VT

ENERGÍAS MARINAS

Boletín 4º trimestre 2013

Vigilancia Tecnológica

MINISTERIO DE INDUSTRIA, ENERGÍA Y TURISMO

OEPM

inpi instituto nacional da propriedade industrial

Introducción

Las Energías Renovables Marinas constituyen en el presente un conjunto de fuentes energéticas que poseen un ingente potencial aunque su explotación se encuentra mínimamente desarrollada. El inmenso colector de energía que conforman los mares y océanos que, ocupando alrededor del 70% de la superficie del planeta y almacenando sobre $1.500*10^9$ m^3 de agua, son la mayor reserva energética renovable existente en el planeta.

Las Energías Renovables Marinas más relevantes son la Energía de las Olas (undimotríz) y la Energía de las Mareas (mareomotriz). Otras fuentes a considerar también en el medio marino son la energía eólica (offshore), la energía de las corrientes marinas (inerciales) y el gradiente térmico oceánico (OTEC).

La Península Ibérica cuenta con una ubicación privilegiada para el aprovechamiento de estas energías lo que constituye una sinergia que no se debe dejar pasar por los agentes institucionales entre cuyos objetivos está proteger e impulsar la innovación y el desarrollo industrial y económico de los países ibéricos, concretamente, las autoridades nacionales en materia de propiedad industrial de Portugal y España.

Este Boletín de Vigilancia Tecnológica (BVT) es el resultado de la colaboración hispano-lusa entre la Oficina Española de Patentes y Marcas (OEPM) y el Instituto Nacional de Propiedad Industrial de Portugal (INPI), y tiene como objetivo proporcionar el seguimiento trimestral de las últimas novedades y publicaciones de solicitudes de patentes internacionales (PCT) en el campo técnico de las Energías Marinas concretamente en las energías undimotriz y mareomotriz.

Este cuarto BVT que cierra el año 2013 y en que la colaboración INPI-OEPM cumple un año, muestra una clara continuidad en el número de publicaciones trimestrales y apunta a que es pronto para pronosticar un despegue de publicaciones PCT en este campo tecnológico.

En este BVT se presentan las estadísticas de 2013 hasta el cuarto trimestre por país de prioridad, por inventores, solicitantes y clasificación de las solicitudes internacionales publicadas bajo Tratado de Cooperación en materia de Patentes (Patent Cooperation Treaty PCT) seleccionadas sobre la base de la Clasificación Internacional de Patentes (IPC) y la Clasificación Cooperativa de Patentes (CPC) identificadas con el código F03B13/12 con los que se clasifican a nivel internacional las energías marinas, fundamentalmente las energías mareomotriz y undimotríz.

También se presentan noticias, eventos en este campo técnico en el ámbito peninsular así como una entrevista con Mikel Alberdi Goitia, un inventor de la Universidad del País Vasco.

Este Boletín se publica en portugués y en castellano en las correspondientes páginas web de ambas Oficinas Nacionales.

sumario

anexos

Energía Mareomotriz

Las mareas son una fuente renovable de energía absolutamente predecible cuyo aprovechamiento conlleva grandes retos técnicos y cuyo desarrollo comparado con otros aprovechamientos renovables es claramente incipiente. La Península Ibérica posee una costa apta para el aprovechamiento de la energía mareomotriz y las invenciones en este campo técnico son el medio para optimizar aprovechamiento minimizando al mismo tiempo el impacto ambiental y los costes económicos. A continuación, las publicaciones de solicitudes internacionales PCT en este campo técnico.

	Publicación	Solicitante	Resumen
1	WO 2013167760 A1 20131114	SANTASMARINAS RAPOSO EMILIO	Tidal power plant based on a first tank that stores water in the high-tide phase; a turbine system for obtaining electrical energy; an intermediate regulating tank arranged upstream that collects energy by means of turbines as the sea water is released; and a system for releasing the water into the sea via sluices.
2	WO 2013162520 A2 20131031	ANADARKO PETROLEUM CORP; BOLIN WILLIAM D	Various subsystems for a submerged or waterborne system used to generate power from fast-moving water currents using an induction-type generator equipped with fin-ring propellers. Means for transmission of power generated by such systems, tethering and mooring systems, and methods for improving transportation, installation and maintenance.
3	WO 2013156759 A1 20131024	TIDAL GENERATION LTD	A water-based power generating installation comprises a water based power generating device operable to derive power from a body of water, and to export that power via a power export cable, and an infrastructure arrangement for providing a power export connection from the installation, and including infrastructure equipment for the installation, whose infrastructure equipment serves to connect the power generating device with the power export connection.
4	WO 2013154421 A2 20131017	ORYON CONSULTANCY & DEV	A watermill device for use in flowing water, comprising water-guiding means that define at least one substantially horizontal flow channel with a water supply range situated upstream during operation and a water discharge range situated downstream during operation, at least one blade wheel provided in the flow channel and having a rotation shaft that is oriented substantially perpendicularly to the direction of flow, at least three blades which are designed such that when moving with a motion component in the direction of flow they have a comparatively high coefficient of resistance to the water flowing through the at least one flow channel and when moving with a motion component against the direction of flow they have a comparatively low coefficient of resistance to the water flowing through the at least one flow channel.

	Publicación	Solicitante	Resumen
5	WO 2013143086 A1 20131003	ZHANG CHAOLIANG	A tidal power generation device comprises a base platform provided above the sea level, a generator and a transmission gear set fixed upon the base platform. The transmission gear set connects to a longitudinal transmission rod, and a buoyancy tank is fixed on an end portion of the longitudinal transmission rod located on the sea surface level. The transmission gear set connects to an energy storage mechanism, and the energy storage mechanism has a transmission connection with a generator shaft. A transmission shaft of the tumbler gear transmission box is provided with a clawed wheel mechanism, said clawed wheel mechanism having a transmission connection with the energy storage mechanism.
6	WO 2013123923 A1 20130829 Late EPODOC Publication	SCHIEL HANS-JOSEF; LORENZ HERMANN HEINZ	A power plant for generating electrical energy, comprising at least one accumulation device for accumulating or storing water from a natural or artificial body of water, wherein the accumulation device has at least one passage, in which the flow velocity of the water is increased, and a power generator, a rotational device or a turbine, having a coupled electrical generator for generating electricity, arranged in or on the passage of the accumulation device and driven by the water flowing through the passage.
7	WO 2013030582 A2 20130307 Late EPODOC Publication	MITCHELL JOHN STEPHEN	A vertical axis turbine is disclosed, comprising a body being configured to rotate about a rotational axis; an array of vanes connected to the body and arranged around the rotational axis; the vanes each having first and second connection points and being connected to the body at the first connection point, located on a first side of a centre of pressure of the vane and being rotatable; the vanes being releasably engagable with the body at the second connection point, located on a second side of the centre of pressure of the vane. A turbine assembly including reversible flow guides and an array of marine turbines combined with an array of wind turbines are also disclosed.

Energía Undimotriz

Las olas de los mares y océanos son una fuente renovable de energía con un alto potencial para las costas atlánticas. Que ya en el siglo XVIII se propusieran invenciones para aprovechar la energía de las olas no le resta perspectiva a las diversas tecnologías que hoy en día se proponen para instalaciones tanto en tierra como en estructuras flotantes. Las invenciones en este campo técnico plantean cada vez mayores rendimientos en el aprovechamiento de la energía undimotriz y un mayor respeto al medio ambiente marino. A continuación, las publicaciones de solicitudes internacionales PCT en este campo técnico.

	Publicación	Solicitante	Resumen
1	WO 2013188397 A1 20131219	RESOLUTE MARINE ENERGY INC; CHERTOK ALLAN	A linear array of wave-energy converters includes at least two oscillating wave surge converter components. Each component includes a paddle and a hinge configured to attach the paddle to a stationary surface. The components are arranged in an end-to-end configuration with a narrow, vertical region separating vertical edges of adjacent components. Efficiency-reducing flow through this vertical region is minimized both by minimization of the vertical region's size and by paddle shapes that direct flow away from the region.
2	WO 2013185466 A1 20131219	WANG MENGCHUAN	A simple and direct wave power generating device, which floats on the water surface and the main structure of which can deform synchronously with the wave movements. The wave power generating device comprises flexible piezoelectric material generating electricity by deforming synchronously with the wave movements, and a flexible-bag to adjust weight and float height. The device also comprises a large number of hard small components and hard piezoelectric material is set between the collision position of the hard small components to generate electricity. The device can also be used as a floating bridge for water traffic, and to support work and entertainment facilities.
3	WO 2013181701 A1 20131212	DDNT CONSULTANTS AUSTRALIA PTY LTD	Power generator consisting of a casing subjected to motion caused by the motion of waves. The casing contains one mass coupled with a spring to the casing. A series of masses are coupled adjacently by springs between themselves and to the first mass. The differential motion caused by the waves between stator and field sources located in the casing and the masses generates electrical power.
4	WO 2013181702 A1 20131212	DDNT CONSULTANTS AUSTRALIA PTY LTD	Power generator control device consisting of a buoyant casing subjected to motion caused by the motion of waves. The casing contains one counterweight assembly movable within the casing and a device that restores energy. The differential motion caused by the waves between casing and counterweight allows control of the generated power and its storage in a power storage device and avoids the need of a mechanical foundation.

	Publicación	Solicitante	Resumen
5	WO 2013182837 A1 20131212	MACE WAVE LTD	Wave energy converter with a first body assembly floating on the water and a second floating body connected to the first body. Energy harvesting means collect the energy produced by the relative anti-phase motion between both bodies. The energy converter properties are tuneable to optimize the power generation in the particular wave field.
6	WO 2013177491 A1 20131128	UNIV MASSACHUSETTS; MACDONALD DANIEL G; GREEN BRANDON E; CANTARA JUSTIN; NATHAN CRAIG; LOPES AMY M	Generating electrical energy from wave motion includes a linear-to-rotary convertor and a float unit that moves vertically in response to the motion of waves. A force field generating component generates the electricity in response to the buoy's vertical motion.
7	WO 2013176535 A1 20131128	ORTEGA GARCIA MIGUEL DE JESUS	Wave capture module that generates electrical energy by means of the capture of the waves by the buoy of a primary lever and the buoy of a secondary lever. The two levers convert the amplitude and frequency of the waves into the driving rotation of the drive shaft of the right-hand composite reel and the left-hand composite reel.
8	WO 2013174221 A1 20131128	QU YANMING	A wave power collection control device that comprises return springs, a stepper motor, transducers, a single chip microcomputer control module and a power source. When a single chip microcomputer detects that the pulling force is too large or too small, an instruction is sent to the stepper motor for adjustment. When the adjustment is completed, the stepper motor stalls and brakes, so that the return springs can work within a specified range.
9	WO 2013174220 A1 20131128	QU YANMING	A wave power collection apparatus comprises a floating body, a drum, and an anchorage or a fixed platform. The floating body is a fully enclosed housing; the spindle of the drum enters into a floating body cavity by penetrating through a hole with a seal ring. Further elements are a rope winding mechanism, guide wheels and a support. The apparatus has strong impact resistance, is self-correcting, is easily maintained, and low in cost.

	Publicación	Solicitante	Resumen
10	WO 2013170450 A1 20131121	WANG WEIJUN; LI BIN	A floating ball in each single-point wave energy absorption and conversion system absorbs and converts wave energy into mechanical energy by rotating in a single direction through a combination effect of mechanical energy conversion and buffering, and stably transmits the mechanical energy to the power generation system.
11	WO 2013170496 A1 20131121	GUANGZHOU INST ENERGY CONV CAS; YOU YAGE; SHENG SONGWEI	A floating hawknose-type wave power generating device with a semi-submersible feature, comprising an eagle-head-shaped wave absorption floating body, a ship-shaped underwater appendage and a door-shaped support arm. The device converts wave energy and is favorable for reducing initial nvestment and maintenance costs, improving typhoon resistance, and prolonging working life.
12	WO 2013169341 A2 20131114	BOEING CO	Inmersed system for converting fluid motion into electrical power that includes a support structure on the seabed and a movable structure The support structure includes a generator assembly. The movable structure has three or more degrees of freedom and is moved by the fluid motion. The movable structure has different configurations during the power generation phase and during the recovery phase of the power cycle.
13	WO 2013167667 A2 20131114	SINGLE BUOY MOORINGS	An electromechanical energy conversion system includes a variable capacitor, an electronic charging/discharging unit and a power source/sink; the gap distance of the variable capacitor being adjustable between a minimal distance and a maximal distance as a function of an externally applied mechanical force, for instance wave motion.
14	WO 2013166529 A1 20131107	FRIEDENTHAL REGINALD	Apparatus supported on the sea bed for harvesting energy directs the air flow through a turbine with thick vane edges. The air flow is caused by the pressure exerted by the wave motion at water level.
15	WO 2013164555 A2 20131107	EDWARDS DOUGLAS	Work or electricity generated from wave energy using a buoy, a cable descending into the water, with a weighted section at the bottom and at least one rotary bladed system or one piston pump. Both designs can be incorporated into a submerged platform or into the sea bottom where the majority of the hardware is safe from storms, waves and shipping.
16	WO 2013160617 A2 20131031	GEPS INNOV	An energy recovery device that has a central compartment in which a turbine is arranged that is positioned between the at least first and second compartments. Wave motion causes the water to flow between the compartments via side valve systems and a central throttling channel. One specific feature is that an adjustable stopper is arranged substantially at the throttling channel.

	Publicación	Solicitante	Resumen
17	WO 2013159056 A1 20131024	CHEVRON USA INC	A wave energy collection facility that includes a support structure having a columnar volume with a first opening and a second opening and a movable piston plate housed therein. A buoyant system surrounding the support structure that is coupled to the piston plate by a linkage system causes an air flow within the columnar volume in response to the oscillation of the water level. A turbine included in the support structure rotates in response to air flow and hence electric power is produced.
18	WO 2013157016 A1 20131024	DEVANAND TOTARAM INGLE	A system and method for producing electrical energy by absorbing wave energy. The system includes floating elements and one way systems coupled to the floating elements and configured to reciprocate in a vertical direction. The floating movement of the floating elements exerts pressure for enabling the reciprocation in vertical direction. The system further includes a vertically elevated supporting poll for receiving energy from the plurality of one way systems fastened to a plurality of bearing systems, a balanced wheel fastened to the vertically elevated supporting poll and configured to receive rotational energy from the vertically elevated supporting poll, a main gear for receiving the rotational energy transferred by the balanced wheel and a generator with a gear system, whereby a rotation of the main gear over the gear system enables the generation of electricity.
19	WO 2013156674 A2 20131024	WELLO OY	A method for converting the energy of water waves into electricity by means of a wave power plant, which comprises a floating body, a rotor which is supported on the body and rotates around a rotor shaft which is on average vertical, a gyro which rotates around a gyro shaft which is on average horizontal, the gyro and the gyro shaft rotating with the rotor around the rotor shaft, and at least one generator, which is connected to rotate together with the gyro or the rotor. The inclination and acceleration are caused by directing the internal flows of the wave at the submerged part of the body. The moment generated by the gyro is used to equalize the said inclination and acceleration moments during the revolution and the kinetic energy of the gyro is used as an energy reserve to equalize the effective output of the wave power plant.
20	WO 2013156637 A1 20131024	MARTINEZ LOPEZ SANTOS	A device for transforming wave power into electric power by cumulative twisting moments or forces, which by means of a system of turbines aligned in series in the wave breaking area and actuated by the power thereof, transmits and multiplies said power by the total number of turbines. A number of waves equal to the number of turbines in the device is required in order to complete the first cycle. The subsequent cycles take place with the incidence of a single wave, since the system enables the release of the turbine preceding that which is rotating, achieving a complete cycle with each wave.

	Publicación	Solicitante	Resumen
21	WO 2013156584 A2 20131024	WEISS OLIVER	In a device having at least one energy generator for producing energy by using wave movements, wherein a floating body is moved by the wave movement and the movement is converted into energy, an energy consumer is intended to be directly assigned to the at least one energy generator.
22	WO 2013153052 A2 20131017	UNIV LIMERICK	A self-rectifying turbine system has a turbine with impulse turbine blades. There is a set of first guide vanes on one axial side of the rotor, and second guide vanes on the other axial side of the rotor A controller takes inputs from sensors to detect gas movement within the conduit on at least one axial side of the turbine, and a drive mechanism for rotating the first and second guide vanes. The controller causes rotation of the first and second guide vanes so that they simultaneously alternate between nozzle and diffuser angles as gas direction in the conduit changes.
23	WO 2013189500 A1 20131010	SUBCPARTNER HOLDING APS	A wave power converter including a housing inside of which there is a distance limiting structure, and through which there is a central axis, and wherein entirely or partially outside the housing there is at least one paddle. A first power converter interacts with at least one second power converter as a first end of a piston rod via a flexible joint is fastened to the first power converter, and as a second end of the piston rod has a piston adapted for linear motion along a second generatrix in the at least one second power converter which includes a linear chamber surrounded by a casing upon which is provided a rotatable and pivotable connection to the housing at the bottom in continuation of the second generatrix.
24	WO 2013150320 A2 20131010	CHORIANOPOULOS DIMITRIOS	A floating mechanical hydraulic electrical set of constructions that exploit the kinetic energy of waves and convert it to electric energy and drinking water. The mechanical hydraulic electrical set consists of the marine system and the grounded system. The marine floating system contains the anchorage, the floating tower, the counterweight that retains the floating tower at a vertical position, the hydroturbine, the air turbine, the arms with the floats, which are placed on the floating tower in such a way that in combination with the hydraulic pistons it follow the oscillating movement of the waves. The grounded system includes the air-pressurized pressure machines, the hydraulic engine, the current generator, the reverse osmosis membranes, the electrovalves, the valves and the piping.

	Publicación	Solicitante	Resumen
25	WO 2013143482 A1 20131003	WAVES NEW ENERGY LTD; LI XIAOCHUN	A sea wave power generation device comprises a motion bar, a platform, a platform-supporting upper upright post which is used for supporting the platform, a platform-supporting lower upright post, a hydraulic lift post, a flywheel which is connected to power generation equipment, and a platform lift control device, wherein sea waves push a floating ball to drive the motion bar upwards, a rack section of the motion bar drives a first flywheel at one side to rotate, and the first flywheel drives a generator to generate power through a spindle; the floating ball drives the motion bar to move downwards under the action of gravity, the rack section of the motion bar drives a second flywheel at the other side to rotate, and the second flywheel drives the generator to generate power through the spindle, thereby achieving continuous power generation.
26	WO 2013011318 A2 20130124 Late EPODOC Publication	FOTHERGILL ALEXANDER	A drive assembly for providing a driving force to generate electricity is disclosed. The assembly comprises: a first track and a second track, a first vehicle which is arranged to travel along the first track between a first drive location and a first idle location to drive a shaft in a first direction and to cause a second vehicle to travel along the first portion of the second track between a second idle location and a second drive location; the second vehicle is also arranged to travel along the second portion from the second drive location to the second idle location to cause the drive shaft to rotate in a second direction and to cause the first vehicle to travel from the first idle location to the first drive location.

Energías oceánicas diversas

En esta sección figuran las solicitudes internacionales PCT que se refieren a tecnologías que pueden aplicarse tanto a la energía de las olas como de las mareas.

	Publicación	Solicitante	Resumen
1	WO 2013183746 A1 20131212	YAMAMOTO KAZUE	Power generation device capable of using the rising and falling motion of rods and turning motion of a spherical body to achieve stable motive power.
2	WO 2013180645 A1 20131205	SUN YU-LI	Two parts have relative motion between them. The motion is caused by the action of waves, tides or wind. Energy harvesting means collect power caused by the relative motion. One embodiment refers to a bouyant second part with a central pillar that supports the moving first part which has a weight element. Both parts are connected by energy harvesting elements.
3	WO 2013178996 A1 20131205	TIDAL GENERATION LTD	A Connection system for underwater power generation units that allows linear and rotational movement between electrical connections.
4	WO 2013150276 A1 20131010	GREENSTICK ENERGY LTD	A moving device that is suitable for use in water. The mooring device comprises a pile configured to be embedded in a floor supporting the body of water; a joint configured to couple the pile and the at least one arm and permit rotation of the at least one arm relative to the pile; and joint locking means configured to lock the joint. A method of mounting the mooring device in water, a mooring system comprising multiple mooring devices and a system comprising the mooring devices are also disclosed.
5	WO 2013148243 A1 20131003	SWAMIDASS PAUL	Highway bridge supporting structures that stand in large bodies of water are usefully employed in a novel manner in this invention to extract energy from the water under the bridge using new and established apparatus. This invention uses existing or new bridge structures for mounting water-borne-energy to electricity conversion systems at reduced cost. The invention will make water energy conversion systems more affordable and will turn existing and new bridge supporting structures into dual-use systems that can not only support bridge decks above but also produce useful renewable energy from the water below.

	Publicación	Solicitante	Resumen
6	WO 2013144792 A2 20131003	DUFEU LOPEZ JORGE	High capacity devices as well as a plant for generating electricity, capturing kinetic energy from ocean currents and sea waves by means of fluid deflectors mounted on endless belts or chains, comprising continuous and progressive capture power modules, mounted on floating structures that are maintained with respect to the sea level wherein hydraulic flows passing through said structure linearly operate the fluid deflectors, in a cumulative mechanical process of energy capture. The plant comprises an anchor, floating structures, a plurality of kinetic energy converters from water or wave currents into a primary energy flow, a converter room for converting primary power into conveyable electricity and an electric control and protection system.
7	WO 2013075192 A1 20130530 Late EPODOC Publication	MONTEIRO DE BARROS MARCELO	Device for the generation of electrical energy by aerodynamic or hydrodynamic forces. It is formed by a double electrical energy-generating turbine that contains two separate electromagnetic field assemblies for generating energy. One assembly is located on the outer radius and the other is located on the inner radius of the turbine. These two generator assemblies are connected by variable-angle blades for controlling the angular speed of the turbine. The energy generated, its rectification, power addition, storage and distribution are managed by the control CPU. The underwater turbines generate energy in river streams, sea currents and from tidal waves. They can be mounted onto a tower structure or separately.

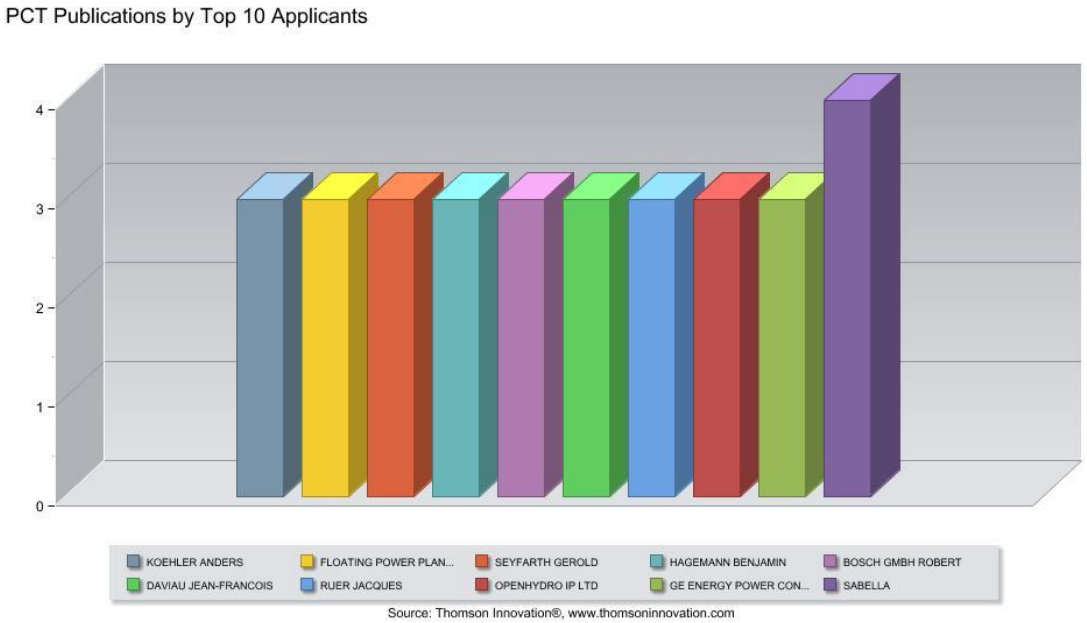
ESTADISTICAS

Las estadísticas de este BVT están centradas en las publicaciones PCT relativas a la energía de las olas e de las mareas, de los tres primeros trimestres del año 2013.

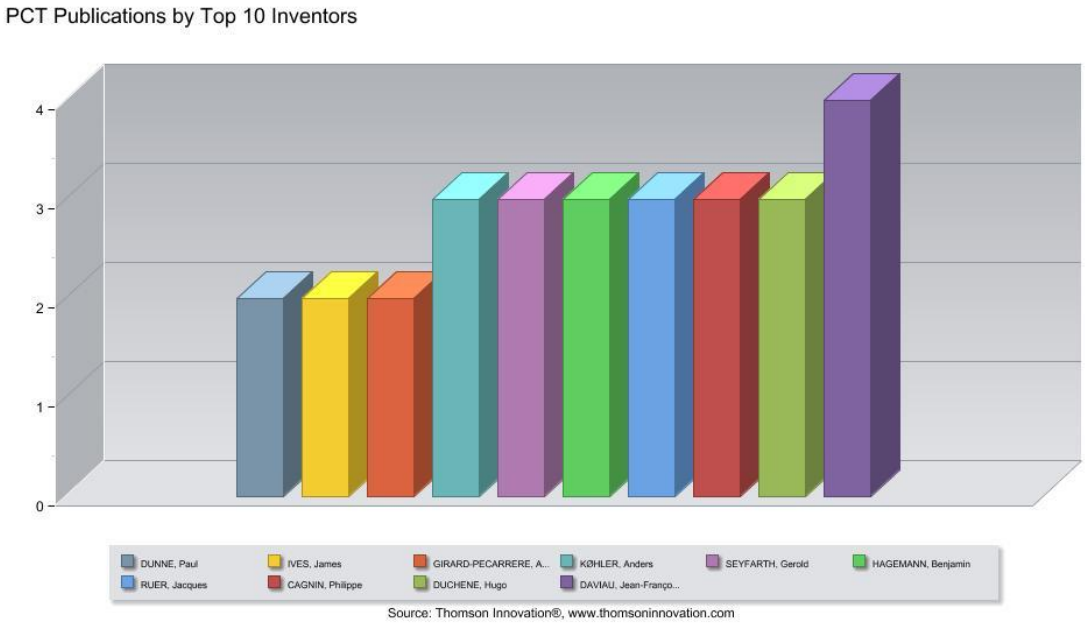
Se presentan datos estadísticos relativos a las Publicaciones PCT (1) de los 10 solicitantes más frecuentes, (2) de los 10 inventores más frecuentes, (3) de los 10 países prioritarios más frecuentes, así como (4) de las 10 clasificaciones IPC más frecuentes.

La herramienta utilizada para la producción de estos gráficos (Thomson Innovation) utiliza la clasificación principal de cada publicación. Se observa que en la gráfica relativa a las clasificaciones IPC más frecuentes además de la clasificación más general F03B13/12, que engloba a las energías undimotriz y maeromotriz también se presentan las clasificaciones de áreas técnicas cercanas y, concretamente , las clasificaciones jerárquicamente inferiores que son específicas para las olas y las mareas.

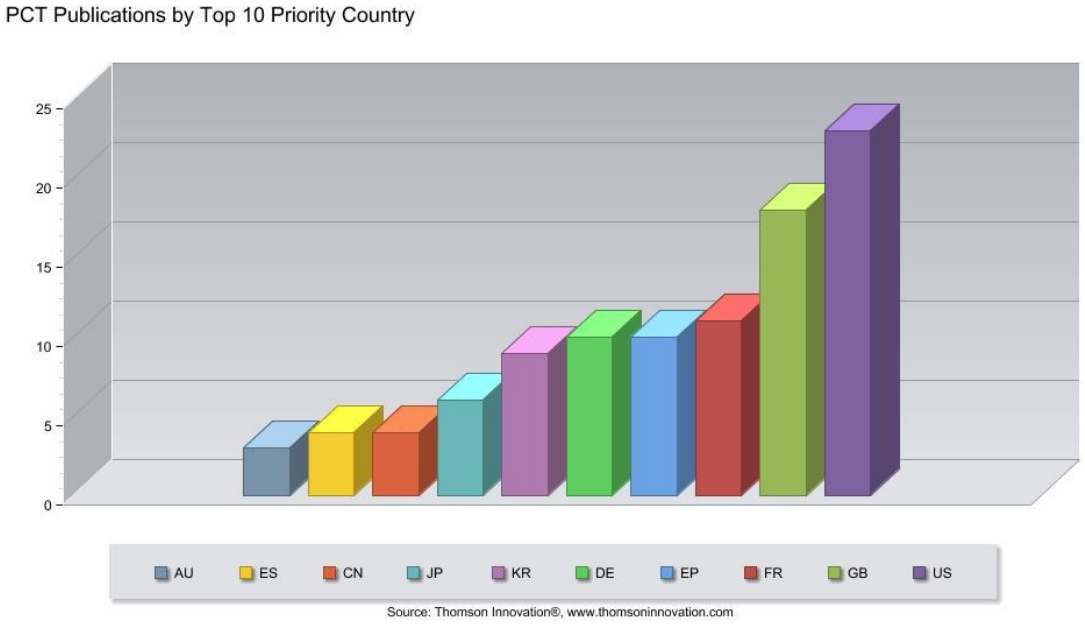
1.- Publicaciones PCT en 2013 de los 10 solicitantes más frecuentes.



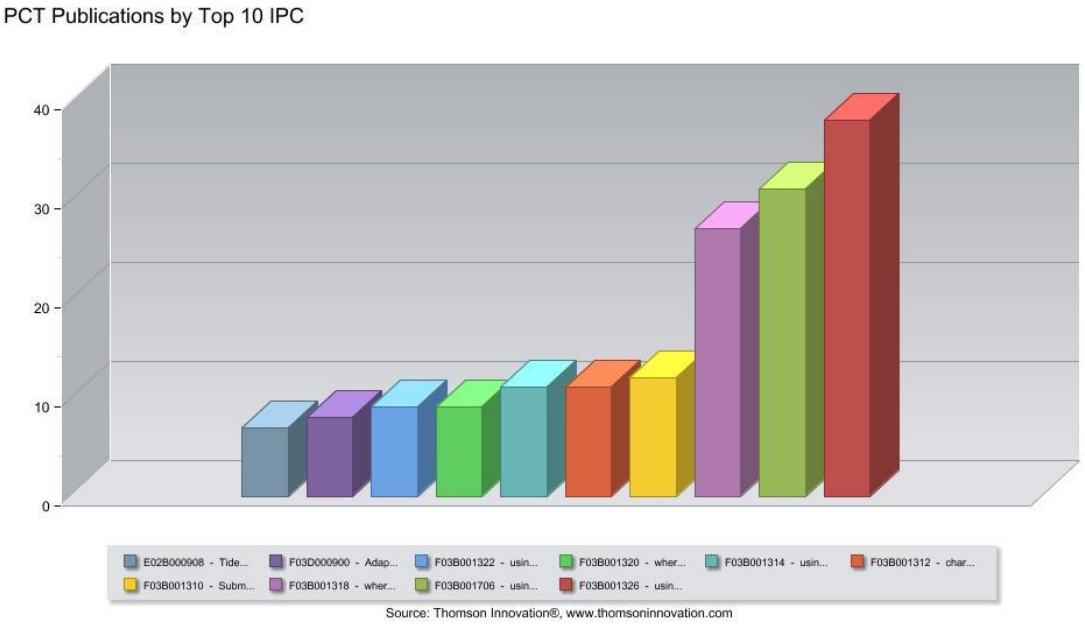
2.- Publicaciones PCT en 2013 de los 10 inventores más frecuentes



3.- Publicaciones PCT en 2013 de los 10 paises de prioridad más frecuentes.



4.- Publicaciones PCT en 2013 de las 10 clasificaciones IPC más frecuentes.



F03B 13/12· characterised by using wave or tide energy

F03B 13/14· · using wave energy [4]

F03B 13/16· · · using the relative movement between a wave-operated member and another member [4]

F03B 13/18· · · · wherein the other member is fixed, at least at one point, with respect to the sea bed or shore [4]

F03B 13/20· · · · wherein both members are movable relative to the sea bed or shore [4]

F03B 13/22· · · using the flow of water resulting from wave movements, e.g. to drive a hydraulic motor or turbine [4]

F03B 13/24· · · to produce a flow of air, e.g. to drive an air turbine [4]

F03B 13/26· · using tide energy [4]

Noticias del sector

El puerto de Garachico estudia autoabastecerse con la energía de las olas

El ente público Puertos Canarios estudia la posibilidad de que el puerto de Garachico se autoabastezca de energía gracias a la fuerza de las olas. En concreto, se está analizando el proyecto piloto de una empresa noruega especializada en la energía mareomotriz, que podría ser capaz de abastecer a las instalaciones del este puerto del Norte de Tenerife.

El objetivo de este proyecto piloto es demostrar que a través de la energía marina se puede abastecer enérgicamente las instalaciones portuarias, con lo que se abriría todo un campo nuevo para la mejora y la sostenibilidad de los 17 puertos de interés general que gestiona la Comunidad Autónoma.

Fuente: El Dia (02/10/2013)

EE.UU. prueba la tecnología de energía de las olas desarrollada en Portugal

El Departamento de Energía de los EE.UU. establecerá una infraestructura de pruebas para prototipos de aparatos generadores de energía procedente de las olas similar a la que existe en Portugal. Este proyecto cuenta con un presupuesto de 50 millones de dólares.

Según Sam Blakeslee, Director de Tecnología Avanzada de la Universidad Politécnica de California, "la energía de las olas es una de esas tecnologías que están a la espera de una oportunidad". Él explica que "los prototipos de máquinas de energía de las olas, como los que existen en Portugal, absorben energía de las olas y transmiten electricidad a través de cables submarinos". Además de la Universidad Politécnica de California, también presentaron solicitudes para el desarrollo de este proyecto universidades en los estados de Washington y Oregon, en la costa este de los EE.UU.

Fuente: KSBY (12/12/2013)

Un parque undimotriz abastecerá en Lanzarote al complejo turístico La Santa

La empresa escandinava Langlee Wave Power planea instalar en la costa norte de Lanzarote cuatro convertidores para generar electricidad gracias a las olas.

La empresa noruega Langlee Wave Power planea instalar en la costa norte de Lanzarote un parque de cuatro convertidores de energía undimotriz para generar, gracias a las olas, electricidad con la que abastecer al complejo turístico de La Santa, según han informado este viernes las dos compañías.

En concreto, Langlee Wave Power proyecta colocar en Lanzarote cuatro convertidores semisumergidos de energía de las olas de 132 kilovatios hora de potencia cada uno (528 Kvh, en total). La compañía noruega sostiene que este parque de generadores undimotrices será el primero con fines comerciales de Europa.

Fuente: Canarias Ahora (20/12/2013)

Proyecto pionero para la explotación comercial de la energía de las olas

Pelamis, una empresa con sede en Edimburgo, irrumpió con el primer proyecto de energía undimotriz comercial en el norte de Portugal. Sin embargo, este proyecto no tuvo mucho éxito debido a problemas técnicos.

El P2 es una pieza importante de un kit industrial: una serie de cinco grandes tubos de acero, que pesan 1.350 toneladas cuando el lastre está en su valor máxima. Es también la realización de un sueño largamente acariciado, pero muchas veces frustrado: capturar la energía de las olas que sin fin acarician las frentes de mar por todo el mundo.

Desde hace décadas, la energía de las olas ha sido una fuente de decepción. Lejos de la playa, las olas se transforman y son diabólicamente complejas, por lo que es muy difícil capturar la energía que contienen. El agua salada y tormentas contribuyen a un entorno operativo implacable. No es la primera vez que el Pelamis se enfrenta a los contratiempos. La compañía fue pionera en el primer proyecto de energía undimotriz comercial en el norte de Portugal, sin embargo, después de unos meses, fue necesario remolcar a puerto las primeras tres maquinas para reparaciones.

Fuente: Financial Times (06/12/2013)

Entrevistas

Mikel Alberdi Goitia (Bilbao, 1965) es Profesor del Departamento de Ingeniería de Sistemas y Automática de la Escuela Universitaria de Ingeniería Técnica Industrial de Bilbao de la Universidad del Pais Vasco. Forma parte del grupo de investigación "Grupo de Control Automático", constituido por un grupo de 10 investigadores que trabaja sobre la conversión de la energía de las olas y desde hace más de 6 años con resultados en forma de publicaciones y patentes. En la actualidad participa en proyectos financiados por el Gobierno Vasco y empresas privadas vinculadas a la corporación tecnológica Tecnalia. Tiene en su haber numerosas publicaciones científicas así como una solicitud de patente internacional PCT publicada este año.

P: ¿Cuál es la perspectiva a largo plazo que ofrece la energía undimotriz en el ámbito del I+D a nivel estatal?

R: Es de esperar que sea similar a la que tuvo en su día la aerogeneración, porque comparten factores como son las energías renovables, el uso de una tecnología alcanzable a medio plazo y ser un tractor económico que contribuya al desarrollo del entorno económico y social.

P: Como investigador e inventor, cuantifica el esfuerzo que ha supuesto la solicitud internacional PCT que recientemente te ha sido publicada en comparación con otras publicaciones científicas de las que eres autor.

R: La solicitud de patente internacional PCT es, en mi caso, resultado del trabajo de investigación realizado en el doctorado y por lo tanto supone un esfuerzo continuado en el tiempo, que requiere de una dedicación casi exclusiva.

P: ¿Crees que la actual situación económica está afectando gravemente los proyectos que tenéis en marcha en tu equipo de investigación?

R: La falta de dinero público y privado, está provocando problemas de financiación que retrasan la participación en los proyectos que el Ente Vasco de la Energía está impulsando en Euskadi y que son dos principalmente: el BIMEP (Biscay Marine Energy Platform) cuyo fin es crear un área de ensayos frente a la costa de Armintza (Bizkaia) para la demostración de convertidores del oleaje y la planta undimotriz de Mutriku (Gipuzkoa), de tecnología OWC, que consta de 16 cámaras-turbina con una potencia instalada 296 kW.

P: ¿Colaboráis a nivel nacional e internacional con otros equipos de investigadores? ¿A qué nivel crees que se sitúa la I+D del estado español frente la de otros países con relevancia en la energía undimotriz?.

R: A nivel nacional colaboramos con Oceantec, empresa promovida por Iberdrola y por la Corporación Tecnalia**.** A nivel internacional acabamos de iniciar el proyecto de investigación denominado "Aprovechamiento de la energía del oleaje en Aquitania-Euskadi" en el colaboramos con la Universidad de Pau y Pays de l'Adour, y más concretamente con el laboratorio SIAME, internacionalmente reconocido en modelización del oleaje.