

Boletín VT

REDES DE SENSORES INALÁMBRICAS

41

1.º trimestre 2020

Vigilancia Tecnológica

Desde su aparición, los campos de aplicación de las redes de sensores inalámbricos se han ido ampliando de forma constante. La posibilidad de crear extensas plataformas de gestión integrada para la monitorización, captura de datos, y control remoto y en tiempo real mediante estas redes sensoriales, ha proporcionado una poderosa herramienta para el desarrollo de aplicaciones y servicios en sectores económicos tan diversos como el agrícola, el industrial o el de la administración pública.

El presente boletín, elaborado por la Unidad de Información Tecnológica de la Oficina Española de Patentes y Marcas (OEPM), pretende revisar la evolución de la innovación, en el marco de las patentes de las tecnologías TIC en relación con algunas de las aplicaciones más relevantes abordadas por las redes de sensores

inalámbricas, tales como: su uso en entornos agrícolas (gestión de cultivos, plagas, invernaderos, regadíos), su uso en entornos urbanos o públicos (seguridad ciudadana, infraestructuras, gestión de información medioambiental, polución, residuos) o su uso para la detección y gestión de incendios.

De este modo, el boletín, de periodicidad trimestral, recogerá las publicaciones más recientes de solicitudes internacionales de patente (solicitudes PCT) publicadas en el trimestre inmediatamente anterior a su elaboración. Se ha restringido el ámbito de este boletín a solicitudes PCT por considerarse que al ser estas solicitudes con las que las empresas pretenden proteger sus invenciones en distintos países, se corresponden con invenciones de una cierta relevancia tecnológica.

CONTENIDO:

- Redes de sensores para entornos agrícolas
- Redes de sensores para entornos urbanos o públicos
- Redes de sensores para detectar incendios
- Otras referencias

NIPO: 116-19-015-9

Solicitudes de Patente Publicadas

Los datos que aparecen en la tabla corresponden a una selección de las solicitudes de patentes PCT publicadas durante el trimestre analizado. Se puede acceder al documento completo haciendo clic sobre el mismo.

REDES DE SENSORES PARA ENTORNOS AGRÍCOLAS

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
WO 2020049387 A1	PREC PLANTING LLC	Apparatus, system and method for monitoring and mapping seeder performance
WO 2020043355 A1	ARCELIK AS	A plant growing cabinet with improved watering algorithm
WO 2020050570 A1	AGRICULTURAL CORP MANNA CEA CO LTD	Distributed control smart farm device
WO 2020050569 A1	AGRICULTURAL CORP MANNA CEA CO LTD	Self-diagnostic farm environment control system
WO 2020003081 A1	STIATTI ANNA	Control kit for an irrigation system
WO 2020045783 A1	AIPLUS INC	Smart plant cultivation device and smart plant cultivation system using iot
WO 2020047587 A1	BOSCH AUSTRALIA	System and method for sensor-based auto-calibration of soil-moisture levels
WO 2019245431 A1	DELAVAL HOLDING AB	Method and control unit for controlling a moveable crowd gate
WO 2020037045 A1	RABBY JOHN C	Systems and methods for tracking and tracing performance of agricultural tasks
WO 2019244057 A1	UNIV DI PISA	System for the determination of the real evapotranspiration of a vegetated surface
WO 2020039414 A2	UNIV TECNICA PARTICULAR DE LOJA	System for agricultural education
WO 2020041242 A1	HELIPONIX LLC	Rotary aeroponic apparatus and method
WO 2020040650 A1	AGRESEARCH LTD	A method, apparatus and system for detecting urination events for livestock
WO 2020043005 A1	PETATO TECH LIMITED	Litter collection device for efficient animal waste removal and method thereof
WO 2020028669 A1	GROW SOLUTIONS TECH LLC	Systems and methods for managing plant growth within an assembly line grow pod
WO 2020028960 A1	COSME CARVALHO ERVILHA JOELCIO	Method for detection and remote, automatic and continuous counting of insect pests, with transmission of information by means of communication systems in unenclosed and enclosed areas
WO 2020038697 A1	SPIRAX SARCO LTD	Remote configuration of plant monitoring
WO 2020026270 A1	SINGH GURPREET	Smart system for continuous trapping, storing and extermination of multiple number of mouse
WO 2020002618 A1	SEL ENVIRONMENTAL LTD	Apparatus and method for fluid level measurement and control
WO 2020008113 A1	OY HORTIMILL LTD	System and method for the cultivation of plants
WO 2020041874 A1	CANOPY GROWTH CORP	Systems and methods for processing an agricultural product
WO 2020011437 A1	STEVENS CONSULTANT BVBA	An ear tag and animal monitoring system
WO 2020016889 A1	2 THE STATE OF ISRAEL MINISTRY OF AGRICULTURE & RURAL	The means and method for the real-time analysis of harvested crops

WO 2020039046 A1	NAITURE GMBH & CO KG	Mobile analysis and processing device
WO 2020049576 A2	VIEWNETIC LTD	System and method for monitoring plants in plant growing areas
WO 2020028962 A1	COSME CARVALHO ERVILHA JOELCIO	Device for automatic and continuous remote counting and detection of target pests and perimeter lepidoptera controller
WO 2020046775 A1	STAMETS PAUL EDWARD	Bee feeder having labyrinthine portal
WO 2019224817 A1	AUTONOMOUS PIVOT LTD	System and method for turning standard irrigation pivots into a social network of autonomous ai farming robots
WO 2019245121 A1	SSL INC	System for iot-based greenhouse environment management
WO 2020005317 A1	JUST GREENS LLC	Controlling plant growth conditions
WO 2020014773 A1	VINELAND RES AND INNOVATION CENTRE	Automated monitoring and irrigation of plants in a controlled growing environment
WO 2020035875 A1	MAHINDRA & MAHINDRA LTD	"Methods and systems for generating prescription plans for a region under cultivation"
WO 2020002997 A2	RADMANTIS LLC	Animal sensing system
WO 2020018802 A1	GROW SOLUTIONS TECH LLC	Systems and methods for providing a personal grow pod
WO 2020039295 A1	PREC PLANTING LLC	Expandable network architecture for communications between machines and implements
WO 2020024054 A1	CADENCE AGRICULTURAL SYSTEMS INC	Cultivar growing system and method
WO 2020028075 A1	WALMART APOLLO LLC	System for watering live plants on a maneuverable rack
WO 2020031050 A1	KAUR KAMALPAVIT	A system and a device for health and fertility management of one or more milch animals
WO 2020036495 A1	AGRESEARCH LTD	Method, apparatus and system for measuring urination events for cows
WO 2020002945 A1	BARE CONDUCTIVE LTD	Differential pest sensor
WO 2020013102 A1	SONY CORP	Information processing apparatus, information processing method, and program
WO 2019245122 A1	SSL INC	System for monitoring, in real time, growth state of crop in greenhouse on basis of iot
WO 2020028985 A1	7108789 MANITOBA INC	Depth detection of a soil coultter
WO 2020035744 A1	STARFIELD ENHANCE S PTE LTD	Mosquito eradicator
WO 2020041440 A1	BOARD OF REGENTS OF THE NEVADA SYSTEM	Capacitance-based soil moisture sensing
WO 2020034009 A1	MANSKI PTY LTD	A computer-controlled agriculture system
WO 2020041785 A1	VETMEASURE INC	Round-the-clock monitoring of an animal's health status
WO 2020010078 A1	WOODSTREAM CORP	Wash down sensor for electronic rodent traps and method of preventing false triggering using a wash down sensor
WO 2020023504 A1	HELIPONIX LLC	Automated plant growing system
WO 2020003641 A1	OMRON TATEISI ELECTRONICS CO	Cultivation system and lighting control method for cultivation system
WO 2019237200 A1	PAIGE GROWTH TECH INC	Precision agriculture system and related methods
WO 2020014704 A1	UNIV HAWAII	Point-of-care electroflotation of dispersed, low tolerance pathogens
WO 2020014691 A1	WEIDENBACH ALEX	Agricultural implement suspension system
WO 2020014689 A1	RAVEN IND INC	Implement position control system and method for same
WO 2019240715 A2	YULUG AHMET OMER	Managing the effective root zone of plants with artificial intelligence cells
WO 2020000043 A1	UNIV OF SOUTHERN QUEENSLAND	Plant growth feature monitoring
WO 2020003211 A2	SMART WAVE TECH INC	Pest control system having event monitoring

WO 2020049387 A1	PREC PLANTING LLC	Apparatus, system and method for monitoring and mapping seeder performance
WO 2020043355 A1	ARCELIK AS	A plant growing cabinet with improved watering algorithm
WO 2020050570 A1	AGRICULTURAL CORP MANNA CEA CO LTD	Distributed control smart farm device
WO 2020050569 A1	AGRICULTURAL CORP MANNA CEA CO LTD	Self-diagnostic farm environment control system
WO 2020003081 A1	STIATTI ANNA	Control kit for an irrigation system

[...ver más](#)

REDES DE SENSORES PARA ENTORNOS URBANOS O PÚBLICOS

Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

WO 2020047673 A1	CONTROLE DE DONNEES METROPOLIS INC	Streetlight camera
WO 2020049030 A1	SELC IRELAND LTD	Streetlight asset module, streetlights and related systems
WO 2020041224 A1	UNIV YALE	Shoulder mountable real-time air quality measurement device and air quality device calibration system
WO 2020039379 A1	DIGITALAIR TECH PTY LTD	Air quality assessment and treatment in an air conditioner
WO 2020043031 A1	SI SHUCHUN	Method for calibrating and coordinating work for atmosphere pollution monitoring sensors
WO 2020006034 A1	KIMBERLY CLARK CO	Washroom use determination system
WO 2020019207 A1	LI XIUQIU	Smart community implementation method and node device
WO 2020000367 A1	LOGISTICS AND SUPPLY CHAIN MULTITECH R&D CENTRE LTD	Multi-sensor theft/threat detection system for crowd pre-screening
WO 2020010179 A1	UNIV CARNEGIE MELLON	Improvements for low-power wide area networks
WO 2020023927 A1	THE HEIL CO	Refuse contamination analysis

[...ver más](#)

REDES DE SENSORES PARA DETECTAR INCENDIOS

Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

WO 2020043262 A1	XCCELO GMBH	Method of intrusion detection
WO 2020039044 A1	VERISURE SARL	Security monitoring system and node therefor
WO 2020030759 A1	TRIDONIC GMBH & CO KG	Modular wireless interface for a lighting device
WO 2020035175 A1	FOGTEC BRANDSCHUTZ GMBH & CO KG	Method for monitoring valves
WO 2020021093 A1	MINIMAX VIKING RES & DEVELOPMENT GMBH	System and method for fire fighting in a room, in particular in a residential room
WO 2020021079 A1	MINIMAX VIKING RES & DEVELOPMENT GMBH	A fire fighting system for extinguishing a fire in a room of a building, a method thereof and use of an array sensor therein
WO 2020033733 A1	DYKES JEFFREY L	Directional indicator for protective face masks
WO 2020014043 A1	CARRIER CORP	Chambered fiber optic smoke detection
WO 2020025934 A1	PLUMIS LTD	Wall-mounted spray head unit
WO 2020026713 A1	PANASONIC IP MAN CO LTD	Disaster-preparedness device, control method and program
WO 2019243219 A1	ERICSSON TELEFON AB L M	Prioritized call handling
WO 2020014042 A1	CARRIER CORP	Explosion proof fiber optic based detection
WO 2020036759 A2	CARRIER CORP	A method and a system for monitoring a fire or security system and a storage medium
WO 2019244094 A1	LADEIRA JOAO	Wildfire detection system and method using array of co2 sensors and artificial intelligence
WO 2020003712 A1	HOCHIKI CO	Fire detection device
WO 2020006503 A1	PEREZ LUIS	Fire suppressant enclosures for battery cell systems
WO 2020037196 A1	BROAN NU TONE LLC	Sensor enabled range hood
WO 2020010596 A1	CARRIER CORP	High sensitivity fiber optic based detection system
WO 2020014459 A1	CARRIER CORP	High sensitivity fiber optic based detection
WO 2020010599 A1	CARRIER CORP	High sensitivity fiber optic based detection
WO 2020014462 A2	CARRIER CORP	High sensitivity fiber optic based detection system
WO 2020023325 A1	WANG TIEJUN	Multimode heterogeneous iot networks
WO 2020005431 A1	HALO SMART SOLUTIONS INC	Sensor device and system
WO 2020004962 A1	SUNG JEUNG RYAE	Seismic iot smart complex electronic water pressure opening/closing system including remote control and quick automatic reporting functions
WO 2019244125 A2	3M INNOVATIVE PROPERTIES CO	Personal protective equipment safety system using contextual information from industrial control systems
WO 2020014461 A2	CARRIER CORP	Enhanced robustness for high sensitivity fiber optic smoke detection

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OTRAS REFERENCIAS

Nº PUBLICACIÓN SOLICITANTE CONTENIDO TÉCNICO

Nº PUBLICACIÓN	SOLICITANTE	CONTENIDO TÉCNICO
WO 2020053807 A1	ABB SCHWEIZ AG	Method and system for monitoring condition of a sample handling system of a gas analyser
WO 2020048674 A1	DOERKEN EWALD AG	Moisture sensor
WO 2020049759 A1	OMRON TATEISI ELECTRONICS CO	Data processing device, data processing method, and data processing program
WO 2020051195 A1	WATLOW ELECTRIC MFG	Hybrid modular wireless sensor
WO 2020054097 A1	ALPS ALPINE CO LTD	Information collection system and information collection terminal
WO 2020053351 A1	MOVINSMART	System and method for analyzing horse-rider interactions
WO 2020052984 A1	ABB SCHWEIZ AG	Cable conduit with integrated sensors
WO 2020050805 A2	HACETTEPE UENIVERSITESI	A weathering classification device
WO 2020043519 A1	SIEMENS AG	Method for verifying sensors in a sensor network, and sensor network
WO 2020002709 A1	SENSIRE OY	Aircraft tracking sensor arrangement, and a device and method thereof
WO 2020047558 A2	CALYX INC	Gas sampling with controlled humidity
WO 2020046221 A1	TEKNO ARASTIRMA GELISTIRME ELEKTRONIK	Cigarette and mobile phone usage detection system for control systems
WO 2020035493 A1	WFS TECH LTD	Communication system
WO 2020030585 A1	SIGNIFY HOLDING BV	Systems and methods using cross-modal sampling of sensor data in distributed computing networks
WO 2020009875 A1	CONVIDA WIRELESS LLC	Dynamic fog service deployment and management
WO 2020005919 A1	ALARM COM INC	Network activity validation
WO 2020036924 A1	CARRIER CORP	Monitoring system for container systems
WO 2020040073 A1	SHARP KK	Animal accommodation unit and animal management system
WO 2020045787 A1	ITS CO LTD	Method for extracting and transmitting data by iot-based sensor
WO 2020047128 A1	GEOSPACE TECH CORPORATION	Fiber optic sensor and system including a fiber of an optical cable as a sensor fiber
WO 2020045720 A1	MTEK VISION CO LTD	Device and method for detecting malfunction in multimodal sensor by using artificial neural network
WO 2020020975 A1	EBS SPOLKA Z OGRANICZONA	Real estate monitoring system
WO 2020023836 A1	AMTROL LICENSING INC	Well management system
WO 2019243977 A1	ALITEC SRL	Polyhedral solar sensor
WO 2020033379 A1	SOMMID LLC	Devices, systems, and methods for tracking bottled liquids
WO 2020041064 A1	BAKER HUGHES A GE CO LLC	Time division multiplexing of distributed downhole sensing systems
WO 2020044754 A1	FUJIFILM CORP	Monitoring device and monitoring system
WO 2019244513 A1	NIPPON TELEGRAPH & TELEPHONE	Device functioning as sensor node and data center, sensor network, communication method, and program
WO 2020004994 A1	KOREA SOUTH EAST POWER CO LTD	System for predicting and diagnosing malfunction of power plant and method thereof
WO 2020017741 A1	MIRO CO LTD	Intelligent humidification system in which humidifier and remote control having built-in sensor are linked
WO 2019237170 A1	FACULDADES CATOLICAS	Assembly and method for measuring a fluid flow in pipes
WO 2019245321 A1	KWON TAE HWA	Fish bite detecting float using tilt sensor
WO 2020002708 A1	SENSIRE OY	Tracking sensor arrangement for detection of a tracking unit, and device and method thereof
WO 2020011489 A1	DIEHL METERING SYSTEMS GMBH	Assembly comprising a utility meter and an autonomous sensor, and method for operating the assembly

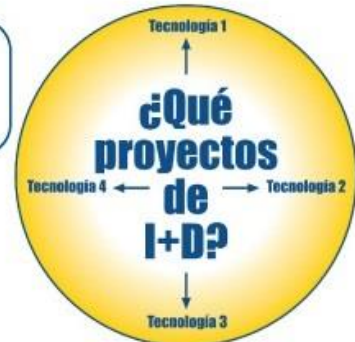
WO 2020011591 A1	MILANO POLITECNICO	System for identification and active control of vibrations in a structure and relating method
WO 2020028339 A1	SOLOVEDA LLC	Pressure sensor systems and methods for building envelope testing
WO 2020030488 A1	SIGNIFY HOLDING BV	Compressive sensing systems and methods using edge nodes of distributed computing networks
WO 2020030584 A1	SIGNIFY HOLDING BV	Systems and methods for compressing sensor data using clustering and shape matching in edge nodes of distributed computing networks
WO 2020003532 A1	NEC CORP	Learning model creation assistance device, learning model creation assistance method, and computer-readable recording medium
WO 2019246046 A1	ECOLINK INTELLIGENT TECHNOLOGY INC	Method and apparatus for home monitoring and control system setup
WO 2020016475 A1	NKE AUSTRIA GMBH	System for monitoring bearings
WO 2020000014 A1	MINELAB ELECTRONICS PTY LTD	An improved metal detector
WO 2020006397 A1	TEXAS INSTRUMENTS INC	Using estimated time drift to determine keep alive periodicity in synchronized networks
WO 2020005590 A1	DELUZE JAMES ROBERT	Bandpass filter for separation of a specifically selected gas from a group of gases or an atmosphere
WO 2020016861 A1	LAM YUEN LEE VIOLA	Method and system for conducting electronic commerce and retailing using emotion detection
WO 2020011519 A1	BSH HAUSGERAETE GMBH	Method and device for detecting metadata for smart home components
WO 2020012144 A1	SOURCE TO SITE ACCESSORIES LTD	Determining presence of a person
WO 2020014632 A1	ONICON INCORPORATED	Airflow sensor and system
WO 2019246283 A1	SEEKOPS INC	Localization analytics algorithms and methods
WO 2020053807 A1	ABB SCHWEIZ AG	Method and system for monitoring condition of a sample handling system of a gas analyser
WO 2020048674 A1	DOERKEN EWALD AG	Moisture sensor

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Los ITPs** de la OEPM detectaron solicitudes de patente relevantes cuando estábamos a mitad del proyecto y gracias a ello pudimos reconducir nuestra investigación.

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Gracias a los ITPs** de la OEPM hemos podido decidir la mejor forma de protección de nuestros resultados de I+D y redactar adecuadamente nuestras solicitudes de patente.

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