CLAIMS

1. A floating apparatus for supporting solar modules, comprising

a modular floatation device operable to float in a water body, the modular floatation device comprising multiple floatation units, connector interfaces and connectors for connecting the connector interfaces respectively to corresponding adjacent floatation units;

a platform for supporting the solar modules; and

linearly adjustable support structures arranged to space the platform from the modular floatation device, each support structure being independently operable to adjust a respective relative distance between the platform and the modular floatation device,

wherein each linearly adjustable support structure is attached to a respective one of the connector interfaces.

2. A floating apparatus according to claim 1, wherein the connectors include connector plates that are disposed on an exterior surface of the floatation units and the connecter interfaces.

3. A floating apparatus according to claim 2, wherein the connector plates include grooved fittings.

4. A floating apparatus according to claim 2 or 3, wherein the connector plates are disposed on top of adjacent floatation units, and the corresponding connector interface.

5. A floating apparatus according to any one of claims 2 to 4, wherein the connector includes connector strings that are partially embedded within the floatation units.

6. A floating apparatus according to claim 2 or 3, wherein the connector plates are disposed between adjacent floatation units.

7. A floating apparatus according to any preceding claim, wherein the modular floatation device is donut shaped.

8. A floating apparatus according to any preceding claim, wherein the platform includes grooves configured to receive the solar modules within the grooves.

9. A floating apparatus according to claim 8, wherein the platform further includes support hooks disposed within the grooves.

10. A floating apparatus according to any preceding claim, wherein the platform is coated with a reflective material made of polytetrafluoroethylene.

11. A floating apparatus according to any preceding claim, wherein each support structure includes an adjustable column, and wherein an end of the adjustable column is attached to the platform, and an opposing end of the adjustable column is attached to a respective connector interface of the modular floatation device.

12. A floating apparatus according to claim 11, wherein each adjustable column includes a lifting mechanism for adjusting the respective relative distance between the platform and the modular floatation device.

13. A floating apparatus according to claim 12, wherein the lifting mechanism is hydraulic powered.

14. A floating apparatus according to any one of claims 11 to 13, wherein each adjustable column further includes a damping mechanism.

15. A floating apparatus according to claim 14, wherein the damping mechanism is a mechanical shock absorber, a hydraulic shock absorber or a combination of the mechanical shock absorber and the hydraulic shock absorber.

16. A floating apparatus according to any preceding claim, further comprising motion sensors for detecting wave motion, wind direction, or ship movement.

17. A floating apparatus according to any preceding claim, further comprising light sensors for detecting solar irradiation.

18. A floating apparatus according to claim 16 or 17, further comprising a control unit configured to receive information from the sensors, and to independently operate each support structure to adjust a respective relative distance between the platform and the modular floatation device based on the information received.

19. A floating apparatus according to any preceding claim, further comprising an energy storage device for storing electrical energy produced by the solar modules.

20. A floating apparatus according to any preceding claim, further comprising solar modules.

21. A method of operating a floating apparatus for supporting solar modules, the floating apparatus including a modular floatation device operable to float in a water body, the modular floatation device comprising multiple floatation units, connector interfaces and connectors for connecting the connector interfaces respectively to corresponding adjacent floatation units, a platform for supporting the solar modules, and linearly adjustable support structures arranged to space the platform from the modular floatation device, each linearly adjustable support structure is attached a respective one of the connector interfaces, the method comprising independently operating each support structure to adjust a respective relative distance between the platform and the modular floatation device.