CLAIMS

1. A solar panel assembly comprising:

a mounting post;

at least three triangular shaped panels, each triangular shaped panel comprising a solar panel responsive to a first spectrum of light and transparent to a second spectrum of light; and

at least three hinges, wherein for each triangular shaped panel, an associated hinge connects the triangular shaped panel to the mounting post,

wherein the at least three triangular shaped panels are configured to move between a flat configuration and an inverted pyramid configuration.

2. The solar panel assembly of claim 1, wherein the hinge is one of: a ball and socket hinge and a living hinge.

3. The solar panel assembly of claim 1, wherein each triangular shaped panel is configured to be bonded or snap fit into a pyramidal shaped cavity.

4. The solar panel assembly of claim 1, wherein each triangular shaped panel is one of: single sided and bifacial.

5. The solar panel assembly of claim 1, wherein the second spectrum of light is within a visible spectrum of light.

6. The solar panel assembly of claim 1, wherein each triangular shaped panel comprises nanowires forming contacts throughout and along edges of the triangular shaped panel.

7. The solar panel assembly of claim 6, wherein nanowires comprise at least one of: graphene and a superconductive material.

8. The solar panel assembly of claim 6, wherein the nanowires and the contacts are transparent.

9. The solar panel assembly of claim 1, wherein each triangular shaped panel comprises a geometric pattern of contacts.

10. The solar panel assembly of claim 9, wherein the geometric pattern of contacts is a honeycomb pattern.

11. The solar panel assembly of claim 1, wherein the mounting post comprises wiring layers providing a conductive path.

12. The solar panel assembly of claim 1, wherein the at least three hinges are ball and socket hinges having a socket connector and a ball connector, and the mounting post comprises the socket connectors.

13. The solar panel assembly of claim 1, wherein the at least three triangular shaped panels form a first solar panel layer, and the solar panel assembly further comprising at least one additional solar panel layer, each of the at least one additional solar panel layer being responsive to a spectrum of light.

14. The solar panel assembly of claim 13, wherein each solar panel layer is responsive to a different spectrum of light.

15. The solar panel assembly of claim 13, wherein the mounting post comprises a plurality of slots configured to hold individual solar panels of the at least one additional solar panel layer.

16. The solar panel assembly of claim 13, wherein the first solar panel layer and the at least one additional solar panel layer are one of: flat and curved.

17. The solar panel assembly of claim 13, wherein the first solar panel layer and the at least one additional solar panel layer are relatively parallel.

18. The solar panel assembly of claim 13, wherein the first solar panel layer and the at least one additional solar panel layer are staggered and offset to each other.

19. The solar panel assembly of claim 1, wherein the inverted pyramid configuration defines a footprint, wherein the footprint is one of: a regular polygon, an irregular polygon, a diamond or a rhombus.

20. The solar panel assembly of claim 1, wherein the at least three triangular shaped panels are one of: even or uneven with respect to each other.

21. The solar panel assembly of claim 1, wherein the at least three triangular shaped panels comprise four triangular shaped panels, and the inverted pyramid configuration defines one of: a square footprint and a diamond shaped footprint.

22. The solar panel assembly of claim 1, wherein the mounting post comprises a reflective cap.

23. A wall section comprising:

a shell defining a plurality of pyramidal shapes, wherein each pyramidal shape comprises at least three triangular sides; and

at least one solar panel assembly as in claim 1 disposed in at least one of the plurality of pyramidal shapes,

wherein the three triangular sides of each pyramidal shape define a base, and an angle of the at least three triangular sides with respect to the base range between 5° and 85°.

24. A wall section of claim 23, further comprising a luminescent layer on the shell within the plurality of pyramidal shapes.

25. A wall section of claim 24, wherein the luminescent layer comprises at least one of: electroluminescent paint, electroluminescent tape, an array of light-emitting diodes and a ribbon of light-emitting diodes.

26. A wall section of claim 23, further comprising a reflective layer on the shell within the plurality of pyramidal shapes.

27. A wall section of claim 23, further comprising at least one lens enclosing the plurality of pyramidal shapes.

28. A wall section of claim 27, wherein the at least one lens comprises one of: a flat transparent surface, a lenticular lens and a Fresnel lens.

29. A wall section of claim 27, wherein the at least one lens comprises at least one dimple on an external surface.

30. A solar panel assembly comprising:

a mounting post;

at least three triangular shaped panels, each triangular shaped panel comprising a solar panel responsive to a first spectrum of light and transparent to a second spectrum of light; and

an energy storage component,

wherein the energy storage component and the at least three triangular shaped panels define an inverted pyramid configuration, the energy storage component in a first portion of the inverted pyramid configuration and the at least three triangular shaped panels in a second, exterior facing portion of the inverted pyramid configuration.

31. The solar panel assembly of claim 30, wherein the energy storage component comprises at least one of: a super-capacitor, a capacitor and a battery.

32. The solar panel assembly of claim 30, wherein the at least three triangular shaped panels are configured to provide energy to the energy storage component.