

# VBT

## ENERGÍAS MARINAS

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Vigilancia Tecnológica



MINISTERIO  
DE INDUSTRIA, ENERGÍA  
Y TURISMO



inpi instituto nacional  
da propriedade industrial

### Introducción

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Las Energías Renovables Marinas constituyen en el presente uno de los conjuntos de fuentes energéticas que, poseyendo un ingente potencial, su explotación se encuentra mínimamente desarrollada. Su origen está constituido por el carácter de inmenso colector de energía que conforman los mares y océanos, que ocupando alrededor del 70% de la superficie del planeta y almacenando sobre  $1.500 \cdot 10^9 \text{ m}^3$  de agua, son la mayor reserva energética existente en la tierra y además de carácter renovable.

Las Energías Renovables Marinas más relevantes en la actualidad podríamos clasificarlas en energía de las Olas (undimotriz), 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.

En este undécimo BVT se presenta una estadística de 2015 hasta el tercer trimestre por país de prioridad, por inventores, solicitantes y clasificaciones de las solicitudes internacionales publicadas bajo Tratado de Cooperación en materia de Patentes (Patent Cooperation Treaty PCT). Están 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 undimotriz.

También se presentan noticias en este campo técnico en el ámbito peninsular así como una entrevista con Tiago Pitta e Cunha, Consultor del Presidente de la República Portuguesa para Asuntos Marinos

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

sumario

Energía Mareomotriz

Energía Undimotriz

Energías Oceánicas diversas

anexos

Estadísticas

Noticias del sector

Entrevistas

## 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	<a href="#">WO 2015106921</a>	VOITH PATENT GMBH	Device for reversing the blades for an impeller wheel in a tidal power plant, comprising a servo motor for adjusting the blades, said servo motor being coupled to a cross-head via a linkage element. Connecting rods and levers which are mounted on the cross-head are coupled to the blades. The disclosed device further comprises an auxiliary motor for moving the levers past the dead center position. Said auxiliary motor is simultaneously coupled to all the levers of the blades via gear wheels.
2	<a href="#">WO 2015110364</a>	MARINE CURRENT TURBINES LTD	Submersible turbine assembly lift frame comprises a propulsion device, remotely operable pitch angle adjuster, a remotely operable roll angle adjuster and a remotely operable coupling for coupling the frame to the turbine assembly.
3	<a href="#">WO 2015116016</a>	SIDORENKO YURI GRYGOROVYCH BEYLIN GEORGIY VOLODIMIROVICH PETRENKO SERGIY YRIIOVYCH	Floating wind-driven power plant comprising a platform mounted on an annular pontoon has a converter for converting wind energy into electrical energy, the converter being in the form of a wind wheel with a shaft, and an electric generator; according to the invention, the wind wheel is mounted with a vertical rotation axis and with the shaft, which is connected by spokes to a wheel rim, on which rotatable vane-type blades are mounted, and the plant is supplemented by a converter for converting water energy into electrical energy, the annular pontoon is in the form of individual, vertical, cylindrical floats interconnected by tubular elements, and is equipped with anchors, and the platform is manufactured in the form of an annular monorail, wherein the converter for converting water energy into electrical energy is in the form of outboard brackets which are mounted on a lower part of the wind wheel, which part is intended for placement in a body of water, said brackets being arranged radially relative to the axis of the wind wheel, and an electric generator which can be set into action by a hydro-turbine propeller is fixed on the free end of each bracket.
4	<a href="#">WO 2015124946</a>	SGURREENERGY LTD	Improving the efficiency of an energy capture device by analysis of the downstream fluid wake created by the energy capture device. The system comprises a sensing arrangement configured to acquire fluid flow data from a downstream wake comprising a Lidar unit having an optical source and a receiver. In use, the sensing arrangement acquires data relating to the fluid flow velocity in the wake, which data is then processed to determine the relative angle of the turbine and the average direction of the incident resource. Applicable to wind and tidal turbines.



## 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	<a href="#">WO 2015092769</a>	HOBBINARINABAD TAGHI	The efficiency rises in liner rail turbine with piston and flexible vanes which its rowing vanes are placed on the longitudinal axis of turbine in a radial and perpendicular manner and as a result of stroke with fluid receive its energy and transfer it to augmentative gearbox by chain, shaft, bearing and finally to the generator in order to turn it into electricity. Increases energy extracting efficiency, since the drag force exerted on the vanes is reduced, and river waves directly hit the vanes in their flow. The system allows for installation in seas or rivers in stable or floating manner, or in infrastructures of river bridges. The system converts kinesthetic movement of irregular waves along the turbine into electricity with maximum efficiency.
2	<a href="#">WO 2015095983</a>	WU GUANGQING	Wave-kite power generation system, consisting of a closed ship body, a turbine, a safety cover, a cable, a buoy, a generator cable, an seafloor pile, an ashore cable, a gear box, a synchronous generator, a rectifier and an inverter. The turbine is made as a single-vane turbine, the turbine, the safety cover, the gear box and the inverter being formed into a single machine. When sea waves change direction, the ship body can automatically adjust the direction to ensure that the turbine faces toward the direction of the sea waves.
3	<a href="#">WO 2015099538</a>	VIVID AS	Multi-stage gas compressor apparatus in a two-stage version comprises a first cylinder, forming a cylindrical chamber, and a second cylinder arranged concentrically with the first, forming an annular chamber. A first circular piston is axially movable within the first cylindrical chamber, and a second, annular piston axially movable within the annular chamber. A force - exerting member is connected to the first and second pistons. A first one-way valve is arranged to allow gas transfer from a gas inlet to an end portion of the annular chamber. A second one-way valve is arranged to allow gas transfer from the end portion of the annular chamber to an end portion of the cylindrical chamber. A third one-way valve is arranged to allow gas transfer from the end portion of the cylindrical chamber to a gas outlet. The force - exerting member may be attached to the sea bottom, and the apparatus may be provided with a floating element which causes the apparatus to float on the sea surface while the pistons are anchored to the sea bottom.

#	Publicación	Solicitante	Resumen
4	<a href="#">WO 2015101691</a> Spanish Inventors	WIND INERTIA TECHNOLOGIES S L	System for the microgeneration of energy in on-board devices, comprising a microgenerator connected to adaptive circuitry which is, in turn, connected to a hybrid energy storage system consisting of a primary non-rechargeable cell and a secondary rechargeable cell, for producing high energy density and high power. The microgenerator is an oscillating system formed by at least one overhanging piezoelectric plate, restrained at one end and having a mass on the other end, such that certain movements on the vessel cause an oscillatory movement affecting said piezoelectric plate, exciting same and generating an electric current.
5	<a href="#">WO 2015102547</a>	HSE HITIT SOLAR ENERJI ANONIM SIRKETI	Energy production system generating energy from waves occurring in a water body comprises a column, having a side remaining in water, and another side comprising a fluid; an output valve in the form of a check valve disposed at the part of the column remaining above water and, when a wave crest reaches the column, assumes the open state with the increasing internal pressure of the column and thus allows said fluid to flow out of the column; a turbine is in communication with the output valve from the turbine inlet, and which, by taking the fluid, which is output from the column through the output valve, in through the turbine inlet, is actuated and thus generates mechanical energy; and an intake valve in the form of a check valve which is disposed at the part of the column remaining above water, is in communication with the turbine from the turbine outlet.
6	<a href="#">WO 2015103828</a>	SHENZHEN ZHONGNENGJIAN S & T RES INST CO LTD	Wave energy generation system, comprising floating body boxes and coupling rocker arms. Generators are arranged in the floating body boxes. Driving rotation shafts are arranged on the floating body boxes. Torque converting devices are also arranged in the floating body boxes. Within an area range, a large number of floating body boxes can be arranged, the energy contained in waves can be fully used, the energy conversion efficiency can be increased by increasing the water discharge amount of the floating body boxes and using the torque converting devices, and the mechanical strength of the high-power wave energy generation system can be improved, so as to deal with the impact of wind and waves.
7	<a href="#">WO 2015104445</a>	AW ENERGY OY	Surface level follow-up arrangement for a wave energy recovery unit comprising at least a panel element hinged at its lower edge onto the base at the bottom of the sea with the help of one or more support structures and one or more support shafts to make a reciprocating motion in response to kinetic energy of waves or tidal currents. The arrangement comprises at least a surface level follow-up means capable to change the vertical position of the upper edge of the reciprocating panel element along with the change of the vertical position of the surface level caused by a tidal fluctuation.
8	<a href="#">WO 2015107158</a>	NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY	Wave energy convertor for extracting energy from ocean waves, comprising a buoy arranged to oscillate relative to a reference point about an equilibrium position and a negative spring device connected between the buoy and the reference point, wherein the negative spring device is for applying a positive force in the direction of displacement when the buoy moves away from the equilibrium position.

#	Publicación	Solicitante	Resumen
9	<a href="#">WO 2015113777</a>	GREGORY BRUCE	A wave energy converter can be dynamically tuned to achieve resonance with ocean swell by varying the geometry of an attached submerged water-filled vessel.
10	<a href="#">WO 2015114187</a> Spanish Inventors	AZPIROZ VILLAR FRANCISCO	System for generating energy from ocean wave motion, with a vessel supporting at least a shaft-rotor which engages with an electricity generator; a buoy connected to the vessel by means of an arm; and mechanical means that connect each arm to a shaft-rotor in order to transmit the movement of each buoy. The vessel has at least one recess/tank with a lower opening for water to enter and a closable upper hatch for the release of air, such that, once the recesses/tank are filled with water, the hatches thereof are closed and they act as ballasted tanks.
11	<a href="#">WO 2015116010</a>	HSE HITIT SOLAR EN ANONIM SIRKETI	An energy production system for generating energy from waves occurring in a water body comprises a column, having a side remaining in water, and another side comprising a fluid; an output valve in the form of a check valve disposed at the part of the column remaining above water and, when a wave crest reaches the column, assumes the open state with the increasing internal pressure of the column and thus allows said fluid to flow out of the column; a turbine which is in communication with the output valve from the turbine inlet, and which, by taking the fluid, which is output from the column through the output valve, in through the turbine inlet, is actuated and thus generates mechanical energy and releases the gas taken from the turbine inlet through the turbine outlet to the atmosphere; and an intake valve in the form of a check valve which is disposed at the part of the column remaining above water, and, when a wave trough reaches the column, assumes the open state with the decreasing internal pressure of the column and takes in the gas in the atmosphere and allows it to flow into the column.
12	<a href="#">WO 2015119401</a>	LEE GYEONGNYEONG LEE MOOSONG	Multiple-cylinder type power generating apparatus collects energy from water reciprocative motion through a connection structure of a plurality of cylindrical buoyancy container parts and a linkage configuration of an energy conversion part in which a rod is reciprocated, and can then convert the energy to mechanical energy or electrical energy.
13	<a href="#">WO 2015121551</a>	ELEFANT FELIX ELEFANT ALEXANDRE	Converting wave energy with a floating enclosure comprising a hull which communicates its pitching movement to an eccentric mass capable of rotating without backlash about a central axis, and characterized in that: - the pitching is encouraged by the particular profile of the hull and by dynamically adjustable mobile ballast, - the eccentric mass takes the form of an autonomous carriage describing an orbit along a set of circular rails by means of sets of rollers which limit friction and spread load, - an electric generator (8), mounted on the carriage facilitates the electrical conversion.
14	<a href="#">WO 2015125150</a>	M MOHAMED ALI	Underwater turbine comprising of a central axis with which the popping up drag door pans are attached laterally in multiples at equal distance, a set of gears which transfer the force from the central axis to the generator, a floating system that helps the whole instrument to float in the water column and a metal stand 1 which holds all the components. The popping up drag doors are forcefully closed and opened by the water force and and in turn the central axis 2 is rotated.

#	Publicación	Solicitante	Resumen
15	<a href="#">WO 2015128586</a>	WAVES RUIZ	Semi-submersible platform provided with at least one longitudinal casing and a wave energy machine. The machine comprises: a gantry transversely mounted on the casing on the bow of the platform; inner and outer floats arranged so as to enable the wave energy to be converted into mechanical energy; at least one primary float and at least one secondary float, longitudinally offset relative to the primary float; and a transformer (34). The platform (2) comprises at least one stabilizer aileron extending transversely within the lower edges of the casings of the platform.
16	<a href="#">WO 2015130181</a>	STAMIRSKI MACIEJ	Wave energy conversion arrangement comprising - at least two modules each of which comprises a first and a second float coupled mechanically with each other by means enabling for reciprocal and independent displacing of these floats in relation to each other over a predetermined length segment along separate straight lines parallel to each other; - at least one elementary energy conversion arrangement using reciprocating movement of the first and second floats of each module; - connecting means for alternative detachable connecting a float of a given module with a float of the adjoining module ; - wherein said elementary energy conversion arrangements of the adjoining modules are energetically coupled with each other constituting a main energy conversion arrangement.
17	<a href="#">WO 2015140415</a>	PATIN PIERRE-ARMAND	Installation for converting marine energy, comprising a first means of converting the alternating movement of the swell into a torque that drives a first output shaft, a second means that drives a second output shaft, and a means of combining the torques applied to said shafts in order to turn a control shaft of a power generating device. The means of combining the torques comprises a power adder device comprising two co-axial driving shafts, one central shaft slipped inside a tubular shaft, respectively rotating as one with the output shafts of the two conversion means, and a driven shaft centred on the same axis as the driving shafts and rotating as one with the control shaft (80) of the power generating device.
18	<a href="#">WO 2015140163</a>	CORPOWER OCEAN AB	A gear arrangement for transforming a linear force and/or motion into a rotational torque and/or motion and vice versa. The invention also concerns the integration of such a gear arrangement into energy converters and linear actuators.

## 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	<a href="#">WO 2015093795</a>	LEE GYEONGNYEONG LEE MOOSONG	A rotary working device having a closed structure, capable of collecting natural energy of various forms and artificial energy being wasted and converting the collected energy into mechanical or electrical energy, through the configuration of a cylinder engaged with a piston, and to an energy conversion device that has a plurality of compartment parts wherein at least one is a piston-cylinder type; a passageway through which a working fluid passes; and rotary working bodies such as a hydraulic motor and a turbine, wherein one overall closed structure is formed such that the entry/exit of a fluid is blocked to/from the outside.
2	<a href="#">WO 2015101781</a>	PLIOSAUR ENERGY LTD	Hydrokinetic system for generating electricity from hydropower, the system comprising a floatable or floating structure for mooring, the structure comprising: a generally horizontal rotor; a deflector for deflecting impinging water to an undershoot flow-path and to an overtopping flow-path to rotate the rotor; and a generator for generating electricity from rotation of the rotor.
3	<a href="#">WO 2015102321</a>	LEE GYEONGNYEONG LEE MOOSONG	Rotating apparatus having a closed structure that can collect various types of natural energy and discarded artificial energy and convert the collected energy into mechanical or electrical energy through an interworking configuration between a gyroscope structure and a piston-cylinder. The present invention relates to a configuration of an apparatus that includes a buoyant container connected to a gyroscope rotation frame and transfers external energy in six degrees of freedom, such as wave force or wind force, which is applied to the buoyant container, to an energy extraction means therein.
4	<a href="#">WO 2015102625</a>	KIM CHONG HUN KIM JENNIFER JINHEE KIM DAVID KEMHOE	Generating electricity by converting kinetic energy embedded in the water in motion such as ocean waves, or river flow, or wind pressure into rotational energy which is to be used to rotate the electricity generator spin axis to generate electricity. To achieve this goal, Moving Window Frame with multiple Vertical Windows and with or without a Horizontal Window is invented.
5	<a href="#">WO 2015114440</a>	STEVENS CHRISTOPHE	System for storing and generating electric energy for an aquatic medium comprising a plurality of weights, each provided with a vessel capable of holding in a substantially hermetically way a given amount of air and/or water and a gripping means; a lift-generator, arranged such as to engage with the weights and provided such as to enable said weights, in generator mode, to descend to the bottom area and, in motor mode, to rise back up toward the surface; a main float, capable of supporting the upper portion of the lift-generator at the surface; a reversible motor, engaging with the lift-generator and making it possible, in generator mode, to produce electric energy due to the action of the weights during the descent thereof and, in motor mode, to actuate the lift-generator in order to raise the weights back up.



#	Publicación	Solicitante	Resumen
6	<a href="#">WO 2015119543</a>	MINESTO AB	A submersible power plant comprises a structure and a vehicle. The vehicle is secured to the structure by at least one tether and it is arranged to move in a predetermined trajectory by means of a fluid stream passing the vehicle. The vehicle comprises two wings. The the first wing is arranged at a first distance D1 from the second wing in a longitudinal direction, and the first wing is arranged at a second distance D2 from the second wing in a lateral direction. The extraction of power from other portions of the power plant is also made possible for instance by attaching a linear generator or a winch to the tether.
7	<a href="#">WO 2015121517</a> Spanish Inventors	UNIV POLITÉCNICA DE MADRID	Multi-rotor device with a polygonal structure, for harnessing sea currents, comprising an assembly of extractable generating units and floating units supported by a main structure in the shape of a polygon and complemented by a stabilisation structure using lattices or guys, in the centre of which a central dome can be arranged. The device is attached to the bottom by means of anchoring cables, the length of which can be regulated by means of winches. The driving units have ballast tanks to change the drive and the orientation. The combined action of ballasts and winches mak the device rotate and orient itself autonomously.
8	<a href="#">WO 2015133660</a>	UNIV ULSAN FOUND FOR IND COOP	Device for controlling the position of a maritime structure. The position control device is installed on a maritime structure, which can be moored offshore, comprising: support frames arranged along the circumferential direction of the maritime structure at a predetermined interval; elastic bodies having one end coupled to one side of the interior of the support frames, respectively; and foils having one end coupled to the other end of the elastic bodies, respectively.
9	<a href="#">WO 2015133661</a>	UNIV ULSAN FOUND FOR IND COOP	Floating maritime platform provided with airport and harbor facilities comprising: a first floating body having a space portion formed at the center thereof; a second floating body positioned on the space portion of the first floating body, a sliding surface being formed on the top portion of the second floating body; and at least one coupling portion such that the second floating body can rotate.
10	<a href="#">WO 2015139942</a>	MARINE CURRENT TURBINES LTD	A modular water current turbine array comprises a plurality of submersible turbine assemblies, a conversion module for power and/or frequency conversion and a conversion module mounting. At least one conversion module is common to two or more turbine assemblies.
11	<a href="#">WO 2015140489</a>	OCEAN CURRENT ENERGY LLC	Apparatus for generating electricity from a tidal or ocean current water flow, which comprises a plurality of electrical generators; each electrical generator comprises a rotor, a stator, and a housing); the housing is a multi-sided housing constructed such that the electrical generators are stably connected together. The apparatus includes means for positioning above a waterbed and position-adjusting means such that the housing is always able to be at a height and pointing in a direction for receiving maximum flow of water through the housing.

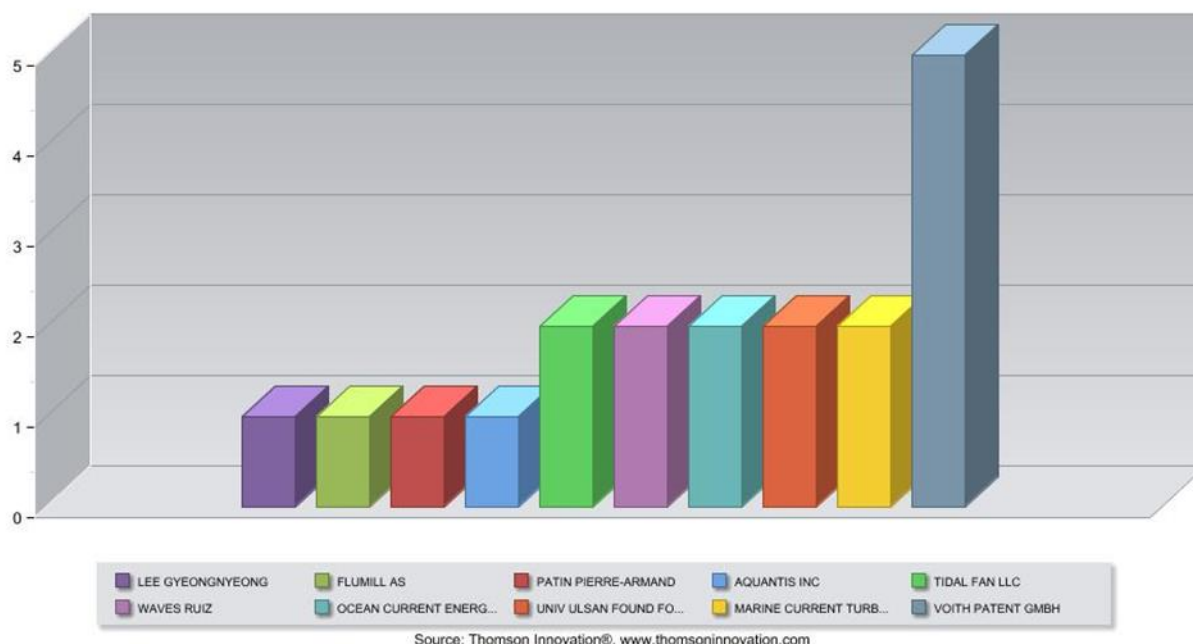
#	Publicación	Solicitante	Resumen
12	<a href="#">WO 2015140209</a>	FLUMILL AS	Energy conversion system comprising a turbine device arranged to operate a rotational axis in an inclined orientation vis-à-vis an incoming body of water. The turbine rotor comprises a blade that comprises a first, convex surface, a second, concave surface and a free, distal edge where both surfaces meet. The curvature of the second surface, when viewed in a plane orthogonal to the rotational axis, is such that a maximum depth of the second surface, when measured from a straight line intersecting the rotational axis and the distal edge, is at least 35% of the distance between the rotational axis and the distal edge.

# ESTADISTICAS

Este BVT está centrado en las publicaciones PCT sobre las energías mareomotriz y undimotriz y en el primer número se publicaron estadísticas desde 2008. Se han elegido las publicaciones PCT con el fin de informar sobre las invenciones con mayor relevancia internacional. Este criterio es acertado pero puede desestimar las publicaciones europeas que no han pasado por el procedimiento PCT. En este décimo BVT se presentan las publicaciones PCT de los dos primeros trimestres de 2015 por país de la prioridad. Además se proporciona una visión a nivel europeo con los resultados desde 2010 de las publicaciones de patente europea (EP), lo que permite ver a nivel regional la creciente evolución temporal y quiénes son los principales actores en este campo tecnológico.

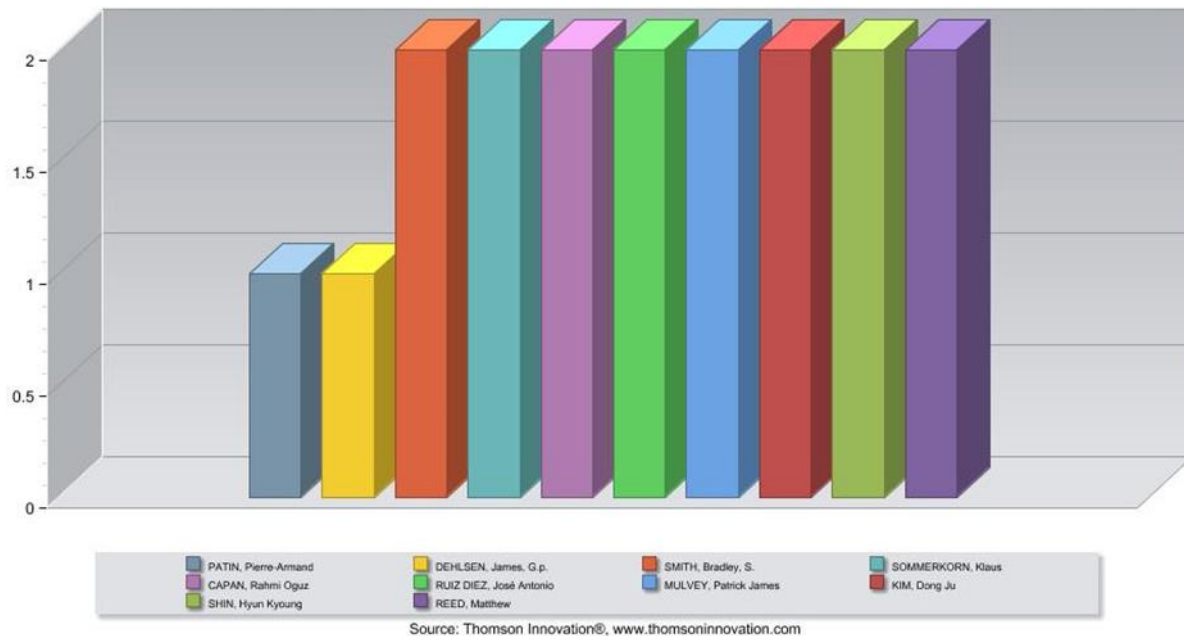
## 1.- Publicaciones PCT en 2015 de los 10 solicitantes más frecuentes.

PCT publications by top 10 applicants



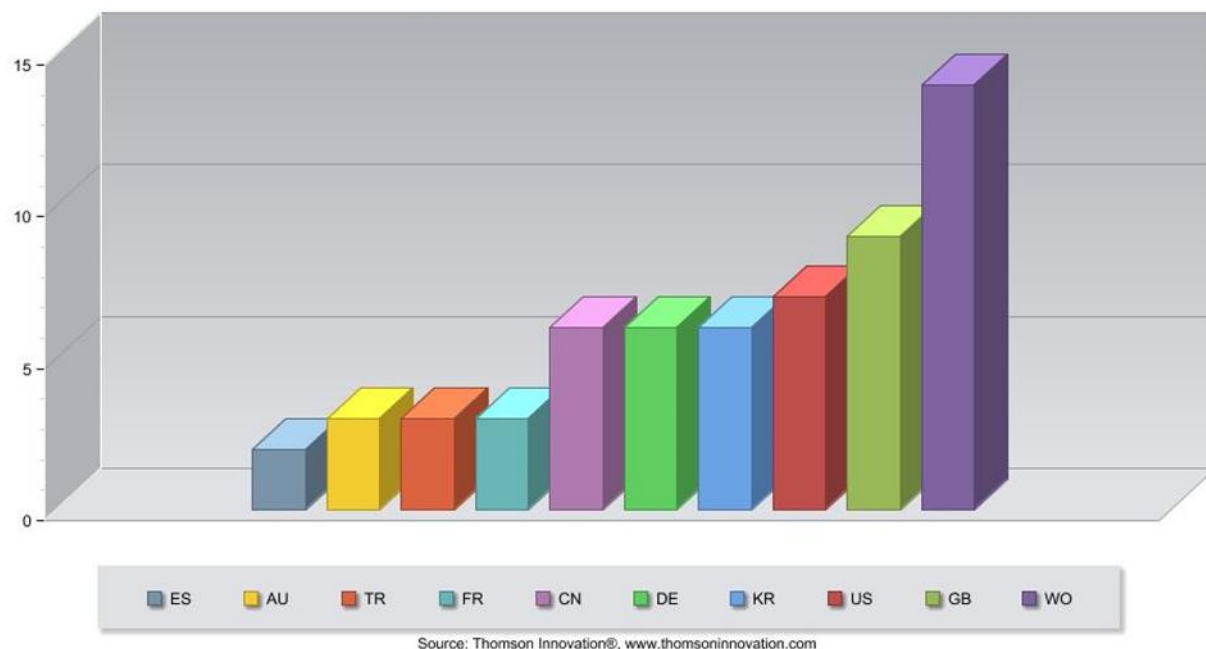
## 2.- Publicaciones PCT en 2015 de los 10 inventores más frecuentes.

PCT publications by top 10 inventors



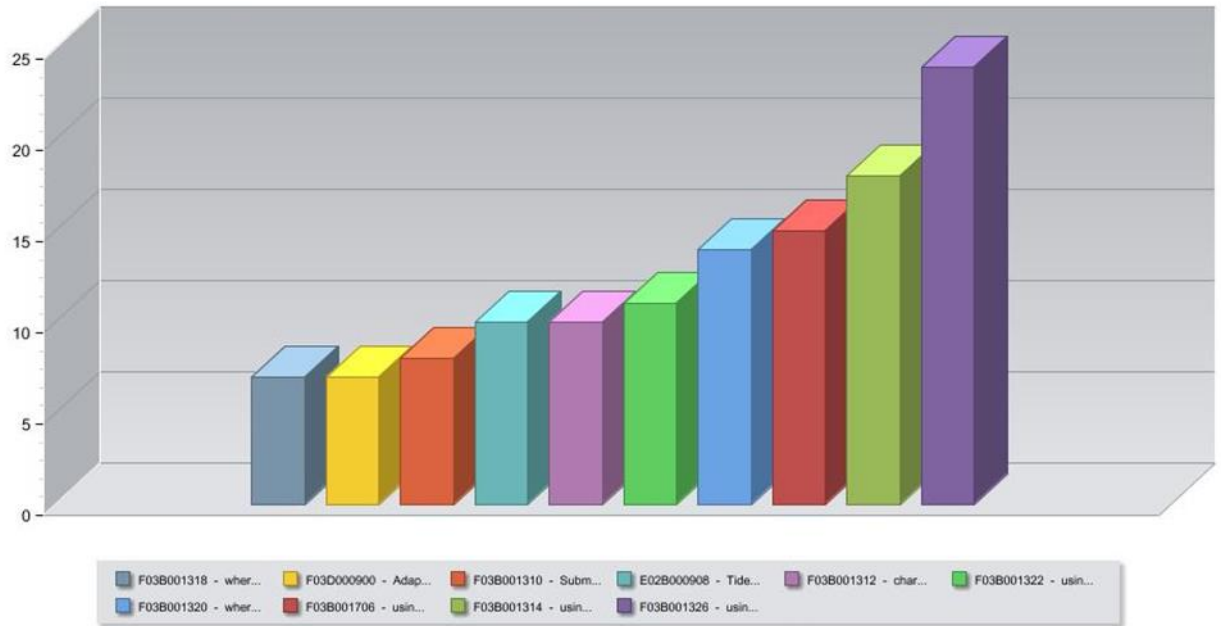
## 3.- Publicaciones PCT en 2015 de los 10 países de prioridad más frecuentes.

PCT publications by top 10 priority country



#### 4.- Publicaciones PCT en 2015 de las 10 clasificaciones IPC más frecuentes.

PCT publications by top 10 IPC



Source: Thomson Innovation®, www.thomsoninnovation.com

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

### Bimep posicionará a Euskadi como "referente en energía marina"



La instalación marina, con 20MW de potencia, investigará dispositivos captadores de energía de las olas.

El lehendakari, Iñigo Urkullu, ha destacado que Bimep, la instalación marina para la investigación de dispositivos captadores de energía de las olas ubicada frente al puerto de Armintza, en Lemoiz, inaugurada este jueves y que ha supuesto una inversión de 22 millones de euros, es "un nuevo paso en la apuesta de Euskadi por las energías renovables" y va a permitir posicionar al País Vasco como "referente internacional en energía marina".

[Fuente: Deia](#)

### Wetfeet: WavEC tiene un nuevo proyecto europeo entre manos



El WetFeet estará activo entre el 01 de junio de 2015 y 31 de mayo de 2018. Se desarrollará la tecnología de la energía undimotriz.

El WavEC coordinará un proyecto europeo financiado por el Horizonte 2020, con un presupuesto total de 3.450 millones de euros. A partir de la identificación de las principales limitaciones que han sido la causa de la ralentización de la energía de las olas. El proyecto analiza aspectos urgentes (técnicos, económicos, financieros y ambientales) que deben ser abordados con el fin de acelerar el desarrollo de todo el sector.

En el proyecto se estudian y desarrollan nuevos materiales y componentes para la integración de dispositivos de captación de energía de las olas y abordará cuestiones fundamentales tales como la fiabilidad de los componentes tecnológicos, la supervivencia de los dispositivos, los altos costes de desarrollo, el largo proceso para la comercialización, así como la escalabilidad de tecnologías industriales.

También considerará aspectos transversales como logística y cadena de suministro, así como la aceptabilidad social y ambiental.

Estas soluciones, aunque desarrolladas en el marco de dos sistemas de energía undimotriz, en particular la Columna de Agua Oscilante y la Symphony, serán susceptibles de ser aplicados a otros conceptos.

El WetFeet tendrá una duración de 3 años y contará con socios de Austria, Francia, Holanda, Italia, Portugal y Reino Unido.

[Fuente: Jornal da Economia do Mar](#)

## La UE estudia financiar en Ourense un proyecto para captar energía de las olas



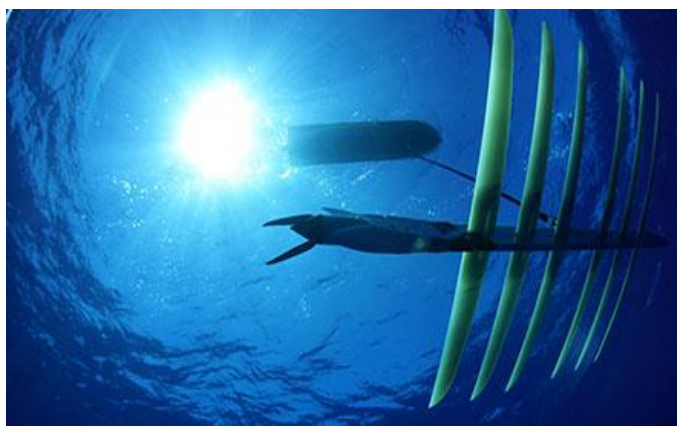
El investigador Alejandro Cabrera es el primer finalista de este campus en la convocatoria ERC -La metodología que desarrolla opta a una beca de entre 1,5 y 2 millones de euros

El Consejo Europeo de Investigación ha puesto el foco en el proyecto del investigador ourensano de 35 años, Alejandro Cabrera Crespo, que propone una metodología nueva para diseñar dispositivos de captación de la energía de las olas. El físico, contratado actualmente en el campus de Ourense bajo el programa Ramón y Cajal del área de Ingeniería Mecánica, Naval y Aeronáutica, se juega conseguir una ayuda de entre 1,5 y 2 millones de euros para liderar su propia investigación durante cinco años.

[Fuente: El Faro de Vigo](#)

## WOS: Un robot marino gana el premio a la innovación

Liquid Robotics ganó el premio a la innovación de la World Ocean Summit (WOS) con el proyecto Wave Glider que se encuentra ahora en aguas portuguesas.



Liquid Robotics fue el ganador del Premio Ocean Innovation Challenge de innovación, con el Wave Glider, un vehículo accionado por la energía de las olas, pilotado remotamente y orientado a la recolección de información, que se encuentra actualmente en aguas portuguesas para la realización de pruebas. La empresa hizo una presentación en video en el concurso.

La cumbre WOS reúne a 70 ministros de todo el mundo se celebra en Cascais. Entre los discursos, se presentó un estudio del Banco Mundial que concluye que la pesca insostenible representa un coste que excede los mil millones de euros. Y que de resolverse dicho problema en 2050, se conseguiría aumentar la producción pesquera en un 23%.

Otra de las conclusiones fue la presentada por WWF, que demuestra que por cada dólar invertido en la protección de áreas marinas, produce un retorno de tres dólares y los beneficios relacionados incluyen un aumento del empleo y de la pesca, además de mejorar el medio ambiente.

[Fuente: Jornal da Economia do Mar](#)

# Entrevista



**Consultor del Presidente de la República para los asuntos marinos, Tiago Pitta e Cunha, abogado de formación, ha sido representante de Portugal en la Asamblea General de la Convención del Mar en la ONU. Un ministro sin cartera con poder de decisión y veto "en cualquier estrategia marina".**

**Tiago Pitta e Cunha, experto en políticas oceánicas y asuntos marítimos, ha repetido dos ideas: "la globalización no existe sin el mar" y "no tiene sentido luchar contra la geografía".**

## **¿Seguimos de espaldas al mar?**

En ausencia de planes y concentraciones estatales prevalecerán los grupos de interés, los únicos organizados. Pero el interés común no existe y por eso no hay impuestos sobre el tonelaje [impuesto basado en los bienes transportados y no las ganancias], por ejemplo. Como no existe esta idea de interés común, y del mar como un interés común, un ministro de Finanzas no entiende que debe dar ayudas estatales al mar, aun viendo que otros países europeos lo hacen.

## **Pero con estos ejemplos, ¿cómo es eso posible?**

Parece obvio, pero no lo es. Por ejemplo, abogo por que no puede haber un Ministerio del Marr. Tenemos un Ministerio de la Tierra o la Luna?

## **Entonces, ¿qué debemos hacer?**

Hay que crear un Ministerio coordinador de asuntos marítimos y esto tendría que ser un ministro sin cartera en la Presidencia del Consejo de Ministros con poder de decisión y veto.

## **El mar está en todas partes.**

Correcto, tenemos un poco en Turismo, un poco en Ciencias, en Transporte, en Energía, en Medio Ambiente. Lo importante es que un gobierno diga "aquí hay una estrategia marina, que existe, y tenemos un programa para ejecutar esa estrategia". Y una estrategia debe ser de 20 años. Era importante tener este Ministerio, lo que quedó establecido en una ley orgánica, que tiene poder de veto y la coordinación general de la estrategia marina. Queremos convertir este país en un instante en una potencia marina.

## **¿Las personas darían cuenta de la importancia del mar?**

Por supuesto, se darían cuenta de que el mar es todo energía, es como la terminal de gas natural licuado GNL, que existe en Sines. Llevará un tiempo, pero es irreversible.

## **¿Hemos llegado a ese punto?**

Sí, hemos alcanzado un nivel de difusión de la ideas sobre el mar que ningún gobierno puede volver atrás, aunque todavía no está en una situación ideal. Este modelo que yo propongo, por ejemplo, no existe en cualquier lugar, sería revolucionario.



## ¿El mar debe ser cada vez más fundamental?

Por supuesto, ya que no sólo es fundamental para nosotros, lo es para el planeta, el clima, - el clima será la nueva ideología – para el medio ambiente, para la globalización.

## Para nuestra supervivencia en muchos niveles.

La globalización no existe sin el mar. ¿Sabe usted que en los años 1970 sólo el 76% de comercio mundial fue transportado por el mar y en el año 2015 será más del 90%? Esto se explica con la creación de la Organización Mundial del Comercio y culmina con la entrada de Rusia y China en los últimos años en la organización. Si no fuera por el transporte marítimo y estas naves entrando ahora a Sines, con 19 mil contenedores, no podríamos comprar una tv 'made in China', sería demasiado cara. La logística marítima, y el desarrollo de los transportes y de los puertos fue lo que permitió la globalización. La seguridad mundial está en el mar, y cada vez más.

## ¿Esto tiene consecuencias directas en la economía?

De aquí a pocos años discutiremos si se usan más o menos energías renovables. Y la economía será la economía del clima. Sólo las empresas amigas del clima, que descarbonicen la economía, van a resistir. Y en todo eso el mar es fundamental. El clima mundial está regulado por el mar. No son los bosques, es el mar. Portugal absorbe una gran cantidad de CO2 en Europa y aún no lo hemos estudiado.

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