at least two kinematic chains is connected or connectable to a movable object.

15. Robotic energy converter according to claim 13 or 14, wherein the robotic energy converter comprises at least two base structures, wherein the at least two kinematic chains are each, directly or indirectly, connected to a respective base structure via their first ends, preferably wherein the at least two, preferably all, kinematic chains are connected to a shared DC or AC bus.

16. Robotic energy converter according to any of the claims 13-15, wherein the at least two kinematic chains, preferably all kinematic chains are configured to communicate, preferably via at least one control unit, preferably wherein the control unit is configured for independently controlling the at least two kinematic chains, preferably all kinematic chains based on at least one environmental status parameter.

17. Robotic energy converter according to any of the preceding claims, wherein the robotic energy converter comprises at least one monitoring system, such as a camera, for monitoring of the at least one kinematic chain and/or the movable object.

18. Robotic energy converter according to any of the preceding claims, wherein the robotic energy converter further comprises at least one control unit and/or a control system, wherein said control unit and/or control system is configured for actuating the at least one kinematic chain based on a predefined input signal.

19. Robotic energy converter according to claims 17 and 18, wherein said predefined input is received by said at least one control system from the at least one monitoring system.

20. Ship and/or floating structure provided with a robotic energy converter connected to the hull either under or above the water according to any of the preceding claims, in particular according to claim 11.