

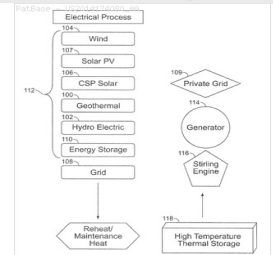
1) Family number: 56489638 (US2014174080A)

HYBRID TRIGENERATION SYSTEM BASED MICROGRID COMBINED COOLING, HEAT AND POWER PROVIDING HEATING, COOLING, ELECTRICAL GENERATION AND ENERGY STORAGE USING AN INTEGRATED AUTOMATION SYSTEM FOR MONITOR, ANALYSIS AND CONTROL

Abstract: Source: US2014174080A Provided is a consumer to industrial scale energy trigeneration process based microgrid combined cooling, heat and power. The present invention includes conversion, processing, extraction and/or storage systems for electrical, chemical and thermal energy. The invention provides a quintessential renewable energy ecosystem incorporating vital energy generation, thermal heating and cooling processes with integrated components installed to encompass a distributed renewable energy generation, energy storage and integrated automation system. The automation system of the invention provides the ability to view, monitor, analyze, control and interact with system components.

Probable Assignee: FRIESTH KEVIN LEE

Earliest Publication Date: 20140522



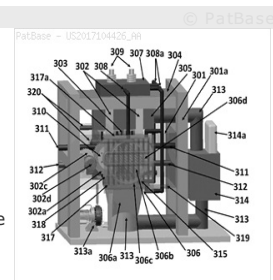
2) Family number: 60956126 (US2017104426A)

ELECTRICAL POWER GENERATION SYSTEMS AND METHODS REGARDING SAME

Abstract: Source: US2017104426A A solid or liquid fuel to plasma to electricity power source that provides at least one of electrical and thermal power comprising (i) at least one reaction cell for the catalysis of atomic hydrogen to form hydrides, (ii) a chemical fuel mixture comprising at least two components chosen from: a source of H₂O catalyst or H₂O catalyst; a source of atomic hydrogen or atomic hydrogen; reactants to form the source of H₂O catalyst or H₂O catalyst and a source of atomic hydrogen; one or more reactants to initiate the catalysis of atomic hydrogen; and a material to cause the fuel to be highly conductive, (iii) a fuel injection system such as a railgun shot injector, (iv) at least one set of electrodes that confine the fuel and an electrical power source that provides repetitive short bursts of low-voltage, high-current electrical energy to initiate rapid kinetics of the hydride reaction and an energy gain due to forming hydrides to form a brilliant-light emitting plasma, (v) a product recovery system such as at least one of an augmented plasma railgun recovery system and a gravity recovery system (vi) a fuel pelletizer or shot maker comprising a source of hydrogen and a source of H₂O, a dropper and a water bath to form fuel pellets or shot, and an agitator to feed shot into the injector, and (vii) a power converter capable of converting the high-power light output of the cell into electricity such as a concentrated solar power device comprising a plurality of ultraviolet (UV) photoelectric cells or a plurality of photoelectric cells, and a UV window.

Probable Assignee: BRILLIANT LIGHT POWER INC

Earliest Publication Date: 20151203



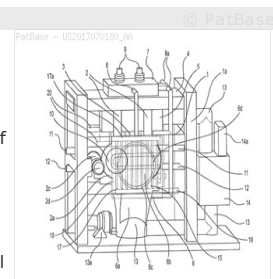
3) Family number: 60335827 (US2017070180A)

PHOTOVOLTAIC POWER GENERATION SYSTEMS AND METHODS REGARDING SAME

Abstract: Source: US2017070180A A solid fuel power source that provides at least one of electrical and thermal power comprising (i) at least one reaction, cell for the catalysis of atomic hydrogen to form hydrides, (ii) a chemical fuel mixture comprising at least two components chosen from: a source of H₂O catalyst or H₂O catalyst; a source of atomic hydrogen or atomic hydrogen; reactants to form the source of H₂O catalyst or H₂O catalyst and a source of atomic hydrogen or atomic hydrogen; one or more reactants to initiate the catalysis of atomic hydrogen; and a material to cause the fuel to be highly conductive, (iii) at least one set of electrodes that confine the fuel and an electrical power source that provides a short burst of low-voltage, high-current electrical energy to initiate rapid kinetics of the hydride reaction and an energy gain due to forming hydrides, (iv) a product recovery systems such as a vapor condenser, (v) a reloading system, (vi) at least one of hydration, thermal, chemical, and electrochemical systems to regenerate the fuel from the reaction products, (vii) a heat sink that accepts the heat from the power-producing reactions, (viii) a photovoltaic power converter comprising at least one of a concentrated solar power device, and at least one triple-junction photovoltaic cell, monocrystalline cell, polycrystalline cell, amorphous cell, string/ribbon silicon cell, multi-junction cell, homojunction cell, heterojunction cell, p-i-n device, thin-film cells, dye-sensitized cell, and an organic photovoltaic cell, and an antireflection coating, an optical impedance matching coating, and a protective coating.

Probable Assignee: BRILLIANT LIGHT POWER INC

Earliest Publication Date: 20150911

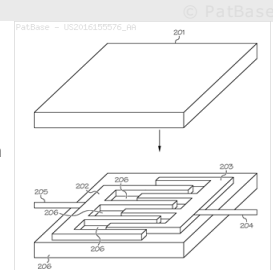


4) Family number: 58293807 (US2016155576A)

DENSE ENERGY ULTRA-CAPACITOR PREFORM, THIN FILM, MODULE AND FABRICATION METHODS THEREFOR

Abstract: Source: US2016155576A A Dense Energy Ultracapacitor DEUC preform, thin film, and module and methods of fabrication therefor, are provided. The DEUC thin film includes: a multilayer polymer thin film (2210) including a plurality of matched polymer layers (2215) having DEUC structural features resulting from drawing, by a draw process, and/or stretching, of a multilayer polymer DEUC preform (2201) having size, shape, and an arrangement of matched polymer layers (2205), where the multilayer polymer thin film (2210) having DEUC structural features in at least one dimension proportionally reduced in comparison to the same features in the Preform (2201). The multilayer polymer thin film includes negative and positive electrodes (903) made from conducting polymer and spaced apart by suspended particle high dielectric energy storage media (904) including high dielectric nano and/or micro sized particles (901, 902) suspended in a binder (904) including at least one of a polymer, a copolymer, and a terpolymer. All the layers (903, 904) are bound and unified together.

Probable Assignee: BLUE HORIZON INNOVATIONS LLC



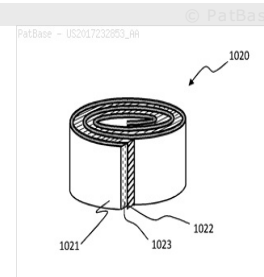
5) Family number: 66638894 (US2017232853A)

ELECTRIC VEHICLE POWERED BY CAPACITIVE ENERGY STORAGE MODULES

Abstract: Source: US2017232853A A capacitive energy storage module (CESM) is provided under a floor panel of an electric vehicle. The CESM is a pack of capacitive energy storage cells (CESCs) which are themselves one or more capacitive energy storage devices (CESDs) comprising one or more metacapacitors. The CESM is arranged between a pair of right and left side members. The CESM is provided with a CESM case. The CESM case includes a tray member and cover member. Electric components are contained in the CESM case. Beam members made of metal are attached to the tray member. Both end portions of these beam members are supported by the side members. The tray member includes a resin and insert members made of metal provided inside the resin. The insert members include metal plates arranged on the front side and rear side of the electric components.

Probable Assignee: CAPACITOR SCIENCES INC

Earliest Publication Date: 20170817



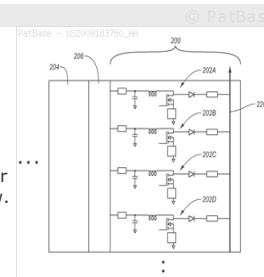
6) Family number: 43540719 (US2009183760A)

REDUNDANT ELECTRICAL ARCHITECTURE FOR PHOTOVOLTAIC MODULES

Abstract: Source: US2009183760A One example embodiment includes a PV module comprising a conductive backsheet, a substantially transparent front plate, a plurality of PV cells, a plurality of conductive spacers, and a power conversion device. The PV cells can be disposed between the conductive backsheet and the front plate and can be arranged in a plurality of rows. The PV cells within each row can be connected to each other in parallel and the rows can be connected in series. The PV cells can be interconnected between the conductive spacers. The power conversion device can be redundantly connected to the PV cells via a last conductive spacer connected to a last row. The power conversion device can substantially maintain a maximum peak power of the PV module and can convert a lower voltage collectively generated by the PV cells to a predetermined stepped up voltage greater than or equal to 12 volts.

Probable Assignee: TENKSOLAR INC

Earliest Publication Date: 20090723



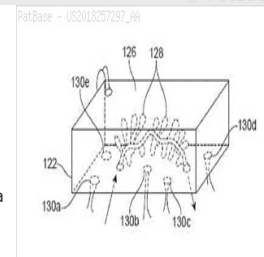
7) Family number: 71114468 (US2018257297A)

METHODS AND SYSTEMS FOR PRINTING BIOLOGICAL MATERIAL

Abstract: Source: US2018257297A The present disclosure provides methods and systems for printing a three-dimensional (3D) material. In some examples, a method for printing a 3D biological material comprises providing a media chamber comprising a medium comprising (i) a plurality of cells and (ii) one or more polymer precursors. Next, at least one energy beam may be directed to the medium in the media chamber along at least one energy beam path that is patterned into a 3D projection wherein the x, y, and z dimensions may be simultaneously accessed in accordance with computer instructions for printing the 3D biological material in computer memory, to form at least a portion of the 3D biological material comprising (i) at least a subset of the plurality of cells, and (ii) a polymer formed from the one or more polymer precursors.

Probable Assignee: PRELLIS BIOLOGICS INC

Earliest Publication Date: 20180913



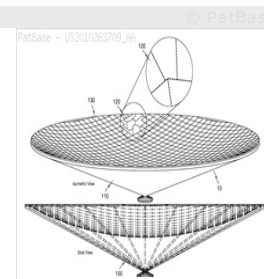
8) Family number: 47304576 (US2010263709A)

SYSTEMS FOR COST-EFFECTIVE CONCENTRATION AND UTILIZATION OF SOLAR ENERGY

Abstract: Source: US2010263709A The present invention is primarily directed to cost-effective systems for using large reflective elements that track the sun on two axes to concentrate solar energy onto a receiver that can convert the sun's optical energy to a form usable for extensive displacement of combustion of fossil fuels. The structures of the tracker frame, tracking mechanism and tracker supports are co-optimized with the optical elements and the receiver for high efficiency, low cost, and ease of assembly, making moderate and large-scale implementations cost-competitive with fossil fuels for peak power, and, with suitable storage, for base-load power and dispatchable peaking power in sunny locations. Improvement to small-tracker two-axis systems and one-axis tracking systems that focus in two dimensions are also included, as are improvements in systems for space-based solar power.

Probable Assignee: GESTION TECHNOCAP INC

Earliest Publication Date: 20101021



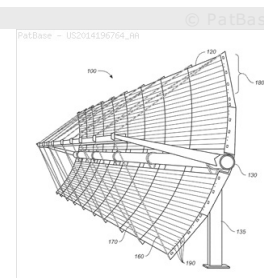
9) Family number: 56896408 (US2014196764A)

CONCENTRATING SOLAR ENERGY COLLECTOR

Abstract: Source: US2014196764A Systems, methods, and apparatus by which solar energy may be collected to provide electricity, heat, or a combination of electricity and heat are disclosed herein.

Probable Assignee: SUNPOWER CORP

Earliest Publication Date: 20140717



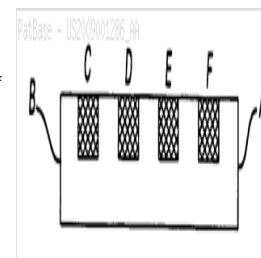
10) Family number: 33975526 (US2009001286A)

INTEGRATIVE AND REAL-TIME RADIATION MEASUREMENT METHODS AND SYSTEMS

Abstract: Source: US2009001286A A method of determining the radiation type and energy distribution of a radiation source that outputs radiation. The method including providing a plurality of detector materials and exposing the plurality of detector materials to the radiation. Each of the plurality of detector materials stores a signal in response to being exposed to the radiation. The signals are representative of the radiation. The plurality of detector materials is stimulated to output the signals as measured signals. These measured signals are used to determine the radiation type and energy distribution of the radiation.

Probable Assignee: THE UNIV OF MICHIGAN

Earliest Publication Date: 20061207



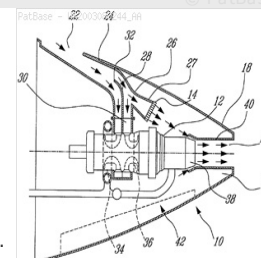
11) Family number: 30046563 (US2003080244A)

PASSIVE COOLING SYSTEM FOR AUXILIARY POWER UNIT INSTALLATION

Abstract: Source: US2003080244A A passive cooling system for an auxiliary power unit (APU) installation on an aircraft is provided. The system is for an auxiliary power unit having at least a compressor portion of a gas turbine engine and an oil cooler contained separately within a nacelle. The system includes the auxiliary power unit housed within the nacelle of the aircraft, an engine exhaust opening defined in the aft portion of the nacelle and communicating with the gas turbine engine, at least a first air inlet duct communicating with a second opening defined in said nacelle and with said compressor portion and the oil cooler is located within a second duct communicating with an opening other than the engine exhaust opening of said nacelle and with the engine exhaust opening. Exterior cooling air and engine exhaust ejected through said engine exhaust opening entrain cooling air through said second duct to said oil cooler, and thus provide engine oil cooling. An exhaust eductor is also provided.

Probable Assignee: PRATT AND WHITNEY CANADA CORP

Earliest Publication Date: 20030501



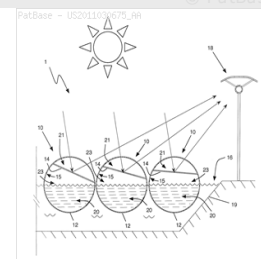
12) Family number: 48264041 (US2011030675A)

SYSTEMS AND METHODS OF GENERATING ENERGY FROM SOLAR RADIATION

Abstract: Source: US2011030675A A solar reflector assembly is provided for generating energy from solar radiation. The solar reflector assembly is configured to be deployed on a supporting body of liquid and to reflect solar radiation to a solar collector. A solar reflector assembly comprises an inflatable elongated tube having an upper portion formed at least partially of flexible material and a lower ballast portion formed at least partially of flexible material. A reflective sheet is coupled to a wall of the tube to reflect solar radiation. The elongated tube has an axis of rotation oriented generally parallel to a surface of a supporting body of liquid.

Probable Assignee: COMBINED POWER COOPERATIVE

Earliest Publication Date: 20110210



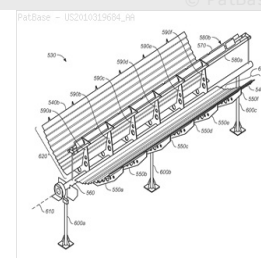
13) Family number: 47721119 (US2010319684A)

CONCENTRATING SOLAR PHOTOVOLTAIC-THERMAL SYSTEM

Abstract: Source: US2010319684A Systems, methods, and apparatus by which solar energy may be collected to provide heat, electricity, or a combination of heat and electricity are disclosed herein.

Probable Assignee: SUNPOWER CORP

Earliest Publication Date: 20101202



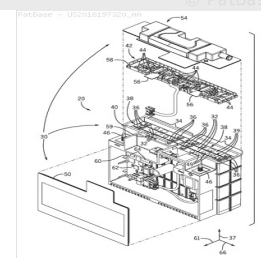
14) Family number: 62821941 (US2016197320A)

SNAP-IN EXTENSIONS AND GUIDE WALLS FOR BUS BAR BRIDGES OF A BATTERY MODULE

Abstract: Source: US2016197320A The present disclosure includes a battery module having a group of electrically interconnected electrochemical cells, a battery module terminal configured to be coupled to a load for powering the load, and an electrical path extending between the group of electrically interconnected electrochemical cells and the battery module terminal, where the electrical path includes a bus bar bridge. The battery module also includes a housing, where the group of electrically interconnected electrochemical cells is disposed within the housing, and the housing includes a pair of extensions positioned along sides of the bus bar bridge and configured to retain the bus bar bridge and to block movement of the bus bar bridge in at least one direction.

Probable Assignee: JOHNSON CONTROLS TECHNOLOGY CO

Earliest Publication Date: 20160707



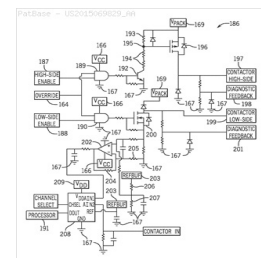
15) Family number: 58688995 (US2015069829A)

SYSTEMS, METHODS, AND DEVICES FOR PRE-CHARGE CONTROL OF A BATTERY MODULE

Abstract: Source: US2015069829A The present subject matter relates to a battery module for use in a vehicle. The battery module may include a housing, a plurality of battery cells disposed within the housing, and solid state pre-charge control circuitry that pre-charges a direct current (DC) bus that may be coupled between the battery module and an electronic component of the vehicle. Furthermore, the solid state pre-charge control circuitry may include solid state electronic components as well as passive electronic components.

Probable Assignee: JOHNSON CONTROLS TECHNOLOGY CO

Earliest Publication Date: 20150312



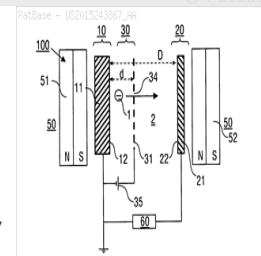
16) Family number: 55716346 (US2015243867A)

DEVICE AND METHOD FOR THERMOELECTRONIC ENERGY CONVERSION

Abstract: Source: US2015243867A A thermoelectronic energy converter device (100) comprises an electron emitter (11) being adapted for a temperature-dependent release of electrons (1), an electron collector (21) being adapted for collecting the electrons (1), wherein the electron collector (21) is spaced from the electron emitter (11) by an evacuated gap (2), a gate electrode (31) being arranged between the electron emitter (11) and the electron collector (21) for subjecting the electrons (1) in the gap (2) to an accelerating electric potential, wherein the gate electrode (31) has a plurality of electrode openings (34) being arranged for transmitting electrons (1) miming from the electron emitter (11) to the electron collector (21), and a magnetic field device (50) being arranged for creating a magnetic field with magnetic field lines extending between the electron emitter and the electron collector (11, 21), wherein the magnetic field device (50) is arranged such that at least a portion of the magnetic field lines pass through the electrode openings (34). Furthermore, a method of converting energy using the thermoelectronic energy converter device (100) is described.

Probable Assignee: AUGSBURG UNIV

Earliest Publication Date: 20140206



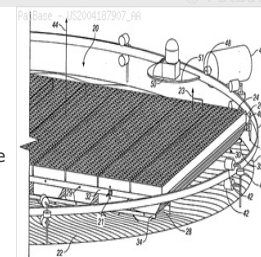
17) Family number: 28490438 (US2004187907A)

METHOD AND APPARATUS FOR SOLAR ENERGY COLLECTION

Abstract: Source: US2004187907A A pontoon structure is described that may be floated on a body of coolant liquid, together with others in an array. The entire array may be aligned with the sun in an azimuth direction, and each pontoon may be rotated to align it with the sun elevation. A solar energy conversion target, typically a photovoltaic conversion device, may be mounted on a portion of the pontoon structure that remains below the coolant level over a wide range of sun elevations. An asymmetric focus lens may be used to direct light entering the pontoon toward the conversion target. A lens to improve the uniformity of light directed to a conversion target is also described that is useful with pontoons, and can be configured to improve target illumination uniformity, particularly in the presence of partial shadowing, by directing light uniformly toward the target from each of a plurality of subregions.

Probable Assignee: BURKHARD BOGENSBERGER

Earliest Publication Date: 20030417



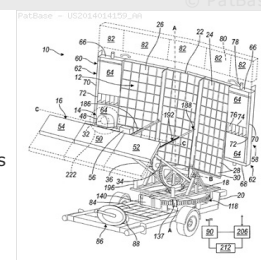
18) Family number: 54512048 (US2014014159A)

SOLAR ENERGY COLLECTOR

Abstract: Source: US2014014159A A solar collector is provided with a frame that is coupled to a based and configured to rotate about a vertical axis. A main panel assembly is attached to the frame and pivotal about a horizontal axis relative to the frame. The main panel assembly receives sunlight and converts the sunlight into electrical energy. The main panel assembly includes a central panel, and a pair of pivotal inner side panels, where each inner side panel is attached to the central panel. A pair of outer side panels attached to the inner side panels is also provided. Each outer side panel includes photo-voltaic (PV) panels, and a panel surround frame for retaining the PV panels. Each panel surround frame has a horizontal channel member, a pair of upright channel members, and a channel bracket, defining a perimeter. A peripheral edge of each PV panel is captured within the channel members.

Probable Assignee: DIVERSIFIED SOLAR SYSTEMS LLC

Earliest Publication Date: 20130808



19) Family number: 50015359 (US2011292560A)

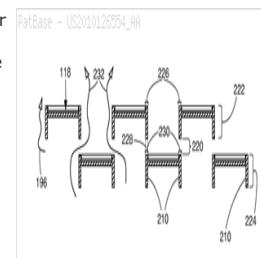
ELECTROHYDRODYNAMIC FLUID MOVER TECHNIQUES FOR THIN, LOW-PROFILE OR HIGH-ASPECT-RATIO ELECTRONIC DEVICES

Abstract: Source: US2011292560A Surfaces for electromagnetic shielding, retaining electrostatic charge and indeed collecting ion current in EHD fluid mover designs may be formed as or on surfaces of other components and/or structures in an electronic device. In this way, dimensions may be reduced and packing densities increased. In some cases, electrostatically operative portions of an EHD fluid mover are formed as or on surfaces of an enclosure, an EMI shield, a circuit board and/or a heat pipe or spreader. Depending on the role of these electrostatically operative portions, dielectric, resistive and/or ozone robust or catalytic coatings or conditioning may be applied.

Abstract: Source: US2010126554A A solar panel assembly with a first group of spaced-apart solar energy collector modules and a second group of spaced-apart solar energy collector modules. The first and second groups lie in respective parallel planes, which define an air gap therebetween, and are staggered with respect to each other. The staggering of the groups allows for light not harvested by the first row to be harvested by the second row and provides a low dead-space characteristic for the solar panel assembly. The gap between the planes and the space between individual solar energy collector modules of a same group allow for improved heat dissipation in the modules and for the solar panel assembly to offer low resistance to wind.

Probable Assignee: MORGAN SOLAR INC

Earliest Publication Date: 20100311



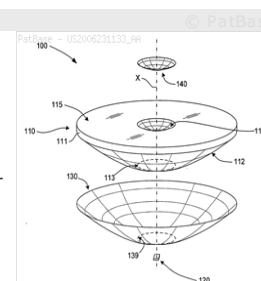
21) Family number: 33511073 (US2006231133A)

CONCENTRATING SOLAR COLLECTOR WITH SOLID OPTICAL ELEMENT

Abstract: Source: US2006231133A A Cassegrain-type concentrating solar collector cell includes primary and secondary mirrors disposed on opposing convex and concave surfaces of a light-transparent (e.g., glass) optical element. Light enters an aperture surrounding the secondary mirror, and is reflected by the primary mirror toward the secondary mirror, which re-reflects the light onto a photovoltaic cell mounted on a central region surrounded by the convex surface. The primary and secondary mirrors are preferably formed as mirror films that are deposited or plated directly onto the optical element. A concentrating solar collector array includes a sheet-like optical panel including multiple optical elements arranged in rows. The photovoltaic cells are mounted directly onto the optical panel, and the primary mirrors of the individual collector cells include metal film segments that are coupled by the photovoltaic cells to facilitate transmission of the generated electrical energy. Bypass diodes are connected in parallel with the photovoltaic cells.

Probable Assignee: PALO ALTO RESEARCH CENTER INC

Earliest Publication Date: 20061019



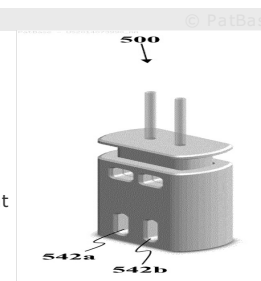
22) Family number: 55977443 (US2014073990A)

SYSTEMS, DEVICES, AND METHODS FOR BODILY FLUID SAMPLE COLLECTION

Abstract: Source: US2014073990A Bodily fluid sample collection systems, devices, and method are provided. The device may comprise a first portion comprising at least a sample collection channel configured to draw the fluid sample into the sample collection channel via a first type of motive force. The sample collection device may include a second portion comprising a sample container for receiving the bodily fluid sample collected in the sample collection channel, the sample container operably engagable to be in fluid communication with the collection channel, whereupon when fluid communication is established, the container provides a second motive force different from the first motive force to move a majority of the bodily fluid sample from the channel into the container.

Probable Assignee: THERANOS IP CO LLC

Earliest Publication Date: 20140313



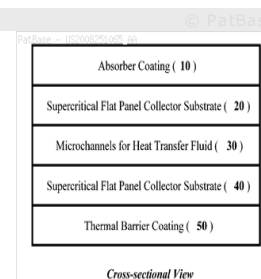
23) Family number: 34300775 (US2008251065A)

SUPERCritical FLAT PANEL COLLECTOR AND METHODS OF USE

Abstract: Source: US2008251065A A high efficiency flat panel collector is disclosed using an integral supercritical heat transfer, and a series of fail-safe mechanisms. Using the preferred configuration with solar concentrators and integral energy conversion devices, including the further preferred utilization of ionic liquids or ionic liquid polymers as the working fluid in the system, achieves optimal total energy efficiency. Strategic use of the flat panel collector can further yield enhanced functionality of mechanical pumps, heat pumps, and expansion energy transformation devices.

Probable Assignee: REXORCE THERMIONICS INC

Earliest Publication Date: 20070315



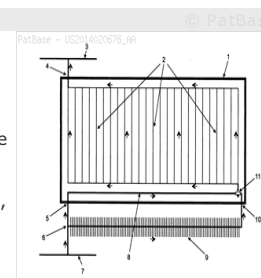
24) Family number: 55662643 (US2014020676A)

OVER-TEMPERATURE PROTECTION FOR FLOWING FLUID SYSTEMS

Abstract: Source: US2014020676A The present invention keeps fluid temperature at a point in a flowing fluid system below a preset limit by providing automatic self-adjusting over-temperature protection that cools the fluid when needed and without requiring a separate cold fluid source. The present invention keeps the temperature of the fluid at a point in the system clipped at a cutoff temperature and prevents overcooling the fluid. When the fluid temperature is below the cutoff temperature, the temperature of the fluid is unchanged as it passes through the apparatus of the present invention. The present invention can operate without electrical power or any power source, can function in any orientation, and works for both unpressurized and pressurized systems. The present invention has application in the areas of solar thermal energy systems, fluid storage tanks, engine oil and coolant systems, transmission oil systems, hydraulic systems, and cutting oil systems, among others.

Probable Assignee: BOX 32598

Earliest Publication Date: 20140123



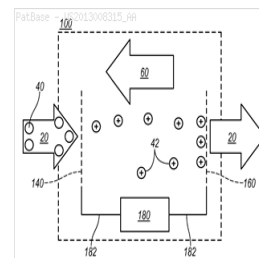
25) Family number: 52672705 (US2013008315A)

SYSTEM AND METHOD FOR ENERGY AND PARTICLE EXTRACTION FROM AN EXHAUST SYSTEM

Abstract: Source: US2013008315A A system for energy and particle extraction from an exhaust stream containing entrained particles, the system including an ionizer, a downstream collector, and an electrical couple. The ionizer is configured to charge the particles within the exhaust stream to a first charge polarity. The downstream collector is disposed downstream from the ionizer within the exhaust stream, and is configured to collect the charged particles. The electrical couple is configured to electrically couple a load between the ionizer and the downstream collector, wherein the load converts energy of the exhaust stream into electric power.

Probable Assignee: ACCIO ENERGY INC

Earliest Publication Date: 20130110



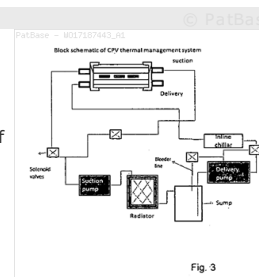
26) Family number: 67350087 (WO17187445A1)

SUN POSITION DETECTOR AND METHOD OF SENSING SUN POSITION

Abstract: A sun position detector assembly comprising: a square base member. a rigid post extending vertically from said base member; a single inner set of square blocks, each of said blocks being of successively decreasing size and equal height to be stacked in telescopic pyramidal shaped order on said post to form a rigid central body of stepped formation; a plurality of LDR's placed on a central-middle position along all the four side and over the exposed base area of each square block, including a single LDR, centrally disposed over the topmost square block; wherein the step formed walls adjacent to the respective LDR's act as a light blocking member for each LDR and thereby provides a differential output based of respective illumination from the exposed sunlight; and wherein the output of LDR's of each side and the output of the centrally disposed LDR are compared and processed for effective calculation of the sun position.

Probable Assignee: REEMA AGARWAL

Earliest Publication Date: 20171027



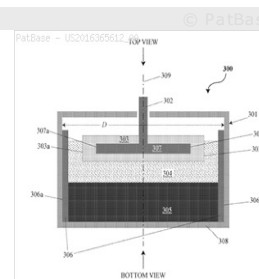
27) Family number: 59144178 (US2016365612A)

THERMAL MANAGEMENT OF LIQUID METAL BATTERIES

Abstract: Source: US2016365612A The present disclosure provides energy storage systems and methods for operating energy storage systems. The systems and methods can flow a thermal management fluid through a structural member, such as a frame, of the energy storage system to maintain the system at an operating temperature, operate the system in an energy efficient manner, extend the operating lifetime of the system, provide emergency operation features and/or enable the system to operate during periods in which it may provide optimum or otherwise enhanced value.

Probable Assignee: AMBRI INC

Earliest Publication Date: 20150507



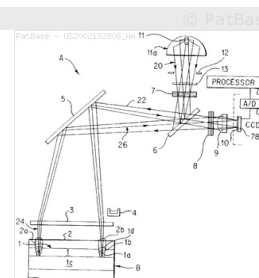
28) Family number: 30063094 (US2002192808A)

INSTRUMENT FOR MONITORING POLYMERASE CHAIN REACTION OF DNA

Abstract: Source: US2002192808A An optical instrument monitors PCR replication of DNA in a reaction apparatus having a temperature cycled block with vials of reaction ingredients including dye that fluoresces in presence of double-stranded DNA. A beam splitter passes an excitation beam to the vials to fluoresce the dye. An emission beam from the dye is passed by the beam splitter to a CCD detector from which a processor computes DNA concentration. A reference strip with a plurality of reference emitters emit reference beams of different intensity, from which the processor selects an optimum emitter for compensating for drift. Exposure time is automatically adjusted for keeping within optimum dynamic ranges of the CCD and processor. A module of the beam splitter and associated optical filters is associated with selected dye, and is replaceable for different dyes.

Probable Assignee: LIFE TECHNOLOGIES CORP

Earliest Publication Date: 19991125



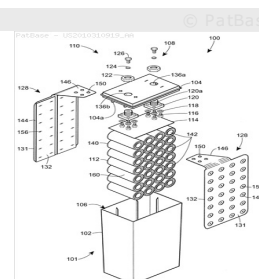
29) Family number: 47808245 (US2010310919A)

LITHIUM ION BATTERY PACK HAVING PASSIVE COOLING

Abstract: Source: US2010310919A A lithium ion battery pack battery pack is disclosed. The battery pack comprises a housing, the housing having a sidewall and a sidewall opening extending there through, a plurality of lithium ion battery cells disposed within the housing, the battery cells having an anode terminal and a cathode terminal, first and second current collectors disposed in the housing, the first and second current collectors electrically engaging respective ones of the anode and the cathode terminals, a metal plate disposed in the sidewall opening adjacent one of the current collectors, and an electrically non-conductive barrier disposed between the adjacent one of the current collectors and the metal plate, wherein the metal plate draws heat from the adjacent one of the current collectors outwardly into the ambient environment.

Probable Assignee: K2 ENERGY SOLUTIONS INC

Earliest Publication Date: 20101209



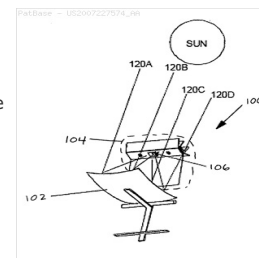
30) Family number: 36079004 (US2007227574A)

TRACKING SOLAR POWER SYSTEM

Abstract: Source: US2007227574A A tracking solar power system is disclosed. The tracking solar power system includes: a solar power substructure and a platform having a first degree of freedom. The solar power substructure is mounted on the platform in a manner such that it has a second degree of freedom relative to the platform. The solar power substructure may include a solar collector and a receiver arranged to receive energy from the solar collector. The receiver may be mounted in a manner that avoids shading of the solar collector during operation. The solar collector may have an area focus at the receiver. The solar power substructure may include a non-concentrating solar power substructure.

Probable Assignee: GREEN VOLTS INC

Earliest Publication Date: 20070920



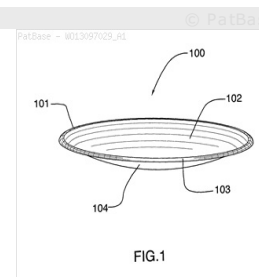
31) Family number: 54257179 (WO13097029A1)

SOLAR COLLECTOR

Abstract: A solar collector array is disclosed. The array has a plurality of thin walled dishes interconnected by unitary webbing. The dishes and the webbing are formed from a single metallic sheet. Each dish is pressed into a symmetric parabolic surface that concentrates incident light to a position in front of the dish.

Probable Assignee: RA INVESTMENT MANAGEMENT SARL

Earliest Publication Date: 20130629



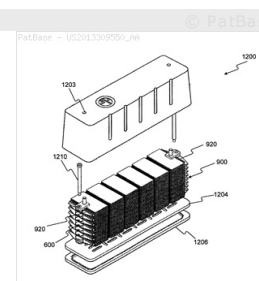
32) Family number: 55189423 (US2013309550A)

LEAD-ACID BATTERY WITH HIGH POWER DENSITY AND ENERGY DENSITY

Abstract: Source: US2013309550A A battery module for an electric vehicle or a hybrid electric vehicle having two or more battery components. An lead-acid electrochemical storage device is provided, comprising a specific power of between about 550 and about 1,900 Watts/kilogram; and a specific energy of between about 25 and about 80 Watt-hours/kilogram.

Probable Assignee: TBP INVESTMENTS LLC

Earliest Publication Date: 20131121



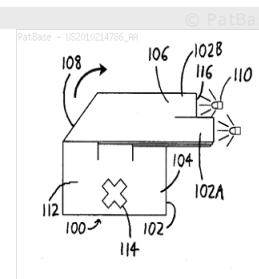
33) Family number: 43144817 (US2010214786A)

LIGHT COUPLING INTO ILLUMINATED FILMS

Abstract: Source: US2010214786A A flexible translucent sheet is folded to have portions of its bounding edge closely situated in overlapping relationship, and these overlapping portions are illuminated by a light source. The illumination is transmitted through the interior of the sheet to any adjacent unfolded area of the sheet, which may bear emission areas which are treated so that the light emits from the sheet at these areas. Preferred versions of the invention have a series of legs cut into one edge of the sheet, and the legs are then bundled in stacked relationship, with a light source providing light input into the bundle.

Probable Assignee: FLEX LIGHTING II LLC

Earliest Publication Date: 20090416



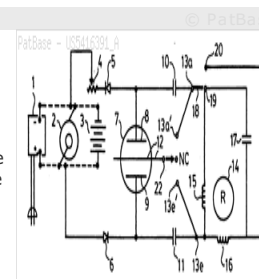
34) Family number: 13274215 (US5416391A)

ELECTROMECHANICAL TRANSDUCTION OF PLASMA PULSES

Abstract: Source: US5416391A A direct current power transducer for driving alternating current devices utilizes a discharge tube connected across a current source, the construction of the tube and characteristics of the source being such as to maintain endogenous pulsed abnormal gas discharge within the tube. The tube is capacitatively coupled to an external load including an alternating current device, typically an electric motor. Electric motors of the asynchronous induction or synchronous types are particularly suitable, but other alternating current devices may be used. By adjustments to the current source, the capacitance in parallel with the discharge tube, and connections to auxiliary electrodes, the pulse repetition frequency of the discharge may be adjusted, thus allowing variable speed control of types of alternating current motor not normally amenable to such control.

Probable Assignee: CORREA ALEXANDRA N YISSUM RESE

Earliest Publication Date: 19940217



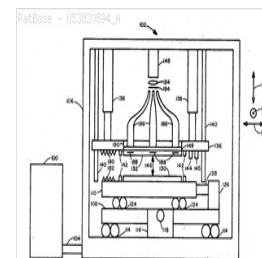
35) Family number: 30467656 (US3820894A)

APPARATUS AND METHOD FOR PRODUCING HIGH REGISTRATION PHOTO MASKS

Abstract: Source: US3820894A A system is provided for producing high registration photo-optical masks. A control system generates signals to a step and repeat contact printing machine that exposes many prints of the master die images on a photographic film, where these prints have a high registration characteristic. Claims, 10 Drawing Figures

Probable Assignee: SAID MICRO COMPUTER INC BY SAI

Earliest Publication Date: 19720713



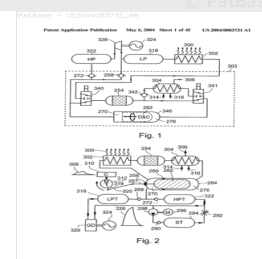
36) Family number: 30546884 (US2004083731A)

UNCOUPLED, THERMAL-COMPRESSOR, GAS-TURBINE ENGINE

Abstract: Source: US2004083731A The invention is for a continuous-combustion, closed-cycle, gas turbine engine with a regenerator and a displacer. It has embodiments that remove heater and cooler interior volumes during gas compression, which enable it to scale well to very large sizes. Low combustion temperatures insure very low emissions. The displacer levitated by an integral gas bearing and small clearance seal and given oscillatory translational motion by electromagnetic forces operates without surface wear. The turbine blades, subjected only to warm gases, are durable and inexpensive. Thus, this engine has a very long, continuous, maintenance-free service life. This gas turbine engine also operates without back work allowing high efficiency for both low and rated output. Pressurized encapsulation permits use of low-cost ceramics for high temperature components. The invention includes a unique monolithic ceramic heater, a compact high-capacity regenerator and a constant-power gas turbine.

Probable Assignee: LASKER GEORGE

Earliest Publication Date: 20040506



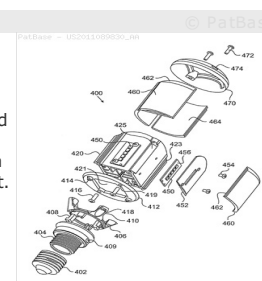
37) Family number: 47407932 (US2011089830A)

HEAT SINKS AND LAMP INCORPORATING SAME

Abstract: Source: US2011089830A A lamp comprising a solid state light emitter, the lamp being an A lamp and providing a wall plug efficiency of at least 90 lumens per watt. Also, a lamp comprising a solid state light emitter and a power supply, the emitter being mounted on a heat dissipation element, the dissipation element being spaced from the power supply. Also, a lamp, comprising a solid state light emitter and a heat dissipation element that has a heat dissipation chamber, whereby an ambient medium can enter the chamber, pass through the chamber, and exit. Also, a lamp, comprising a light emissive housing at least one solid state lighting emitter and a first heat dissipation element. Also, a lamp comprising a heat sink comprising a heat dissipation chamber. Also, a lamp comprising first and second heat dissipation elements. Also, a lamp comprising means for creating flow of ambient fluid.

Probable Assignee: CREE INC

Earliest Publication Date: 20101026



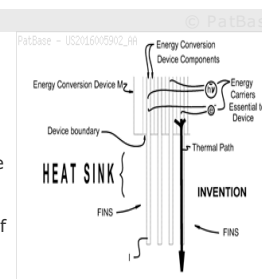
38) Family number: 61319022 (US2016005902A)

DIRECT THERMAL PATH HEAT SINKING USING FINS FORMED FROM ENERGY CONVERSION DEVICE COMPONENTS, INCLUDING SUBCOMPONENTS OF VERTICAL MULTI-JUNCTION PHOTOVOLTAIC RECEIVERS USED FOR HIGH INTENSITY BEAMING AND WIRELESS POWER TRANSMISSION

Abstract: Source: US2016005902A New high energy operating regimes for high intensity energy transfer for beam receiving, signal acquisition, and beam or signal generation for power beaming and wireless power transmission are made possible by new direct thermal pathways for heat sinking, where an energy conversion device comprises a plurality of fins [1] originating from inside the energy conversion device; [2] formed from an energy conversion device component; and where those fins [3] individually support traffic in energy carriers essential to the function of the energy conversion device. This allows high energy thermal interfacing and high intensity energy conversion, such as for receiving and transducing extremely high intensity light shined onto a small surface semiconductor device such as a vertical multi-junction photovoltaic receiver. This allows high intensity energy transfer for beam receiving, signal acquisition, and beam or signal generation for high intensity power beaming and wireless power transmission.

Probable Assignee: MH SOLAR CO LTD

Earliest Publication Date: 20160107



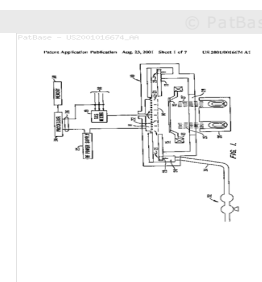
39) Family number: 28109457 (US2001016674A)

METHOD AND APPARATUS FOR CLEANING A VACUUM LINE IN A CVD SYSTEM

Abstract: Source: US2001016674A An apparatus for preventing particulate matter and residue build-up within a vacuum exhaust line of a semiconductor processing device. The apparatus uses RF energy to form excite the constituents of particulate matter exhausted from a semiconductor processing chamber into a plasma state such that the constituents react to form gaseous products that may be pumped through the vacuum line. The apparatus may include a collection chamber structured and arranged to collect particulate matter flowing through the apparatus and inhibiting egress of the particulate matter from the apparatus. The apparatus may further include an electrostatic collector to enhance particle collection in the collection chamber and to further inhibit egress of the particulate matter.

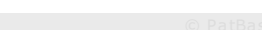
Probable Assignee: APPLIED MATERIALS INC

Earliest Publication Date: 19970409



40) Family number: 33153206 (US2006167531A)

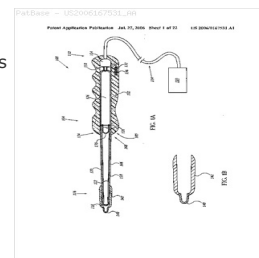
OPTICAL THERAPIES AND DEVICES



Abstract: Source: US2006167531A An optical therapy device for providing therapeutic light to a person's nasal cavity includes a body and at least one UV light source in or on the body. A distal end of the body is configured to be inserted into the person's nasal cavity. The body can be configured to be hand-held. The optical therapy device is configured such that the UV light source emits a dose of UV light toward tissue in the patient's nasal cavity.

Probable Assignee: VALAM CORP

Earliest Publication Date: 20060727



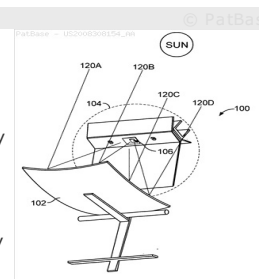
41) Family number: 42672018 (US2008308154A)

REFLECTIVE SECONDARY OPTIC FOR CONCENTRATED PHOTOVOLTAIC SYSTEMS

Abstract: Source: US2008308154A A solar power system is disclosed. The solar power system includes: a solar energy receiving solar collector; a reflective secondary optical element comprising one or more sheets, wherein the one or more sheets are arranged to form a hollow structure having an interior surface, an exterior surface, an entry aperture, and an exit aperture, such that at least a portion of the interior of the hollow structure is reflective and wherein the hollow structure is positioned to receive energy from the solar collector through the entry aperture, reflect the energy from the interior surface of the hollow structure, and output the reflected energy through the exit aperture; and a receiver positioned to receive the reflected energy from the exit aperture. The energy from the solar collector is reflected and thereby directed through the exit aperture to the receiver by the reflective secondary optical element.

Probable Assignee: GREEN VOLTS INC

Earliest Publication Date: 20081218



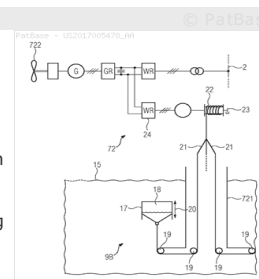
42) Family number: 59605949 (US2017005478A)

INSTALLATION FOR TRANSMITTING ELECTRICAL POWER

Abstract: Source: US2017005478A An installation for transmitting electrical power between a first and a second alternating voltage network. A self-commutated converter can be connected to the second alternating voltage network, and is connected to a unidirectional rectifier by way of a direct voltage connection. The unidirectional rectifier can be connected to the first alternating voltage network on the alternating voltage side, and to a wind farm via said first alternating voltage network. The farm has at least one wind turbine feeding electrical power into the first alternating voltage network when wind speeds are greater than a switch-on wind speed. An energy-generating device can be connected to the first alternating voltage network and/or to the at least one wind turbine for providing electrical energy. The energy-generating device converts a renewable primary energy from its surroundings when wind speeds are lower than the switch-on wind speed for the wind turbine.

Probable Assignee: SIEMENS AG

Earliest Publication Date: 20150625



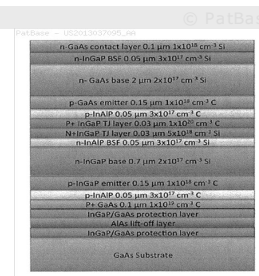
43) Family number: 52734292 (US2013037095A)

INTEGRATED SOLAR COLLECTORS USING EPITAXIAL LIFT OFF AND COLD WELD BONDED SEMICONDUCTOR SOLAR CELLS

Abstract: Source: US2013037095A There is disclosed ultrahigh-efficiency single- and multi-junction thin-film solar cells. This disclosure is also directed to a substrate-damage-free epitaxial lift-off (ELO) process that employs adhesive-free, reliable and lightweight cold-weld bonding to a substrate, such as bonding to plastic or metal foils shaped into compound parabolic metal foil concentrators. By combining low-cost solar cell production and ultrahigh-efficiency of solar intensity-concentrated thin-film solar cells on foil substrates shaped into an integrated collector, as described herein, both lower cost of the module as well as significant cost reductions in the infrastructure is achieved.

Probable Assignee: THE UNIV OF MICHIGAN

Earliest Publication Date: 20130110



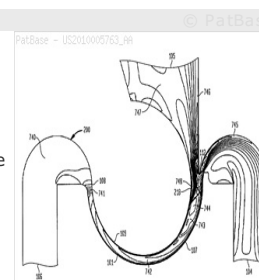
44) Family number: 44230048 (US2010005763A)

AERODYNAMIC SEPARATION NOZZLE

Abstract: Source: US2010005763A Multiple designs and methods for aerodynamic separation nozzles and systems for integrating multiple aerodynamic separation nozzles into a single system are disclosed herein. These aerodynamic separation nozzles utilize a combination of aerodynamic forces and separation nozzle structure to induce large centrifugal forces on the gases that in combination with the structure of the nozzle are used to separate heavier constituents of the process gas from lighter constituents. In some embodiments a number of separation nozzles are combined into a single system suitable for dynamic processing of a process gas. In other embodiments the separation nozzles are temperature controlled to condition the incoming gas to a temperature in order to encourage a phase change in certain constituents of the gas to occur within the nozzle to further enhance separation.

Probable Assignee: TENOROC LLC

Earliest Publication Date: 20100114



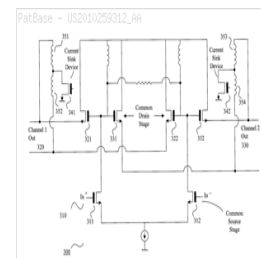
45) Family number: 47097981 (US2010259312A)

ACTIVE POWER SPLITTER

Abstract: Source: US2010259312A A circuit topology in accordance with a system, method and device for an active power splitter with an input and at least two outputs which allows the use of negative feedback and thus improving stability and linearity without substantially increasing the noise figure of the system is provided.

Probable Assignee: VIASAT INC

Earliest Publication Date: 20101014



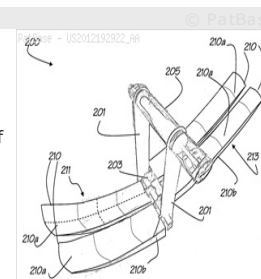
46) Family number: 48764556 (US2012192922A)

SOLAR COLLECTOR

Abstract: Source: US2012192922A A reflector to reflect solar radiation, the reflector having a concave reflector surface, wherein the surface curves about a first axis and a second axis, the second axis being in a plane generally normal to the first axis and curved about the first axis. Also disclosed is an apparatus for collection and utilization of solar energy including at least one of the reflectors, and at least one photovoltaic cell associated with each surface and positioned relative to the associated surface so as to be positioned to receive radiation reflected by the associated surface and to convert the radiation to electrical energy. The apparatus further includes heat a conversion mechanism for converting excess solar radiation energy incident thereon to heat energy.

Probable Assignee: CONSUNTRATE PTY LTD

Earliest Publication Date: 20110421



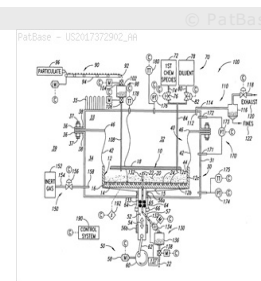
47) Family number: 62829010 (US2017372902A)

CRYSTAL PRODUCTION SYSTEMS AND METHODS

Abstract: Source: US2017372902A Mechanically fluidized systems and processes allow for efficient, cost-effective production of silicon coated particles having very low levels of contaminants such as metals and oxygen. These silicon coated particles are produced, conveyed, and formed into crystals in an environment maintained at a low oxygen level or a very low oxygen level and a low contaminant level or very low contaminant level to minimize the formation of silicon oxides and minimize the deposition of contaminants on the coated particles. Such high purity coated silicon particles may not require classification and may be used in whole or in part in the crystal production method. The crystal production method and the resultant high quality of the silicon boules produced are improved by the reduction or elimination of the silicon oxide layer and contaminants on the coated particles.

Probable Assignee: SITEC GMBH

Earliest Publication Date: 20160707



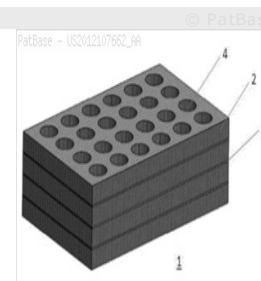
48) Family number: 49178705 (US2012107662A)

THERMAL MANAGEMENT MATRIX

Abstract: Source: US2012107662A A thermal management matrix for an electrochemical cell array including a plurality of electrochemical cell elements, the thermal management matrix at least in part enveloping the electrochemical cell array and being in thermal contact therewith. The thermal management matrix includes mainly expanded graphite, wherein the expanded graphite is arranged in the form of a block-like structure and the block includes at least one layer of expanded graphite having a higher in-plane thermal conductivity than the layers neighboring the layer with higher in-plane thermal conductivity. The thermal management matrix may also include phase change materials as a latent heat storage material.

Probable Assignee: SGL CARBON SE

Earliest Publication Date: 20110707



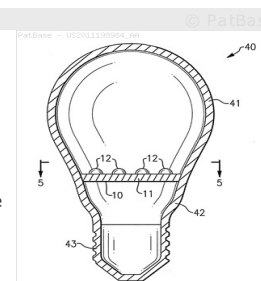
49) Family number: 49401976 (US2011198984A)

LIGHTING DEVICES THAT COMPRISE ONE OR MORE SOLID STATE LIGHT EMITTERS

Abstract: Source: US2011198984A Light engine modules comprise a support member and a solid state light emitter, in which (1) the emitter is mounted on the support member, (2) a region of the support member has a surface with a curved cross-section, (3) the emitter and a compensation circuit are mounted on the support member, (4) an electrical contact element extends to at least two surfaces of the support member, and/or (5) a substantial entirety of the module is located on one side of a plane and the emitter emits light into another side of the plane. Also, a module comprising means for supporting a light emitter and a light emitter. Also, a lighting device comprising a housing member and a light emitter mounted on a removable support member. Also, a lighting device comprising a module mounted in a lighting device element. Also, a method comprising mounting a module to a lighting device element.

Probable Assignee: CREE INC

Earliest Publication Date: 20110818



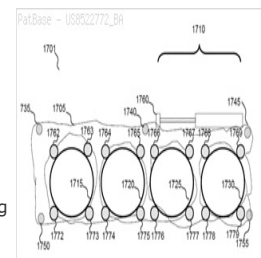
50) Family number: 54641090 (US8522772B)

TRACKING SYSTEM FOR LIGHTWEIGHT SOLAR COLLECTOR ASSEMBLY AND ARRAY

Abstract: Source: US8522772B A tracking system for a solar collector assembly array where the tracking system includes a coplanar circular rim structure including multiple circular rims, where each circular rim is fitted around a respective solar collector and where each solar collector has a general shape of a sealed and inflated cylindrical tube housing having a longitudinal center axis and where each solar collector is in a horizontal planar array with respect to each other. The tracking system further includes a first elongated frame structure for supporting the circular rim structure such that all of the circular rims are generally vertically coplanar with one another. The tracking system further includes a cable serially wrapped around each of the respective circular rims to form a closed cable loop where the wrapped cable forms a series of a generally vertical coplanar loops with each loop contacting around a respective rim structure such that at least one generally complete gripping loop is formed on each respective rim. An actuator is attached to the frame structure such that actuator provides a controllable driving force to the closed cable loop to allow for controlled rotation of each solar collector assembly around its respective longitudinal axis.

Probable Assignee: US NAVY

Earliest Publication Date: 20130903



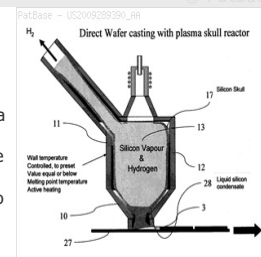
51) Family number: 44043822 (US2009289390A)

DIRECT SILICON OR REACTIVE METAL CASTING

Abstract: Source: US2009289390A A method for producing solid multicrystalline silicon ingots or wafers, comprising: introducing a silicon-bearing gas into a reactor chamber, wherein the reaction chamber includes a reactor chamber wall having (i) an inside surface facing a reaction space and (ii) an opposing outside surface, and a product outlet; generating a plasma in the reactor space; thermally decomposing the silicon-bearing gas by subjecting the silicon-bearing gas to a sufficient temperature to produce liquid silicon; maintaining the inside surface of the reactor chamber wall at an equilibrium temperature below the melting point temperature of silicon while thermally decomposing the silicon-bearing gas; and introducing the liquid silicon from the product outlet directly into a module for casting the liquid silicon into solid multicrystalline silicon ingots or multicrystalline silicon wafer.

Probable Assignee: REC SILICON INC

Earliest Publication Date: 20091126



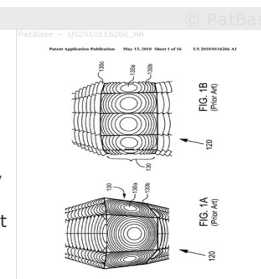
52) Family number: 44983565 (US2010116266A)

SOLAR ENERGY COLLECTING APPARATUS

Abstract: Source: US2010116266A A solar energy collecting structure includes a focusing element that is axially aligned with and fixed in spaced relationship to an associated concave collector. Each concave collector is fixed at a distance equal to the focal length of the associated focusing element, for enabling focused solar energy to be received and collected over an entire temporal interval-without any need for tracking mechanisms. A solar energy collecting apparatus may be structured by employing a plurality of the solar energy collecting structures, in a tightly packed, juxtaposed (adjacent) relationship, with the focusing elements forming, at least in significant part, a curved surface of the apparatus for enabling solar energy to be collected over an expanded temporal interval. This abstract is provided to comply with rules requiring abstracts, and is submitted with the intention that it will not be used to interpret or limit the scope and meaning of the claims.

Probable Assignee: ENVIRONMENTALLY PROTECTIVE POWER GENERATION LLC

Earliest Publication Date: 20100513



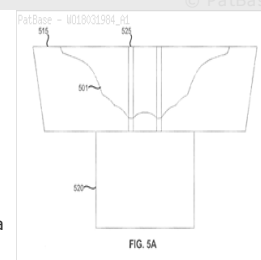
53) Family number: 68589355 (WO18031984A1)

LEAK FREE CURRENT COLLECTOR ASSEMBLY FOR METALLURGICAL VESSEL AND METHODS OF MANUFACTURE

Abstract: Methods of manufacturing a current collector assembly may include iteratively solving a model on a computer. The model may utilize received inputs including a variable number and arrangement of conductive elements to determine as an output a heat distribution within a hypothetical current collector assembly. The methods may also include identifying as a solution to the model a number and arrangement of conductive elements coupled with a current collector that produces a contained heat distribution within the hypothetical current collector assembly. The methods may also include manufacturing the current collector assembly, and the current collector assembly may include a defined plurality of apertures within a refractory base of the current collector assembly in a pattern configured to receive the number and arrangement of conductive elements identified as the solution to the model.

Probable Assignee: BOSTON ELECTROMETALLURGICAL CORP

Earliest Publication Date: 20180215



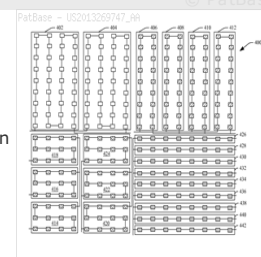
54) Family number: 52539360 (US2013269747A)

PHOTOVOLTAIC POWER GENERATION SYSTEM FREE OF BYPASS DIODES

Abstract: Source: US2013269747A A photovoltaic power generation system that includes a solar panel that is free of bypass diodes is described herein. The solar panel includes a plurality of photovoltaic sub-modules, wherein at least two of photovoltaic sub-modules in the plurality of photovoltaic sub-modules are electrically connected in parallel. A photovoltaic sub-module includes a plurality of groups of electrically connected photovoltaic cells, wherein at least two of the groups are electrically connected in series. A photovoltaic group includes a plurality of strings of photovoltaic cells, wherein a string of photovoltaic cells comprises a plurality of photovoltaic cells electrically connected in series. The strings of photovoltaic cells are electrically connected in parallel, and the photovoltaic cells are microsystem-enabled photovoltaic cells.

Probable Assignee: NATIONAL TECHNOLOGY AND ENGINEERING SOLUTIONS OF SANDIA LLC

Earliest Publication Date: 20121211



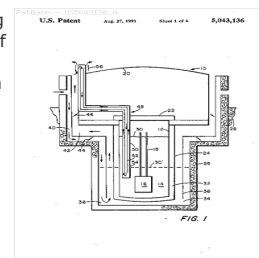
55) Family number: 3045861 (US5043136A)

PASSIVE COOLING SAFETY SYSTEM FOR LIQUID METAL COOLED NUCLEAR REACTORS

Abstract: Source: US5043136A A liquid metal cooled nuclear reactor having a passive cooling system for removing residual heat resulting from fuel decay during reactor shutdown. The passive cooling system comprises a plurality of partitions surrounding the reactor vessel in spaced apart relation forming intermediate areas for circulating heat transferring fluid which remove and carry away heat from the reactor vessel. The passive cooling system includes a closed primary fluid circuit through the partitions surrounding the reactor vessel and a partially adjoining secondary open fluid circuit for carrying transferred heat out into the atmosphere.

Probable Assignee: GEN ELECTRIC

Earliest Publication Date: 19910827



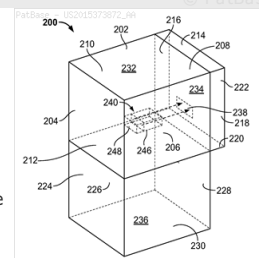
56) Family number: 61249171 (US2015373872A)

PASSIVE COOLING FEATURES FOR ELECTRONICS EQUIPMENT CABINETS

Abstract: Source: US2015373872A An electronics equipment cabinet includes a plurality of walls defining a first space and a second space adjacent the first space. A wall of the plurality of walls separates the first space and the second space and includes an opening. The cabinet further includes a heat generating module having an inlet side, an outlet side opposing the inlet side, a heat generating component between the inlet side and the outlet side, and an internal fan for directing air heated by the heat generating component into the second space via the opening of the wall. One or more walls of the plurality of walls defining the second space includes a thermally conductive material for transferring heat from the second space to a surrounding environment external to the cabinet to reduce a temperature in the cabinet. Other example cabinets and methods for reducing temperature in cabinets are also disclosed.

Probable Assignee: VERTIV ENERGY SYSTEMS INC

Earliest Publication Date: 20151224



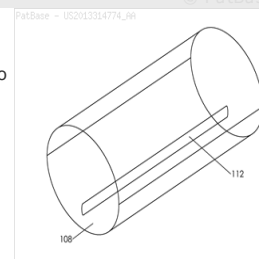
57) Family number: 53810724 (US2013314774A)

INFLATED TUBULAR SOLAR CONCENTRATORS

Abstract: Source: US2013314774A A solar collector utilizes an inflated tubular film which concentrates sunlight onto a solar receiver. The film incorporates refractive elements in a pattern which focuses light in one or two dimensions to create foci in the form of lines, spots, or other shapes. The film may be replaceable. The film may include layers of material to optimize optical, structural, thermal, and durability characteristics.

Probable Assignee: COOL EARTH SOLAR INC

Earliest Publication Date: 20130523



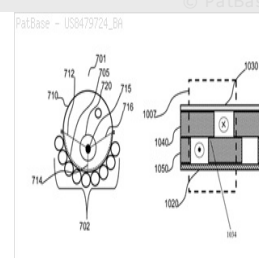
58) Family number: 54266886 (US8479724B)

PASSIVE COOLING SYSTEM FOR LIGHTWEIGHT SOLAR COLLECTOR ASSEMBLY AND ARRAY

Abstract: Source: US8479724B In one embodiment, a solar collector assembly includes a sealed and inflated cylindrical-tube shaped housing, the tube housing including a bottom cylindrically-trough shaped reflector portion having a reflection surface extending along a longitudinal length. The reflection surface is made of a relatively thin and flexible metalized polymer film. A top cylindrically-shaped transparent polymer film sheet portion is made of a relatively thin and flexible polymer film, the top and bottom sheet portions forming a pressure sealed cylindrical tube housing when the respective ends of the top and bottom films are sealed together and the tube housing is inflated with a gas so that the top transparent film portion passes solar energy to the reflection surface. A receiver tube is disposed longitudinally above the reflection surface in a focal line or focal plane of the cylindrical-trough shaped reflector portion, the absorber tube extending along the longitudinal length of the reflection surface, the absorber tube containing a first heat transfer fluid for absorbing solar energy reflected from the reflection surface to the focal line or focal plane. A passive cooling component including a partially hollowed wall structure extends below and longitudinally along the bottom cylindrical shaped housing wherein the hollowed wall structure includes multiple cooling loop convection cells formed within the hollowed wall structure.

Probable Assignee: US NAVY

Earliest Publication Date: 20130709



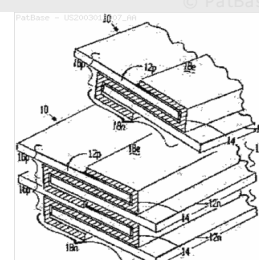
59) Family number: 27989380 (US2003013007A)

CELL STRUCTURE FOR ELECTROCHEMICAL DEVICES AND METHOD OF MAKING SAME

Abstract: Source: US2003013007A An electrochemical device comprising alternating layers of positive and negative electrodes separated from each other by separator layers. The electrode layers extend beyond the periphery of the separator layers providing superior contact between the electrodes and battery terminals, eliminating the need for welding the electrode to the terminal. Electrical resistance within the battery is decreased and thermal conductivity of the cell is increased allowing for superior heat removal from the battery and increased efficiency. Increased internal pressure within the battery can be alleviated without damaging or removing the battery from service while keeping the contents of the battery sealed off from the atmosphere by a pressure release system. Nonoperative cells within a battery assembly can also be removed from service by shorting the nonoperative cell thus decreasing battery life.

Probable Assignee: INVENTEK CORP

Earliest Publication Date: 20030116



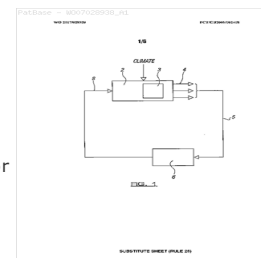
60) Family number: 32402949 (WO07028938A1)

THERMAL ENERGY SYSTEM AND APPARATUS

Abstract: A thermal energy system for heating and/or cooling applications, system having solar collection means for transferring heat energy to and/or from a heat transfer fluid, thermal upgrading means for increasing the thermal energy within the system and thermal storage means. The collection means, upgrading means and storage means are connected so as to allow the transfer of heat therebetween via the heat transfer fluid. Control means is arranged to receive readings of operational variables from the thermal energy system and to process the operational variables using a system model so as to predict future operational variables for the system. The control means controls the flow of the heat transfer fluid around the system based on the predicted operational variables. The collection means may have an outer thermally conductive surface for the reception of solar radiation and one or more formations extending behind the outer surface, the formations being formed integrally with the outer surface and shaped to provide one or more elongate conduits for conveying a heat transfer fluid through the collection means during use.

Probable Assignee: ENDOENERGY SYSTEMS LTD

Earliest Publication Date: 20070315



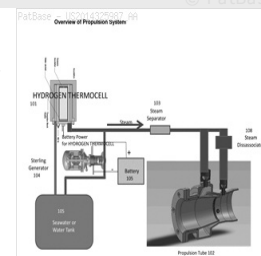
61) Family number: 57710217 (US2014325987A)

HYDROGEN JET PROPULSION SYSTEM

Abstract: Source: US2014325987A A propulsion system for watercraft that uses steam generated from low energy reactor to enable long range high power propulsion. The system preferably uses steam generated from a low energy reactor to provide on-demand steam generated without external power.

Probable Assignee: BLUE HORIZON INNOVATIONS LLC

Earliest Publication Date: 20141106



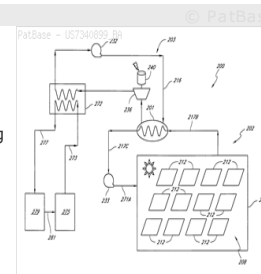
62) Family number: 41580941 (US7340899B)

SOLAR POWER GENERATION SYSTEM

Abstract: Source: US7340899B An economical solar generator system is provided wherein the solar energy collector is constructed from a plurality of heat exchangers of the kind used as evaporators in automobile air conditioners. The solar generator system includes a plurality of said heat exchangers connected to receive incoming liquefied refrigerant under pressure. The number of such heat exchangers is sufficient to collect solar energy sufficient to induce a phase change from a liquid to a gas state. The solar generator system also includes an air motor and an electric generator. The air motor is coupled to the outflow heated gas from the plurality of heat exchangers. The air motor is rotated by the heated gas. The electrical generator is coupled to the air motor so that rotation of said air motor causes rotation of said generator.

Probable Assignee: SOLAR ENERGY PRODUCTION CORP

Earliest Publication Date: 20080311



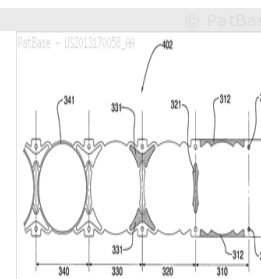
63) Family number: 54262172 (US2013170058A)

SOLAR COLLECTOR

Abstract: Source: US2013170058A A solar collector array is disclosed. The array has a plurality of thin walled dishes interconnected by unitary webbing. The dishes and the webbing are formed from a single metallic sheet. Each dish is pressed into a symmetric parabolic surface that concentrates incident light to a position in front of the dish.

Probable Assignee: RA INVESTMENT MANAGEMENT SARL

Earliest Publication Date: 20130704



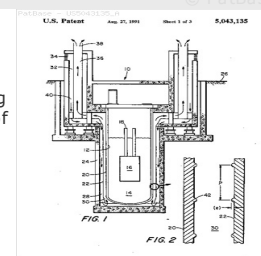
64) Family number: 4738632 (US5043135A)

METHOD FOR PASSIVE COOLING LIQUID METAL COOLED NUCLEAR REACTORS, AND SYSTEM THEREOF

Abstract: Source: US5043135A A liquid metal cooled nuclear reactor having a passive cooling system for removing residual heat resulting from fuel decay during reactor shutdown. The passive cooling system comprises a plurality of partitions surrounding the reactor vessel in spaced apart relation forming intermediate areas for circulating heat transferring fluid which remove and carry away heat from the reactor vessel.

Probable Assignee: GEN ELECTRIC

Earliest Publication Date: 19901122



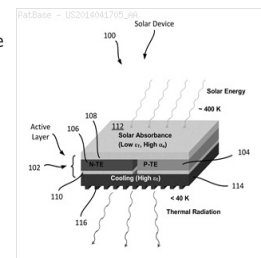
65) Family number: 55763201 (US2014041705A)

SOLAR RADIATION CONTROL AND ENERGY HARVESTING FILM

Abstract: Source: US2014041705A Some implementations provide a device (e.g., solar panel) that includes an active layer and a solar absorbance layer. The active layer includes a first N-type layer and a first P-type layer. The solar absorbance layer is coupled to a first surface of the active layer. The solar absorbance layer includes a polymer composite. In some implementations, the polymer composite includes one of at least metal salts and/or carbon nanotubes. In some implementations, the active layer is configured to provide the photovoltaic effect. In some implementations, the active layer further includes a second N-type layer and a second P-type layer. In some implementations, the active layer is configured to provide the thermoelectric effect. In some implementations, the device further includes a cooling layer coupled to a second surface of the active layer. In some implementations, the cooling layer includes one of at least zinc oxides, indium oxides, and/or carbon nanotubes.

Probable Assignee: NATIONAL INST OF AEROSPACE ASSOCIATES

Earliest Publication Date: 20140213



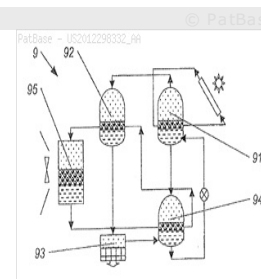
66) Family number: 49576935 (US2012298332A)

MEANS, METHOD AND SYSTEM FOR HEAT EXCHANGE

Abstract: Source: US2012298332A A heat transfer device and its manufacturing method are provided. The heat transfer device has a heat transfer member defining a heat exchange surface with which a heat transportable medium contact in use and via which heat is transferable between the heat transportable medium and a working medium, and a device body for containing the heat transportable medium. The body of the device defines a first chamber, a second chamber and a third chamber which are in fluid communicable relationship. The body is configured to allow the heat transportable medium fluid to pass from the second chamber to the first chamber and then to the third chamber, or from the third chamber to the first chamber and then to the second chamber, and the second chamber is sandwiched or positioned between the first chamber and the third chamber in the body.

Probable Assignee: BESTRONG INT LTD

Earliest Publication Date: 20110915



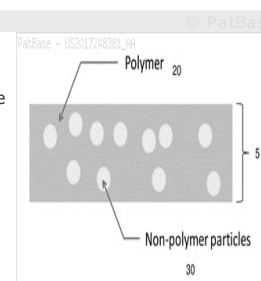
67) Family number: 66772356 (US2017248381A)

RADIATIVE COOLING STRUCTURES AND SYSTEMS

Abstract: Source: US2017248381A Polymer-based selective radiative cooling structures are provided which include a selectively emissive layer of a polymer or a polymer matrix composite material. Exemplary selective radiative cooling structures are in the form of a sheet, film or coating. Also provided are methods for removing heat from a body by selective thermal radiation using polymer-based selective radiative cooling structures.

Probable Assignee: OF WYOMING UNIV

Earliest Publication Date: 20170831



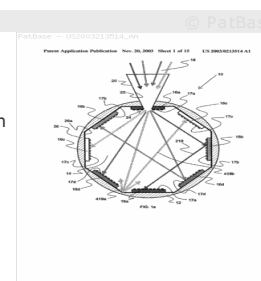
68) Family number: 29735872 (US2003213514A)

CONCENTRATING PHOTOVOLTAIC CAVITY CONVERTERS FOR EXTREME SOLAR-TO-ELECTRIC CONVERSION EFFICIENCIES

Abstract: Source: US2003213514A A concentrating photovoltaic module is provided which provides a concentration in the range of about 500 to over 1,000 suns and a power range of a few kW to 50 kW. A plurality of such modules may be combined to form a power plant capable of generating over several hundred megawatts. The concentrating photovoltaic module is based on a Photovoltaic Cavity Converter (PVCC) as an enabling technology for very high solar-to-electricity conversions. The use of a cavity containing a plurality of single junction solar cells of different energy bandgaps and simultaneous spectral splitting of the solar spectrum employs a lateral geometry in the spherical cavity (where the cell strings made of the single junction cells operate next to each other without mutual interference). The purpose of the cavity with a small aperture for the pre-focused solar radiation is to confine (trap) the photons so that they can be recycled effectively and used by the proper cells. Passive or active cooling mechanisms may be employed to cool the solar cells.

Probable Assignee: UNITED INNOVATIONS INC

Earliest Publication Date: 20031120



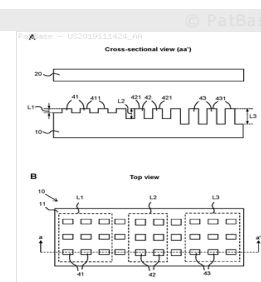
69) Family number: 70791497 (US2019111424A)

ASSAY USING DIFFERENT SPACING HEIGHTS

Abstract: Source: US2019111424A The present invention, among other things, provides the devices and methods in manipulate a sample for the purpose of assaying.

Probable Assignee: ESSENIX CORP

Earliest Publication Date: 20180816



70) Family number: 67561717 (WO17197438A1)

NOVEL PHASE CHANGE MATERIAL AND METHODS OF USE

Abstract: The invention relates to a phase change material including one or more salts of low vapour pressure and low flammability and an energy storage system, method and device comprising the phase change material.

Probable Assignee: UNIV MONASH

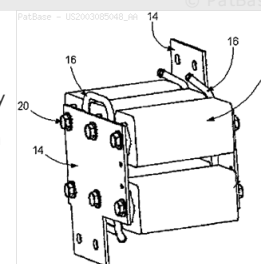
71) Family number: 28826122 (US2003085048A)

METHOD AND APPARATUS FOR COOLING ELECTRICAL FUSES

Abstract: Source: US2003085048A An apparatus for cooling electrical protective devices comprises an electrical protective device mounted to at least one electrical terminal, wherein the electrical terminals are cooled to indirectly cool the electrical protective devices. A pressurized coolant source passes a coolant fluid through coolant passages attached to the electrical terminals, thereby cooling the electrical terminals. The cooled electrical terminals maintain the temperature of the electrical protection device within an appropriate operating temperature range. This cooling method may be used to increase the fuse power rating of a fuse array while maintaining electrical coordination between the fuses in the fuse array and electrical devices protected by the fuse array.

Probable Assignee: GLOBALFOUNDRIES INC

Earliest Publication Date: 20021031



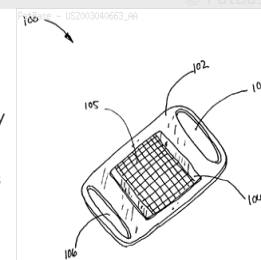
72) Family number: 28090188 (US2003040663A)

DEVICE FOR CAPTURING THERMAL SPECTRA FROM TISSUE

Abstract: Source: US2003040663A A device and method are provided for use with a noninvasive optical measurement system, such as a thermal gradient spectrometer, for improved determination of analyte concentrations within living tissue. In one embodiment, a wearable window is secured to a patient's forearm thereby isolating a measurement site on the patient's skin for determination of blood glucose levels. The wearable window effectively replaces a window of the spectrometer, and thus forms an interface between the patient's skin and a thermal mass window of the spectrometer. When the spectrometer must be temporarily removed from the patient's skin, such as to allow the patient mobility, the wearable window is left secured to the forearm so as to maintain a consistent measurement site on the skin. When the spectrometer is later reattached to the patient, the wearable window will again form an interface between the spectrometer and the same location of skin as before.

Probable Assignee: OPTISCAN BIOMEDICAL CORP

Earliest Publication Date: 20000914



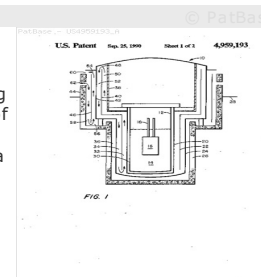
73) Family number: 4258078 (US4959193A)

INDIRECT PASSIVE COOLING SYSTEM FOR LIQUID METAL COOLED NUCLEAR REACTORS

Abstract: Source: US4959193A A liquid metal cooled nuclear reactor having a passive cooling system for removing residual heat resulting from fuel decay during reactor shutdown. The passive cooling system comprises a plurality of partitions surrounding the reactor vessel in spaced apart relation forming intermediate areas for circulating heat transferring fluid which remove and carry away heat from the reactor vessel. The passive cooling system includes a closed primary fluid circuit through the partitions surrounding the reactor vessel and a partially adjoining secondary open fluid circuit for carrying transferred heat out into the atmosphere.

Probable Assignee: GEN ELECTRIC

Earliest Publication Date: 19900925



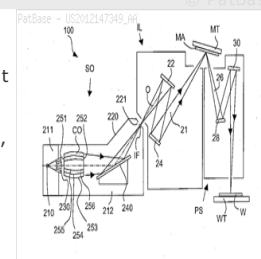
74) Family number: 48313342 (US2012147349A)

EUV RADIATION SYSTEM AND LITHOGRAPHIC APPARATUS

Abstract: Source: US2012147349A A lithographic projection apparatus is provided with a EUV radiation system that includes a source chamber, a supply constructed and arranged to supply a target material to a predetermined plasma formation position, an optical system formed by three or more mirrors arranged to establish a beam path extending to the target material when the target material is located at the predetermined plasma formation position, and a laser system constructed and arranged to provide a laser beam along the beam path for interaction with the target material to produce an EUV radiation-emitting plasma inside the chamber.

Probable Assignee: ASML NETHERLANDS BV

Earliest Publication Date: 20110215



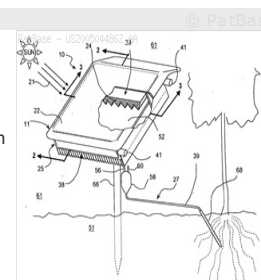
75) Family number: 31718651 (US2005044862A)

AUTONOMOUS WATER SOURCE

Abstract: Source: US2005044862A An autonomous water source (AWS) for extracting water from ambient air and delivering it to a plant to support growth. The system is based on an adsorption-desorption-condensation (ADC) cycle using a sorption material to extract moisture from ambient air and condensing the water vapor driven off from the sorption material by subsequent heating and followed by condensation. Liquid condensate produced in this process on the condenser is collected and delivered by gravity to a plant to reduce thermal stress and to support growth. The invention provides a sustainable source of irrigation water for agriculture and forestry, including areas where no water resources exist or are not economically viable. It can be tailored in size, and therefore, output capacity, reflecting the desired water requirements of a particular application, and can be used to replace most agricultural situations now reliant on surface water drip feed systems. The device is simple, rugged, invulnerable to rain, snow, and freezing conditions, and can be designed to last for many years without service as there are few moving parts and power required for operation is provided by sunlight.

Probable Assignee: AQWEST LLC

Earliest Publication Date: 20050303



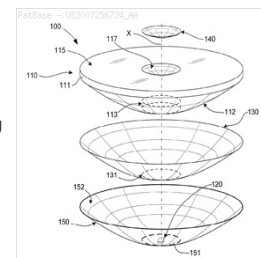
76) Family number: 40797138 (US2007256724A)

PASSIVELY COOLED SOLAR CONCENTRATING PHOTOVOLTAIC DEVICE

Abstract: Source: US2007256724A A Cassegrain-type concentrating solar collector cell includes primary and secondary mirrors disposed on opposing convex and concave surfaces of a light-transparent (e.g., glass) optical element. Light enters an aperture surface surrounding the secondary mirror, and is reflected by the primary mirror toward the secondary mirror, which re-reflects the light onto a photovoltaic cell. The photovoltaic cell is mounted on a central portion of heat spreader that extends over the primary mirror. The heat spreader transmits waste heat from the photovoltaic cell in a manner that evenly distributes the heat over the optical element, thereby maximizing the radiation of heat from the aperture surface into space. The heat spreader includes a thick copper layer formed on a flexible substrate (e.g., polyimide film) that is patterned with radial arms that facilitate mounting onto the convex surface of the optical element.

Probable Assignee: SOLFOCUS INC

Earliest Publication Date: 20071107



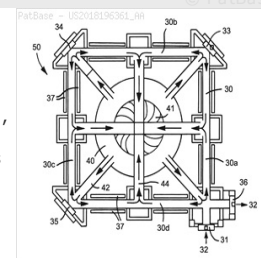
77) Family number: 64635955 (US2018196361A)

LITHOGRAPHIC APPARATUS

Abstract: Source: US2018196361A A lithographic apparatus comprising an illumination system configured to condition a radiation beam, a support structure constructed to support a patterning device, the patterning device being capable of imparting the radiation beam with a pattern in its cross-section to form a patterned radiation beam, a substrate table constructed to hold a substrate, and a projection system configured to project the patterned radiation beam onto the substrate, the lithographic apparatus being provided with a first cooling fluid circuit which is configured to cool components to a first temperature, and provided with a second cooling fluid circuit which is configured to cool components to a second temperature that is lower than the first temperature.

Probable Assignee: ASML NETHERLANDS BV

Earliest Publication Date: 20170112



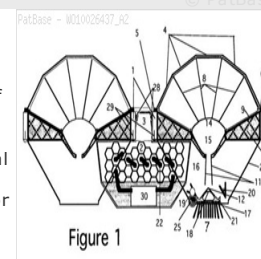
78) Family number: 44516028 (WO10026437A2)

FOCUSING COLLECTOR OPTICAL AND ENERGY SYSTEM

Abstract: For terrestrial or marine human occupied structures, the invention provides an improved concentrating solar energy collector that is fixed and storm resistant, makes electricity from infrared radiation, uses two stages of concentration to provide concentration of light without need for tracking, and adds a variable partly reflective or refractive means for dividing or redirecting the concentrated radiant energy between multiple uses in response to real time demand signals, user priority signals, and/or timer system. The invention also includes two or more optical interfaces enabling convenient and efficient integration with either heat exchanger slide-in unit(s) or other adaptive modules adding electrolysis of hydrogen or hydroxy gas, air dehumidification, solar powered air conditioning, and/or light delivery systems to the collector's functions. The invention enables the production of electricity and heat in a variable ratio or timing from sunlight, and integrates into or onto a roof or facade structure, using a specially designed truss system where desirable.

Probable Assignee: CARL B ANDREWS

Earliest Publication Date: 20100311



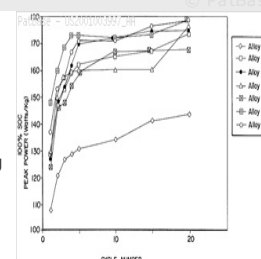
79) Family number: 29493296 (US2001003997A)

MODIFIED ELECTROCHEMICAL HYDROGEN STORAGE ALLOY HAVING INCREASED CAPACITY, RATE CAPABILITY AND CATALYTIC ACTIVITY

Abstract: Source: US2001003997A A modified Ti-V-Zr-Ni-Mn-Cr electrochemical hydrogen storage alloy which has at least one of the following characteristics: 1) an increased charge/discharge rate capability over that the base Ti-V-Zr-Ni-Mn-Cr electrochemical hydrogen storage alloy; 2) a formation cycling requirement which is reduced to one tenth that of the base Ti-V-Zr-Ni-Mn-Cr electrochemical hydrogen storage alloy; or 3) an oxide surface layer having a higher electrochemical hydrogen storage catalytic activity than the base Ti-V-Zr-Ni-Mn-Cr electrochemical hydrogen storage alloy.

Probable Assignee: CHEVRON TECHNOLOGY VENTURES LLC

Earliest Publication Date: 20000309



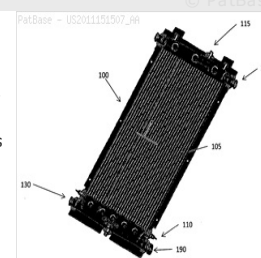
80) Family number: 45440597 (US2011151507A)

SOLAR BIOFACTORY, PHOTOBIOREACTORS, PASSIVE THERMAL REGULATION SYSTEMS AND METHODS FOR PRODUCING PRODUCTS

Abstract: Source: US2011151507A The invention described herein relates to photobioreactors, methods, assembly and use of such apparatus for culturing light-capturing organisms in a cost-effective manner. Various embodiments provide for a passive thermal regulation system employing selected microorganisms in a photobioreactor apparatus and methods for biological production of various fuel and chemical products from these organisms. Additional embodiments provide a solar biofactory system capable of culturing light capturing organisms to an areal productivity of 3.3 grams per square metre/hr. Further embodiments are directed to a photobioreactor capable of culturing light capturing organisms to an OD730 of about 14 g/L DCW. Such embodiments incorporate passive thermal regulation and systems.

Probable Assignee: JOULE UNLIMITED TECHNOLOGIES INC

Earliest Publication Date: 20100617



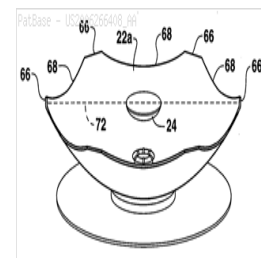
81) Family number: 33892386 (US2006266408A)

CONCENTRATOR SOLAR PHOTOVOLTAIC ARRAY WITH COMPACT TAILORED IMAGING POWER UNITS

Abstract: Source: US2006266408A Solar panels and assembled arrays thereof include a collection of relatively compact, high-capacity power units. Optical components of each power unit include a front window or surface glazing, a primary mirror, secondary mirror and receiver assembly. Primary and secondary mirrors are defined by respective perimeters, at least a portion of which may be substantially coplanar and in contact with the front window. Some primary mirrors are configured with a perimeter of alternating full and truncated sections, and are curved to a base portion forming a pilot hole therein. Receiver assembly mechanical components include an alignment tube for mating with the primary mirror's pilot hole and for housing a photovoltaic solar cell. A base plate provided adjacent to the alignment tube serves to radiate heat emitted by the solar cell, and in some embodiments an additional heat sink provides further passive cooling. A tapered optical rod also provided within the receiver assembly directs received sunlight to the solar cell where electrical current is generated.

Probable Assignee: H2GO INC

Earliest Publication Date: 20061130



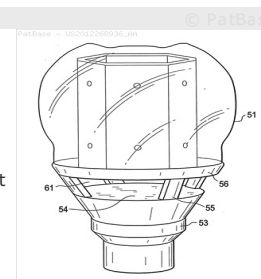
82) Family number: 52172581 (US2012268936A)

HEAT SINK STRUCTURES, LIGHTING ELEMENTS AND LAMPS INCORPORATING SAME, AND METHODS OF MAKING SAME

Abstract: Source: US2012268936A In some embodiments, a lighting element comprising at least first and second solid state light emitters, a first heat sink structure with a fold region between first and second heat sink regions, and at least one light emitter on each of the heat sink regions, and methods of making. In some embodiments, a lighting element, comprising plural heat sink regions on respective regions of a flexible circuit board, and plural light emitters on respective regions of the flexible circuit board, and methods of making. In some embodiments, heat sink structures comprising plural heat sink regions and a circuit board with plural regions, and lighting elements comprising them. In some embodiments, a heat sink structure, comprising plural heat sink regions and an internal flow guide structure, and lighting elements comprising same. Also, other lighting elements, lamps and heat sink structures.

Probable Assignee: CREE INC

Earliest Publication Date: 20121025



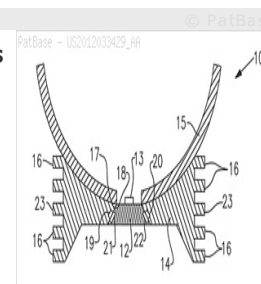
83) Family number: 50610835 (US2012033429A)

LIGHTING DEVICES WITH REMOVABLE LIGHT ENGINE COMPONENTS, LIGHTING DEVICE ELEMENTS AND METHODS

Abstract: Source: US2012033429A A lighting device, comprising a lighting device element and a light engine component (comprising a solid state light emitter) that is removably supported by the lighting device element. Also, lighting device elements that comprise a lens, a housing member, a mechanical engagement region, an electrical contact region and/or means for removably supporting a light engine component. Also, lighting device elements in which a retaining structure holds a light engine component, a portion of a light engine component is exposed to a lens. Also, lighting devices that comprise means for removably supporting a light engine component. Also, methods that comprise removing a light engine component from a lighting device element and removably supporting a second light engine component on the lighting device element.

Probable Assignee: CREE INC

Earliest Publication Date: 20120209



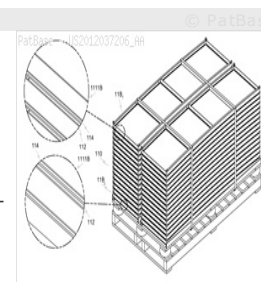
84) Family number: 50640649 (US2012037206A)

SYSTEMS FOR COST EFFECTIVE CONCENTRATION AND UTILIZATION OF SOLAR ENERGY

Abstract: Source: US2012037206A The present invention is primarily directed to improvements to cost-effective systems for concentrating and using solar energy. The present invention co-optimizes the frame and the primary mirrors and secondary concentrator for a cost-effective very high concentration quasi-parabolic dish system that uses no moulded optics for the primary concentration, and also optimizes fabrication jigs for the main components of that design. The present invention also optimizes cell contacts and provides cost effective receiver cooling for dense receiver arrays for very high concentration photovoltaic systems. The present invention also includes a semi-dense receiver array that can provide a higher acceptance angle than a dense receiver array, and finally includes mutual-shading impact minimization methods and apparatus compatible with very high concentration photovoltaic systems.

Probable Assignee: GESTION TECHNOCAP INC

Earliest Publication Date: 20120216



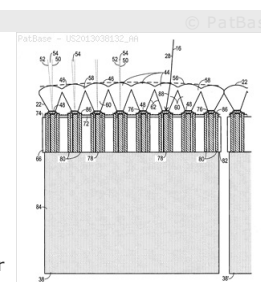
85) Family number: 53007956 (US2013038132A)

CPV SYSTEM AND METHOD THEREFOR

Abstract: Source: US2013038132A A concentrated photovoltaic system (10) uses a semi-dense array of photovoltaic cells (76) in combination with a point-focus, reflecting primary concentrator (12) and a number of linear, refracting secondary concentrators (22). The secondary concentrators (22) are configured as totally internally reflecting lenses, wherein each lens covers an entire planar receiver tile (38) holding a multiplicity of photovoltaic cells (76). A large number of receiver tiles (38) may be used in the converter (10). The cells (76) are arranged in dense, nearly abutting, sub-arrays (92) that are spaced apart from other sub-arrays (92). Photovoltaic cells (76) from a few nearby sub-arrays are coupled in parallel to drive a DC/DC MPPT boost converter (100). DC outputs from several boost converters (100) are series coupled to form a high DC voltage string which drives a DC/AC inverter (122). AC outputs from several DC/AC inverters (122) are combined in a multi-winding transformer (124) to generate a sine wave with low harmonic distortion.

Probable Assignee: SOUTHWEST SOLAR TECHNOLOGY LLC

Earliest Publication Date: 20130214



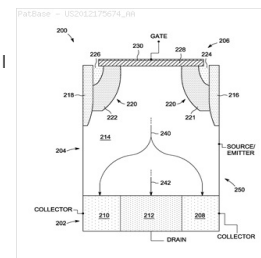
86) Family number: 45548447 (US2012175674A)

POWER SWITCHES FOR AIRCRAFT

Abstract: Source: US2012175674A The present invention relates generally to power switches for aircraft. According to a first aspect, the present invention provides an integrated solid state power switch for fault protection in an aircraft power distribution system. The integrated solid state power switch is formed of semiconductor material that provides a field effect transistor (FET) channel that is operable during normal device operation to provide an operating current flow path and a bipolar transistor channel that is operable during device overload conditions to provide an overload current flow path. A method for manufacturing such an integrated solid state power switch is also described. Various embodiments of the invention provide automatic overload current protection for aircraft systems without the need to use bulky switches or heavy cooling equipment.

Probable Assignee: GE AVIATION SYSTEMS LTD

Earliest Publication Date: 20111007



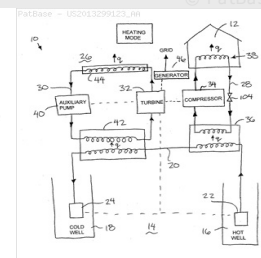
87) Family number: 51282033 (US2013299123A)

GEOHERMAL SYSTEM

Abstract: Source: US2013299123A A geothermal system includes a first circuit including a first heat exchanger exchanging heat with a controlled space, a second circuit including a second heat exchanger exchanging heat with an outdoor temperature sink that varies seasonally, a geothermal heat exchanging assembly arranged to exchange heat between a geothermal source and the fluid in both the first and second circuits and a pumping device allowing the first circuit to function as a heat pump. The flow in both the first and second circuits is seasonally reversible to alternately heat or cool the controlled space. An expansion motor connected in series with the second circuit in communication between the second heat exchanger and the geothermal heat exchanging assembly is driven by expansion of fluid in the second circuit to function as a Rankine cycle in either seasonal direction of the flow to power the pumping device in both seasonal directions.

Probable Assignee: MATULA JOSEPH JOHN

Earliest Publication Date: 20120614



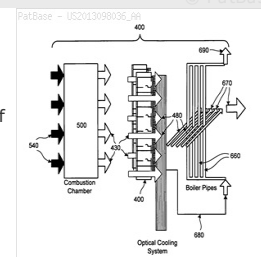
88) Family number: 53536524 (US2013098036A)

HYBRID SOLAR/NON-SOLAR ENERGY GENERATION SYSTEM AND METHOD

Abstract: Source: US2013098036A A hybrid solar/non-solar thermal generation system includes a solar concentrator and collector, and fiber optic cables that transfer collected solar radiation to a solar to thermal converter. The solar to thermal converter converts the solar radiation to heat that is used to augment the heating of a working fluid in a boiler. The system has particular application for use in Rankine cycle power generation plants that employ non-solar sources to heat the working fluid.

Probable Assignee: FALCEY JONATHAN MICHAEL PHILLIPS

Earliest Publication Date: 20130425



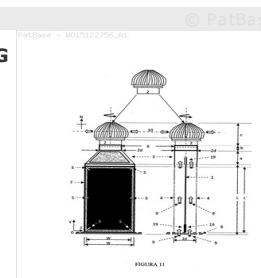
89) Family number: 60160519 (WO15122756A1)

COMBINED AIR EXTRACTOR, THAT USES SOLAR AND WIND ENERGY, FOR PASSIVELY VENTILATING INDUSTRIAL WAREHOUSES, DWELLINGS AND/OR BUILDINGS (SOLAR-WIND CHIMNEY)

Abstract: The invention relates to a method for the passive ventilation and/or heating of dwellings, industrial warehouses and/or buildings, using a solar air heater or collector. The invention also relates to a natural method of ventilating dwellings, industrial warehouses and/or buildings, using two passive systems, a solar heater and a dynamic-type atmospheric air extractor, coupled in series. In the new combined system, air is extracted by means of a maximised double effect: the solar-thermal effect and the dynamic-wind effect. The solar heater is coupled to the atmospheric extractor by means of a trapezoidal nozzle-type constriction having a characteristic shape and dimensions. The entire system should be installed in such a way that it facilitates the collection of solar energy incident on its absorption plate, to permit improved heating and exploitation thereof. At the same time, the system should also be installed at a sufficient height to make use of the effect of the wind, and to make the dynamic air extractor rotate in an adequate manner. By coupling both devices (the solar heater and the dynamic-type atmospheric extractor) via a nozzle-type constriction having characteristic dimensions, an improved effect is achieved, the extraction of air in enclosed spaces and/or buildings being maximised by up to four times more than both systems could achieve separately, as was conventionally done. This new combined air extraction system is called a solar-wind chimney.

Probable Assignee: CT DE INVESTIGACIONES ENERGETICAS MEDIOAMBIENTALES Y TECNOLOGICAS

Earliest Publication Date: 20150820



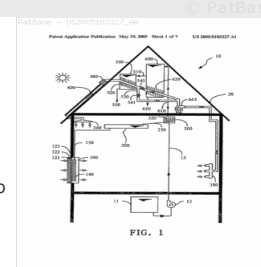
90) Family number: 31921098 (US2005103327A)

PASSIVE ENERGY SAVING SYSTEM FOR A BUILDING

Abstract: Source: US2005103327A The passive energy saving system for a building of the present invention includes a first reservoir, a heat exchanger positioned under the first reservoir, a first pipeline connecting the first reservoir and the heat exchanger, a heat-absorbing board positioned in the building, and a second pipeline connecting the heat exchanger and the heat-absorbing board. The first reservoir comprises cooling water, and the function of the first pipeline is to transfer the cooling water between the first reservoir and the heat exchanger. The heat-absorbing board uses fluid to absorb heat of air inside the building, and the function of the second pipeline is to transfer the fluid between the heat-absorbing board and the heat exchanger.

Probable Assignee: ATOMIC ENERGY COUNCIL INST OF NUCLEAR ENERGY RESEARCH

Earliest Publication Date: 20050519



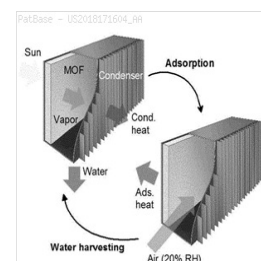
91) Family number: 70161543 (US2018171604A)

SORPTION-BASED ATMOSPHERIC WATER HARVESTING DEVICE

Abstract: Source: US2018171604A A water-harvesting system can operate with a material that can take up and release water with minimum energy requirements and powered by low-grade energy sources, such as sunlight, in order to potentially allow its deployment into households, especially those located in sunny regions. A water-harvesting method and system can include vapor adsorption using a porous metal-organic framework. In certain embodiments, the porous metal-organic framework can include metal-organic framework in ambient air with low relative humidity, typical of the levels found in most dry regions of the world.

Probable Assignee: MASSACHUSETTS INST TECHNOLOGY

Earliest Publication Date: 20180621



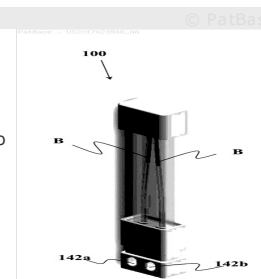
92) Family number: 64773858 (US2017023546A)

SYSTEMS, DEVICES, AND METHODS FOR BODILY FLUID SAMPLE COLLECTION, TRANSPORT, AND HANDLING

Abstract: Source: US2017023546A Bodily fluid sample collection systems, devices, and method are provided. The sample is collected at a first location and subjected to a first sample processing step. The sample may be shipped to a second location and subjected to a second sample processing step that does not introduce contaminants into a plasma portion of the sample formed from the first processing step.

Probable Assignee: THERANOS INC

Earliest Publication Date: 20170126



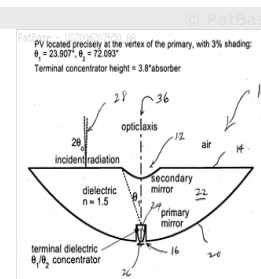
93) Family number: 33367212 (US2006207650A)

MULTI-JUNCTION SOLAR CELLS WITH AN APLANATIC IMAGING SYSTEM AND COUPLED NON-IMAGING LIGHT CONCENTRATOR

Abstract: Source: US2006207650A An optical system for a solar energy device to produce electrical energy. The optical system includes an aplanatic optical imaging system, a non-imaging solar concentrator coupled to the aplanatic system and a multi-junction solar cell to receive highly concentrated light from the non-imaging solar concentrator.

Probable Assignee: THE UNIV OF CALIFORNIA

Earliest Publication Date: 20060921



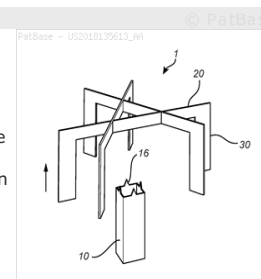
94) Family number: 64288405 (US2018135613A)

MICROFLUIDIC FAN

Abstract: Source: US2018135613A A device (**1, 100**) for controlling a flow of a gaseous fluid is disclosed. The device comprises a first electrode (**10, 110**) and a second electrode (**20, 120**) offset from the first electrode in a downstream direction of the flow. The electrodes are connectable to a voltage source. A thermally conducting flange (**30**) is arranged to extend in a plane parallel to a direction of the flow and adapted to dissipate heat from the gaseous fluid. At least a portion of the first electrode has a maximum height (h_1) in a direction parallel to a direction of the flow and a maximum width (w_1) in a direction orthogonal to the direction of the flow, wherein said maximum height is larger than said maximum width so as to improve the pumping efficiency of the device. A method for manufacturing the device, and a method for controlling a fluid flow by means of such device, is also disclosed.

Probable Assignee: APR TECH AB

Earliest Publication Date: 20161204



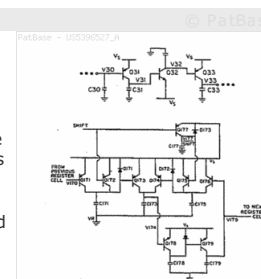
95) Family number: 11817262 (US5396527A)

RECOVERED ENERGY LOGIC CIRCUITS

Abstract: Source: US5396527A A logic circuit is driven by a single alternating voltage power supply so that the energy stored in parasitic capacitances can be mostly recovered, rather than dissipated, as in conventional logic designs. Successive stages of the logic circuit are of recovered conductivity types such that the successive stages are activated in alternate half cycles of the power supply without separate clock signals. Each stage of the logic circuit is precharged during a respective first half cycle of the power supply and is active in logical processing during a second half cycle. The half cycles are defined by the rising and falling edges of the power supply. The logic circuit resonates with an inductor coupled across the power supply but closely coupled to the logic circuit. This inductor and the method of charging and discharging the capacitors in the logic circuit serve to minimize the power dissipated during logical processing.

Probable Assignee: MASSACHUSETTS INST OF TECHNOLOGY

Earliest Publication Date: 19940203



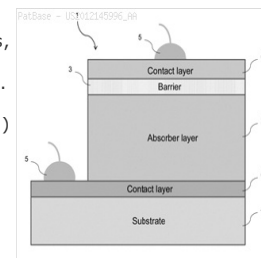
96) Family number: 51295231 (US2012145996A)

BARRIER INFRARED DETECTOR

Abstract: Source: US2012145996A A superlattice-based infrared absorber and the matching electron-blocking and hole-blocking unipolar barriers, absorbers and barriers with graded band gaps, high-performance infrared detectors, and methods of manufacturing such devices are provided herein. The infrared absorber material is made from a superlattice (periodic structure) where each period consists of two or more layers of InAs, InSb, InSbAs, or InGaAs. The layer widths and alloy compositions are chosen to yield the desired energy band gap, absorption strength, and strain balance for the particular application. Furthermore, the periodicity of the superlattice can be "chirped" (varied) to create a material with a graded or varying energy band gap. The superlattice based barrier infrared detectors described and demonstrated herein have spectral ranges covering the entire 3-5 micron atmospheric transmission window, excellent dark current characteristics operating at least 150K, high yield, and have the potential for high-operability, high-uniformity focal plane arrays.

Probable Assignee: CALIFORNIA INST OF TECHNOLOGY

Earliest Publication Date: 20120614



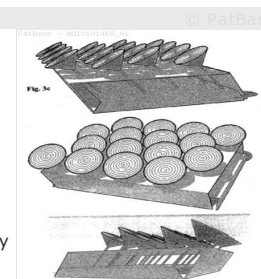
97) Family number: 46806116 (WO10101468A1)

MULTI-ELEMENT DEVICE

Abstract: The invention relates to a solar tracking system embedded in a flat package which exhibits no mechanical motion outside its form factor, and which can be compactly integrated in a fixed position into walls, roofs, etc of buildings or in free-standing structures. In addition to solar energy collection for the generation of electricity, the invention can be used for collecting and transmitting solar energy for heating and lighting applications. The invention employs a multi-element pointing array comprising at least two direction-critical elements capable of receiving and/or transmitting electromagnetic or acoustic radiation, wherein each element in the array is adapted to exhibit a pointing and/or alignment motion by rotating about one, two or three axes and moves in synchronism with other elements in the array, where at least two of said elements are directly or indirectly linked to at least two physical structures that can translate and/or rotate relative to each other.

Probable Assignee: GUDESEN HANS GUDE

Earliest Publication Date: 20100910



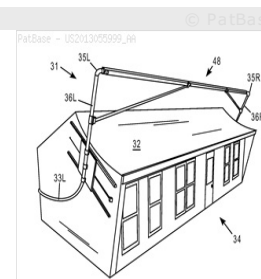
98) Family number: 53176363 (US2013055999A)

CONCENTRATING SOLAR ENERGY DEVICE

Abstract: Source: US2013055999A A concentrating solar energy device for use in buildings is configured to share structural elements with a building for cost savings. The device incorporates a shallow cylindrical trough mirror comprising mirrored sheets that are conformed to curved rafters, a receiver that is moveable within the cumulative area of focus of the cylindrical trough mirror, a secondary mirror integrated with the receiver that augments solar energy collection, and parallel linear tracking assemblies that move the receiver and that mount to a building's side walls.

Probable Assignee: FAIRSTEIN JOEL

Earliest Publication Date: 20130307



99) Family number: 49335227 (US2011182065A)

LIGHTING DEVICE WITH MULTI-CHIP LIGHT EMITTERS, SOLID STATE LIGHT EMITTER SUPPORT MEMBERS AND LIGHTING ELEMENTS

Abstract: Source: US2011182065A A lighting device in which a solid state light emitter in a first multi-chip light emitter is spatially offset relative to a solid state light emitter in a second multi-chip light emitter. A lighting device comprising first, second and third multi-chip light emitters, in which any solid state light emitter in the second multi-chip light emitter that is spatially offset relative to a first solid state light emitter on the first multi-chip light emitter by less than 10 degrees emits light of a hue that differs from the hue of light emitted by the first solid state light emitter by more than seven MacAdam ellipses. A solid state light emitter support member comprising a center region and at least first, second and third protrusions extending from the center region. A lighting device comprising at least a first housing member, and means for emitting substantially uniform light.

Probable Assignee: CREE INC

Earliest Publication Date: 20110728

