multi-junction cell, wherein the multi-junction cell comprises at least one of an inverted cell, an upright cell, a lattice-mismatched cell, a lattice-matched cell, and a cell comprising Group III-V semiconductor materials.

48. A power system of Claim 1, further comprising

an output power conditioner operably coupled to the photovoltaic power converter; and

an output power terminal operably coupled to the output power conditioner.

49. The power system of Claim 1, further comprising an inverter.

50. The power system of claim 1, further comprising an energy storage device.

51. The power system of claim 50, wherein a portion of power output from the output power terminal is directed to the energy storage device.

52. The power system of claim 50, wherein a portion of power output from the output power terminal is directed to a component of the power generation system.

53. The power generation system of claim 50, wherein a portion of power output from the output power terminal is directed to the plurality of electrodes.

54. The power generation system of claim 50, wherein a portion of power output from the output power terminal is directed to an external load.

55. The power generation system of claim 50, wherein a portion of power output from the output power terminal is directed to a power grid.