CLAIMS

1. A floating solar system comprising:

a grid comprising:

a plurality of rod-cables, at least some of the rod-cables comprising fiber reinforced polymer,

a plurality of connector clamps to couple the plurality of rod-cables, to form the grid, wherein the fiber reinforced polymer provides flexibility to the grid, the grid providing a support structure;

a plurality of solar floats to provide buoyancy, each solar float coupled to the grid, the plurality of solar floats not providing structural support;

a plurality of frames attached to the plurality of solar floats, the frames designed to support solar panels, wherein a solar panel is designed to provide shade for a corresponding solar float.

2. The floating solar system of claim 1, wherein:

the plurality of rod-cables comprise:

a first plurality of fiber reinforced polymer (FRP) rods extending in a first direction; and

a second plurality of fiber reinforced polymer rods extending in a second direction perpendicular to the first direction; and

the plurality of connector clamps comprise clamps at intersections of the FRP rods in the first direction and the FRP rods in the second direction.

3. The floating solar system of claim 2, further comprising:

a removeable walkway designed to be supported by the grid and the clamps, the removable walkway configured to be placed temporarily to service the floating solar system, and removed when not needed.

4. The floating solar system of claim 1, further comprising:

a solar float including:

a plastic body having a top and a bottom;

a first set of grooves in the top of the solar float into which rod-cables of the grid fit;

a second set of grooves in the bottom of the solar float into which the frames for the solar panel fit;

clamps to attach the frames to the grid.

5. The floating solar system of claim 1, further comprising:

a solar float being an azimuth tracking solar float comprising:

an outside frame to provide buoyancy, the outside frame coupled to the grid at a plurality of points;

a central float, rotatably positioned within the outside frame, such that the central float supports the solar panel, and is configured to be rotated to follow sun beams.

6. The floating solar system of claim 5, wherein the outside frame comprises an outside float.

7. The floating solar system of claim 6, wherein the central float and the outside frame are made from materials that have a low coefficient of friction with each other, to provide bearing surfaces.

8. The floating solar system of claim 1, further comprising:

the plurality of solar panels comprising bifacial solar panels; and

an albedo plane of white material affixed to the grid to reflect light to the bifacial solar panels.

9. The floating solar system of claim 1, further comprising:

reinforcing cables for the grid, the reinforcing cables comprising steel cables in parallel with a subset of the rod-cables.

10. The floating solar system of claim 1, further comprising:

a plurality of elevating floats, coupled to the grid;

the plurality of frames to support a plurality of solar panels, each frame coupled to an elevating float; and

a plurality of solar panels supported by two frames on the elevating float and the plurality of solar floats, such that the plurality of solar panels have a low elevation.

11. The floating solar system of claim 10, wherein the elevating float comprises a capped irrigation pipe.

12. The floating solar system of claim 10, further comprising:

an arrangement alternating an elevating float and a solar float, such that a solar panel extends between the frames on the elevating float and the frames on the solar float.

13. The floating solar system of claim 10, further comprising:

a solar float and a walkway float suspended above a water level by the elevating float.

14. The floating solar system of claim 10, further comprising:

when the elevating float is an irrigation pipe, a smaller diameter pipe filled with water in the elevating float extending along the irrigation pipe to provide a stable ballast.

15. The floating solar system of claim 1, further comprising:

module clamps at ends of the frames, to receive the solar panel, wherein tightening the module clamp to the solar panel also constricts the clamp to the frame, and the module clamp utilizes a single bolt to clamp the module and constrict the frame.

16. A floating solar system comprising:

a first plurality of rod-cables in a first direction;

a second plurality of rod-cables in a second direction, perpendicular to the first direction;

the first plurality of rod-cables rigidly coupled to the second plurality of rod-cables at a plurality of intersection-points, forming a regular grid, wherein the grid does not include any hinged elements, and the rod-cables provide flexibility;

a plurality of solar floats to provide buoyancy, each solar float coupled to two parallel rod-cables of the grid, the plurality of solar floats not providing structural support; and

a plurality of frames designed to support a plurality of solar panels, each solar float having two frames coupled to it to support a solar panel, each solar panel providing shade for a corresponding solar float.

17. The floating solar system of claim 16, wherein the rod-cables comprise one or more of: fiber reinforced polymer rods, fiber reinforced polymer rebar, and steel cable.

18. The floating solar system of claim 16, wherein the rod-cables are coupled to each other using a clamp comprising two disks, each disk having a groove into which a rod-cable is fit, and a U-bolt coupling the two disks.

19. The floating solar system of claim 16, wherein the rod-cables are threaded, and the threading enables secure attachment of rod-cables to each other.

20. A floating solar system comprising:

an array comprising:

a first plurality of rod-cables in a first direction;

a second plurality of rod-cables in a second direction, perpendicular to the first direction; and

a plurality of connector clamps coupling the first plurality of rod-cables to the second plurality of rod-cables at a plurality of intersection-points, the first plurality of rod-cables and the second plurality of rod-

cables forming a regular grid, wherein the rod-cables provide flexibility to address wave motion;

wherein the floating solar system comprises one or more arrays, and arrays are coupled via hinged elements;

a plurality of solar floats to provide buoyancy, each solar float coupled to two parallel rod-cables of the grid, the plurality of solar floats not providing structural support, the solar floats having a groove into which the rod-cables are fitted;

frames designed to support solar panels coupled to one or more of the plurality of solar floats.

21. The floating solar system of claim 20, further comprising:

solar module clamps at ends of the frames, the solar module clamps using a single bolt to clamp the solar panels and the frames, the frames fitting into grooves in the solar floats, and clamped to the rod-cables of the solar float.