



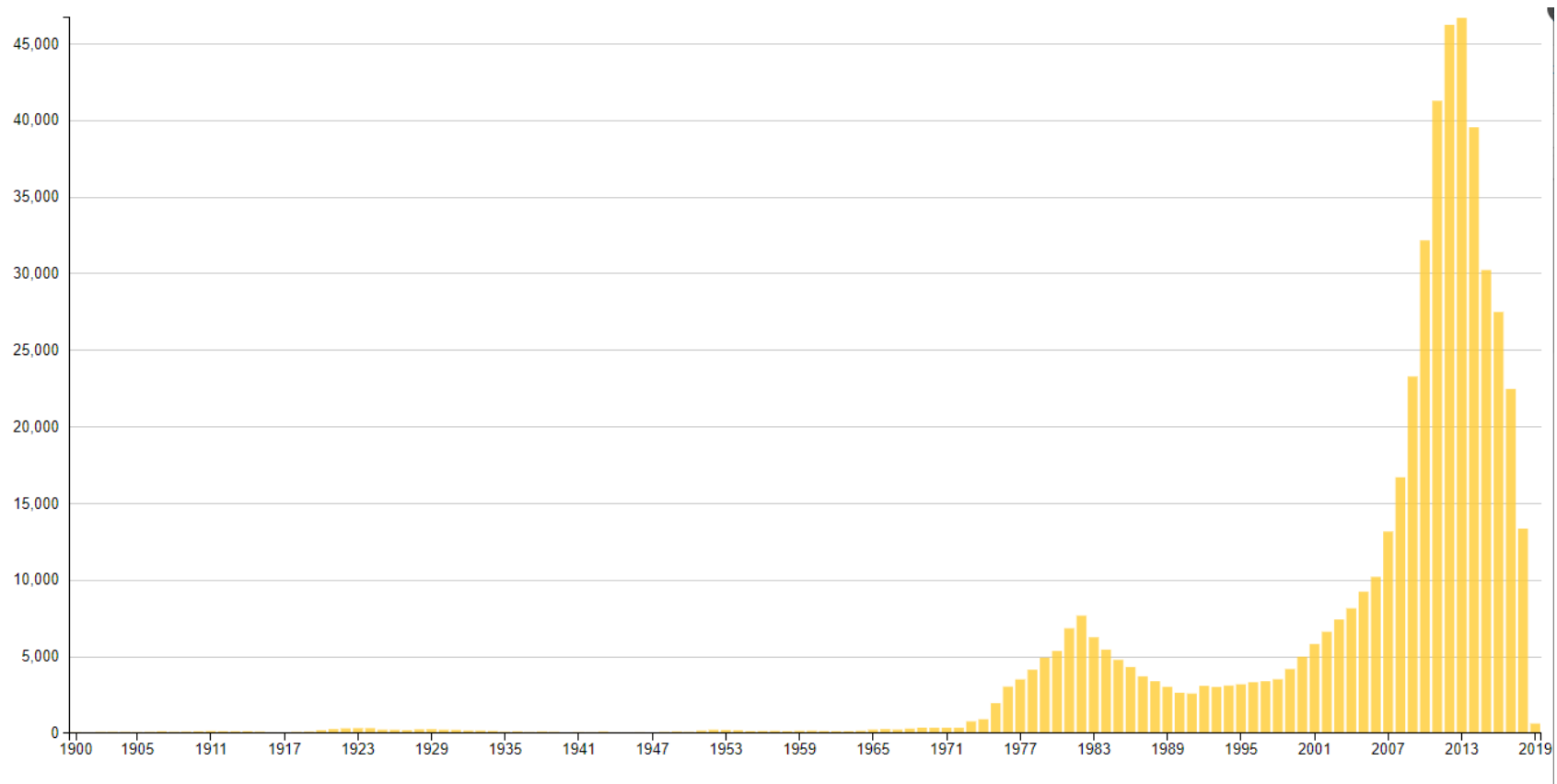
Encontramos ventajas
competitivas

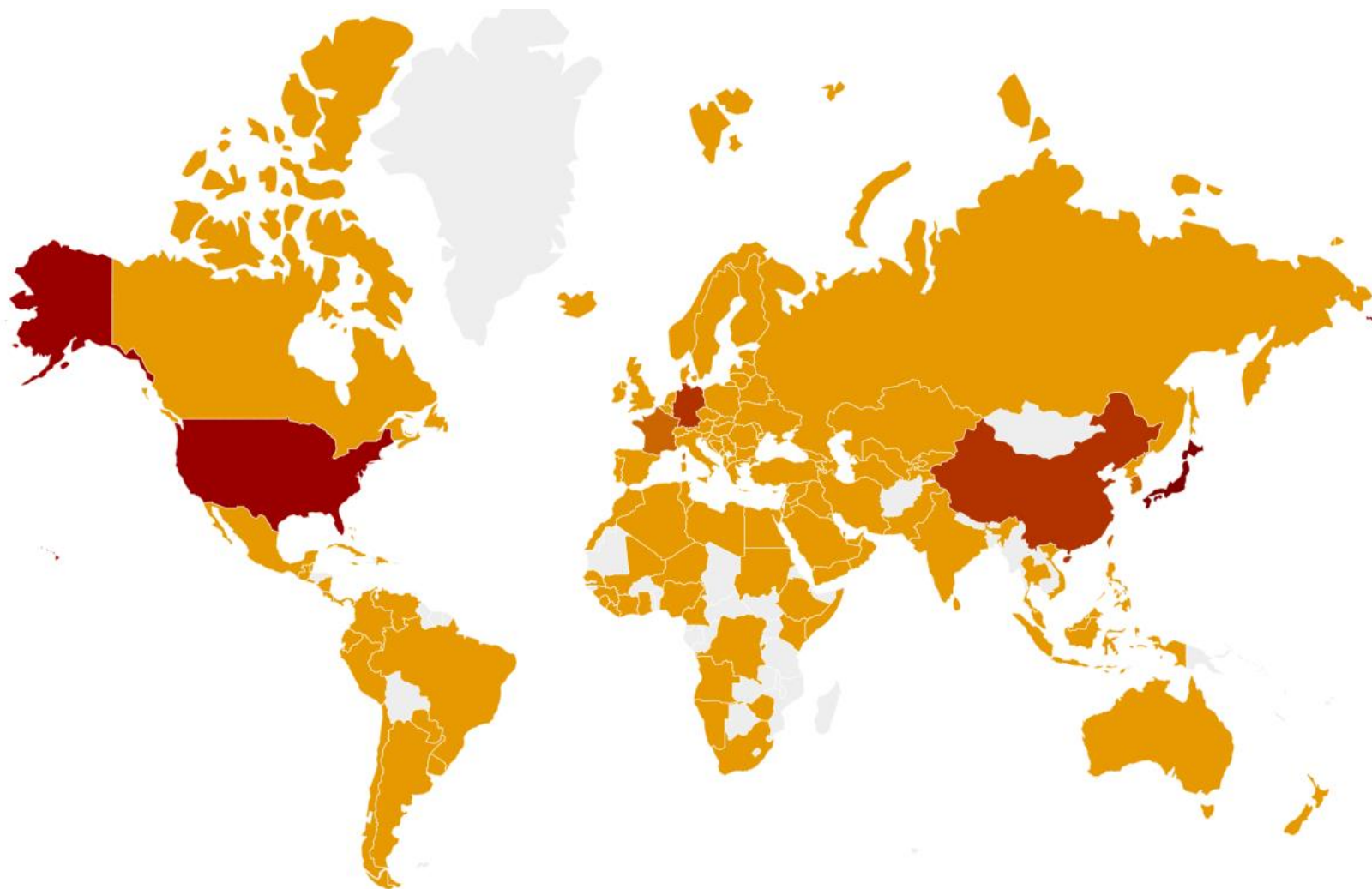
Energías renovables



Encontramos ventajas
competitivas

Investigaciones desde 1900





APPLIED MATERIALS INC • ASAHI GLASS CO LTD • BASF AG • BOSCH GMBH ROBERT • **CANON KK** • CENTRE NAT RECH SCIENT

COMMISSARIAT ENERGIE ATOMIQUE • DAINIPPON PRINTING CO LTD • DU PONT • FIRST SOLAR INC • FRAUNHOFER GES FORSCHUNG

FUJI ELECTRIC CO LTD • FUJIFILM CORP • GAMESA INNOVATION & TECH SL • **GEN ELECTRIC**

HITACHI CHEMICAL CO LTD • **HITACHI LTD** • IBM • IND TECH RES INST • KANEGAFUCHI CHEMICAL IND • KANEKA CORP

KONINKL PHILIPS ELECTRONICS NV • KYOCERA CORP • LG CHEMICAL LTD • LG ELECTRONICS INC • LG INNOTEK CO LTD

MATSUSHITA ELECTRIC IND CO LTD • MATSUSHITA ELECTRIC WORKS LTD • **MERCK PATENT GMBH**

mitsubishi electric corp • **MITSUBISHI HEAVY IND LTD** • NORDEX ENERGY GMBH

PANASONIC IP MAN CO LTD • SAINT GOBAIN • SAMSUNG DISPLAY CO LTD • SAMSUNG ELECTRONICS CO LTD • SAMSUNG SDI CO LTD

SANYO ELECTRIC CO • SEKISUI CHEMICAL CO LTD • SEMICONDUCTOR ENERGY LAB • **SHARP KK**

SIEMENS AG • SONY CORP • STATE GRID CORP CHINA • SUMITOMO CHEMICAL CO • SUNPOWER CORP

TOSHIBA KK • **VESTAS WIND SYS AS** • WOBLEN ALOYS

WOBLEN PROPERTIES GMBH

☐ Code	Patents
☐ Y02E10/50: Photovoltaic energy	90969
☐ Y02P70/521: Photovoltaic generators	48884
☐ Y02E10/44: Heat exchange systems	44959
☐ Y02E10/40: Solar thermal energy	40332
☐ Y02E10/549: organic PV cells	34967
☐ Y02E10/47: Mountings or tracking	29959
☐ Y02E10/721: Blades or rotors	24775
☐ Y02B10/20: Solar thermal	24012
☐ Y02E10/723: Control of turbines	23359
☐ Y02E10/52: PV systems with concentrators	22911
☐ Y02E10/74: Wind turbines with rotation axis perpendicular to the wind direction	22287
☐ Y02E10/223: Turbines or waterwheels	20914
☐ Y02E10/725: Generator or configuration	20339
☐ Y02E10/38: Wave energy or tidal swell	19823
☐ Y02E10/72: Wind turbines with rotation axis in wind direction	18936
☐ Y02E10/547: Monocrystalline silicon PV cells	16141
☐ Y02E10/28: Tidal stream or damless hydropower	16107
☐ Y02E10/226: Other parts or details	15481
☐ Y02E10/542: Dye sensitized solar cells	15269
☐ Y02E10/728: Onshore towers	14591
☐ Y02E10/22: Conventional	14506

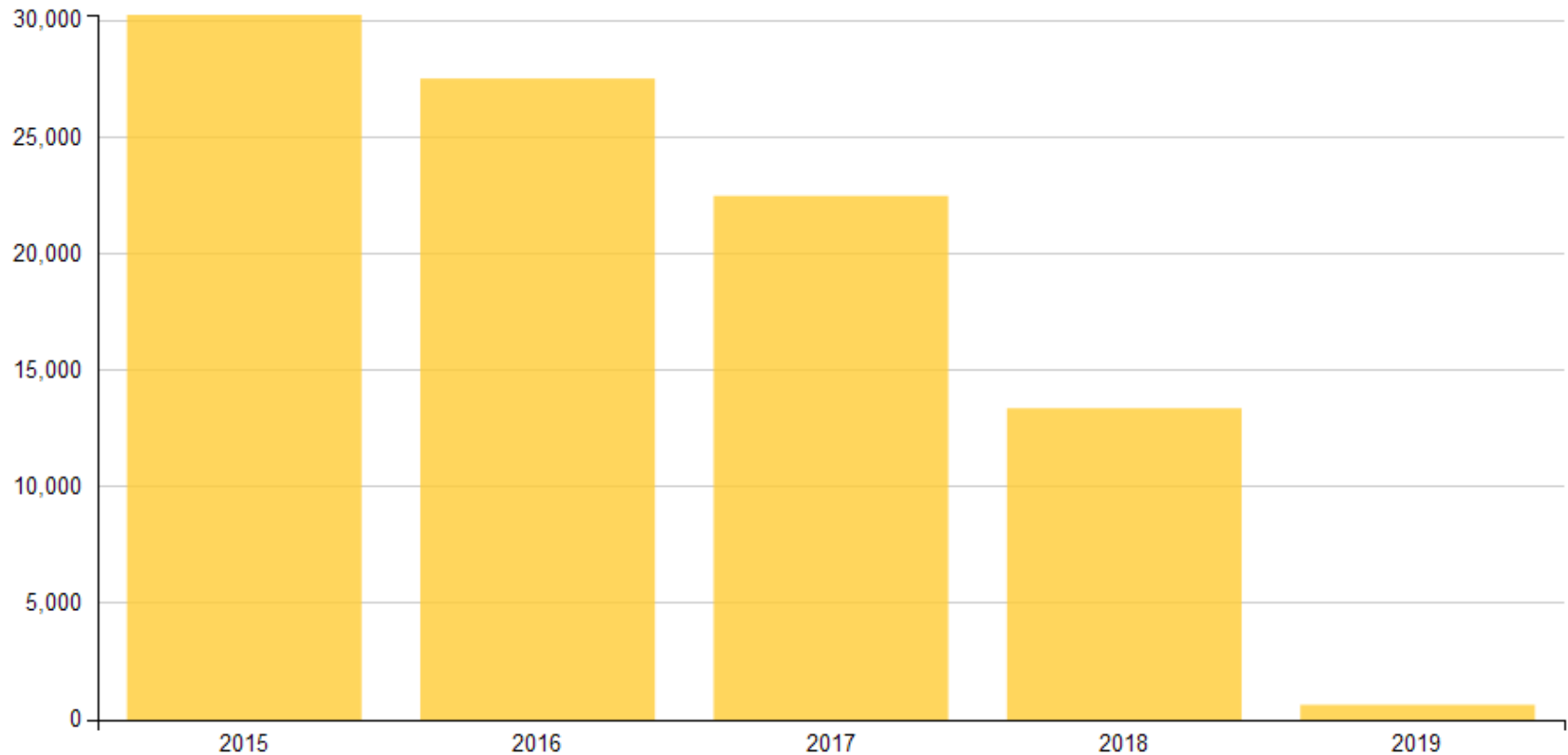


Encontramos ventajas
competitivas

Investigaciones desde 2015

ACTIVITY (PUBLICATION DATE)

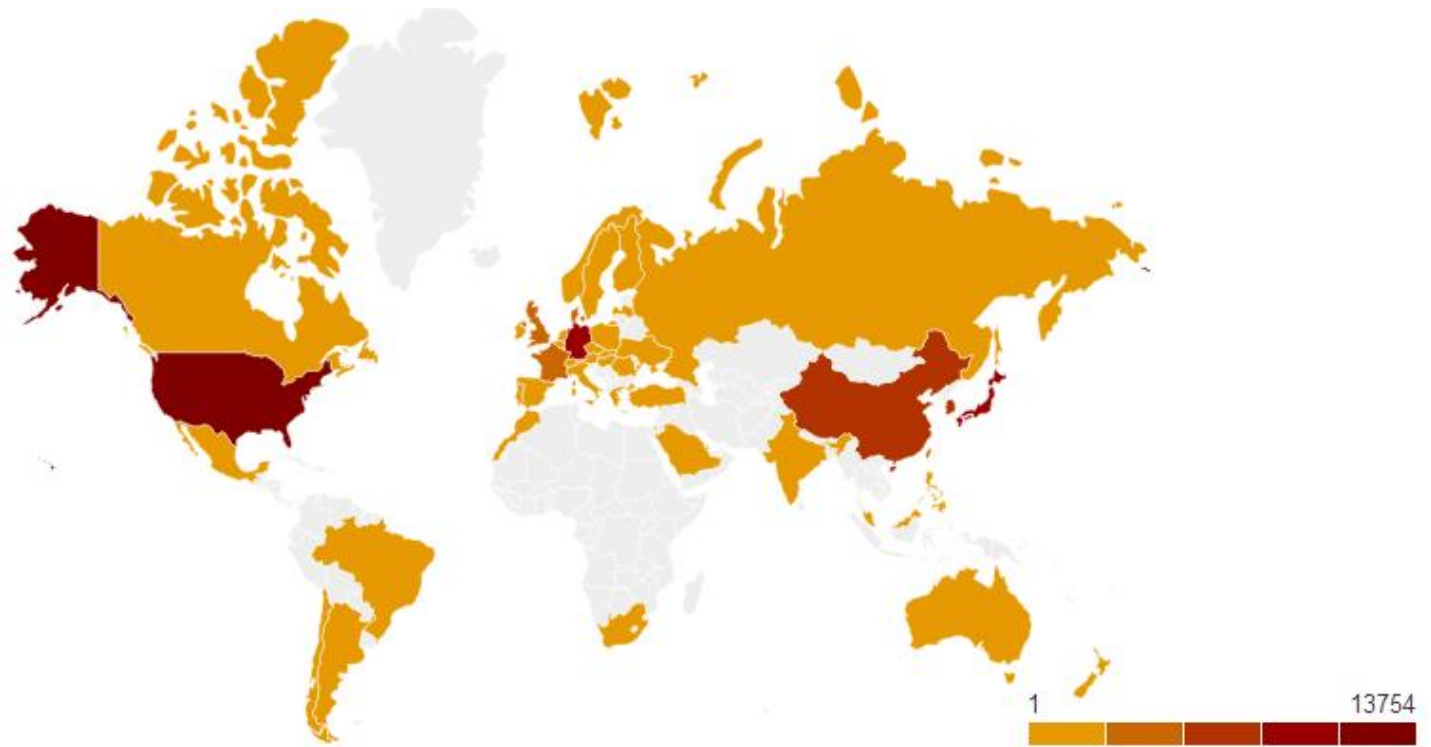
ENERGÍAS RENOVABLES (94255 PATENTS)



Number of patents over time

COUNTRY (APPLICANT)

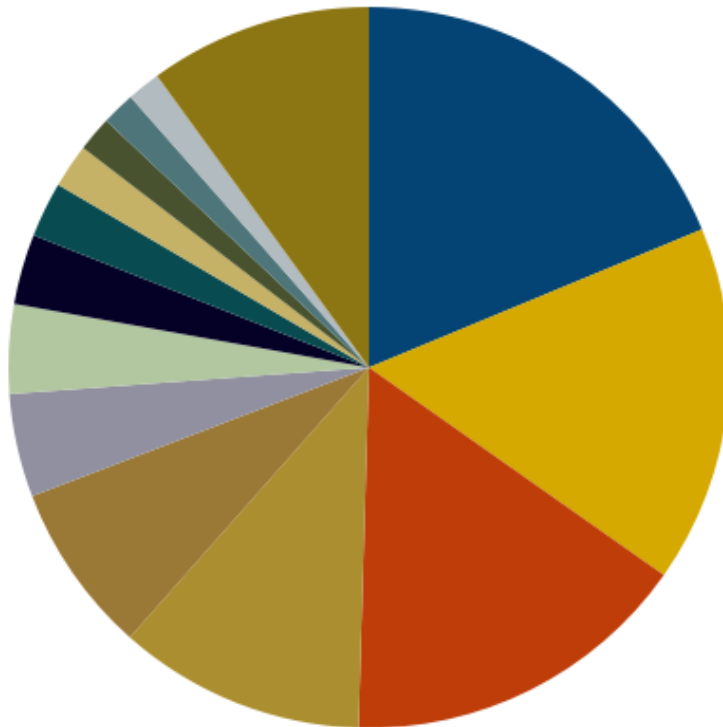
ENERGÍAS RENOVABLES (94255 PATENTS)



Where are the patents, applicants or inventors located

COUNTRY (APPLICANT)

ENERGÍAS RENOVABLES (94255 PATENTS)

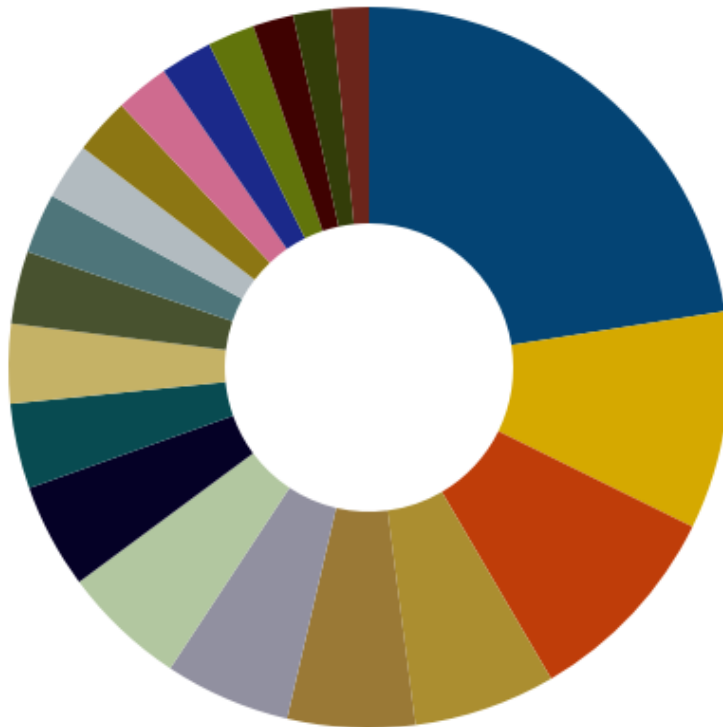


- United States (13754 patents)
- Japan (11757 patents)
- Germany (11523 patents)
- China (8127 patents)
- Korea, Republic of (5619 patents)
- France (3400 patents)
- Denmark (2936 patents)
- Taiwan, Province of China (2312 patents)
- United Kingdom (1823 patents)
- Spain (1444 patents)
- Switzerland (1153 patents)
- Netherlands (1104 patents)
- Italy (1095 patents)
- Others (7339 patents)

Where are the patents, applicants or inventors located

IPC CODE (MAINGROUP)

ENERGÍAS RENOVABLES (94255 PATENTS)

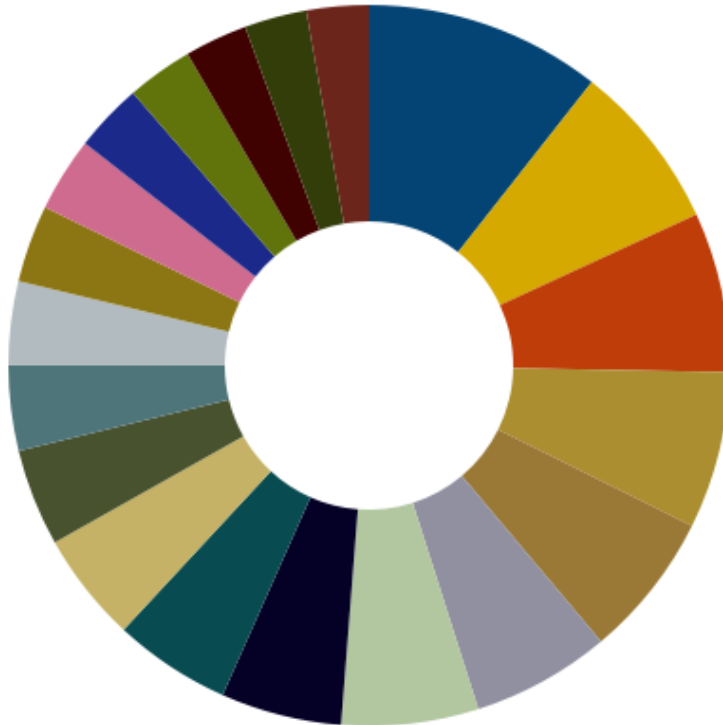


- H01L31/00 (22938 patents, 22%)** Semiconductor devices sensitive to infra-red radiation
- F24J2/00 (9975 patents, 10%)** Use of solar heat
- H01L51/00 (9468 patents, 9%)** Solid state devices using organic materials as the active part
- F03D1/00 (6495 patents, 6%)** Wind motors with rotation axis substantially parallel to the air flow entering the rotor
- F03D7/00 (5824 patents, 6%)** Controlling wind motors
- F03D9/00 (5751 patents, 6%)** Adaptations of wind motors for special use
- F03B13/00 (5677 patents, 6%)** Adaptations of machines or engines for special use
- H02J3/00 (4802 patents, 5%)** Circuit arrangements for ac mains or ac distribution networks
- H02S40/00 (3895 patents, 4%)** Components or accessories in combination with PV modules
- F03D80/00 (3629 patents, 4%)** Details
- H02S20/00 (3317 patents, 3%)** Supporting structures for PV modules
- F03D3/00 (2748 patents, 3%)** Wind motors with rotation axis

Which codes are used

IPC CODE (FULL)

ENERGÍAS RENOVABLES (94255 PATENTS)

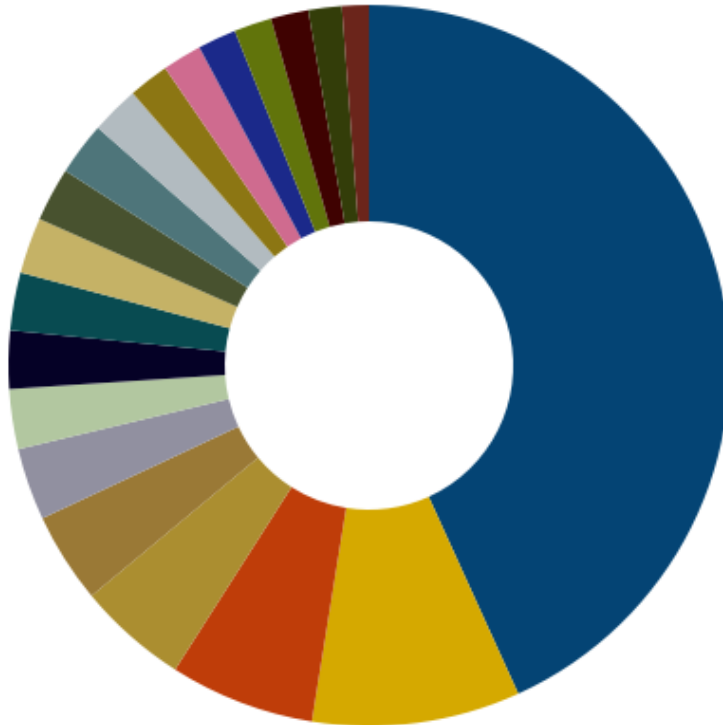


- **H01L31/18 (6492 patents, 11%)** Processes or apparatus specially adapted for the manufacture or treatment of these devices or of parts thereof
- **H01L31/0224 (4604 patents, 8%)** Electrodes
- **F03D1/06 (4390 patents, 7%)** Rotors
- **F24J2/46 (4313 patents, 7%)** Component parts
- **H02J3/38 (4003 patents, 7%)** Arrangements for parallely feeding a single network by two or more generators
- **H01L51/00 (3811 patents, 6%)** Solid state devices using organic materials as the active part
- **H01L31/048 (3761 patents, 6%)** Encapsulation of modules
- **F03D9/00 (3315 patents, 5%)** Adaptations of wind motors for special use
- **F03D7/02 (3218 patents, 5%)** the wind motors having rotation axis substantially parallel to the air flow entering the rotor
- **H01L31/042 (3019 patents, 5%)** PV modules or arrays of single PV cells
- **H01L31/05 (2667 patents, 4%)** Electrical interconnection means between PV cells inside the PV module
- **H01L51/50 (2332 patents, 4%)** specially adapted for light emission

Which codes are used

CPC CODE (MAINGROUP)

ENERGÍAS RENOVABLES (94255 PATENTS)

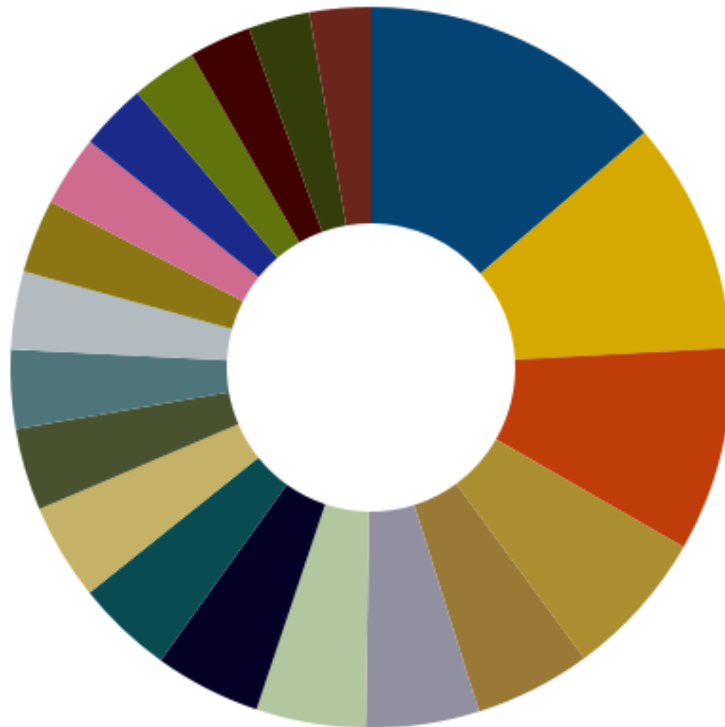


- Y02E10/00 (94255 patents, 43%)** Energy generation through renewable energy sources
- H01L31/00 (20357 patents, 9%)** Semiconductor devices sensitive to infra-red radiation
- Y02P70/00 (14175 patents, 6%)** Climate change mitigation technologies in the production process for final industrial or consumer products
- H01L51/00 (10770 patents, 5%)** Solid state devices using organic materials as the active part
- F05B2240/00 (8869 patents, 4%)** Components
- Y02B10/00 (7053 patents, 3%)** Integration of renewable energy sources in buildings
- F05B2260/00 (5866 patents, 3%)** Function
- F03D1/00 (5667 patents, 3%)** Wind motors with rotation axis substantially parallel to the air flow entering the rotor
- F03D7/00 (5665 patents, 3%)** Controlling wind motors
- F03D9/00 (5469 patents, 3%)** Adaptations of wind motors for special use;Combinations of wind motors with apparatus driven thereby;Wind motors specially adapted for installation in particular locations

Which codes are used

CPC CODE (FULL)

ENERGÍAS RENOVABLES (94255 PATENTS)



- Y02E10/50 (14567 patents, 14%) Photovoltaic energy
- Y02E10/549 (11069 patents, 10%) organic PV cells
- Y02P70/521 (9743 patents, 9%) Photovoltaic generators
- Y02E10/721 (7042 patents, 7%) Blades or rotors
- Y02E10/723 (5549 patents, 5%) Control of turbines
- Y02E10/52 (5398 patents, 5%) PV systems with concentrators
- Y02E10/725 (5221 patents, 5%) Generator or configuration
- Y02E10/47 (5060 patents, 5%) Mountings or tracking
- Y02E10/44 (4622 patents, 4%) Heat exchange systems
- Y02E10/40 (4587 patents, 4%) Solar thermal energy
- Y02E10/728 (3912 patents, 4%) Onshore towers
- Y02P70/523 (3766 patents, 4%) Wind turbines
- Y02E10/38 (3719 patents, 4%) Wave energy or tidal swell
- Y02E10/563 (3510 patents, 3%) for grid-connected applications
- Y02E10/547 (3369 patents, 3%) Monocrystalline silicon PV cells
- F03D9/25 (3184 patents, 3%) the apparatus being an electrical generator (F03D9/22 takes precedence)
- Y02E10/72 (3126 patents, 3%) Offshore towers

Which codes are used

ACADEMIC

ENERGÍAS RENOVABLES (94255 PATENTS)

CALIFORNIA INST OF TECHN
CENTRE NAT RECH SCIENT • ECOLE POLYTECH
ECOLE POLYTECHNIQUE FED DE LAUSANNE (EPFL) • ISIS INNOVATION
KOREA ENERGY RESEARCH INST • KOREA RES INST CHEM TECH
MASSACHUSETTS INST TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECH • TOKYO INST TECH • UNIV ARIZONA STATE
UNIV CALIFORNIA • UNIV CHINA THREE GORGES CTGU • UNIV DALIAN TECH
UNIV DELFT TECH • UNIV FLORIDA • UNIV HARBIN ENG • UNIV HEBEI TECHNOLOGY
UNIV HOHAI • UNIV HUAZHONG SCIENCE TECH • UNIV ILLINOIS
UNIV KING ABDULLAH SCI & TECH • UNIV KING FAHD PET & MINERALS
UNIV KUNMING SCIENCE & TECH • **UNIV KYOTO** • UNIV LELAND STANFORD JUNIOR
UNIV MICHIGAN • UNIV MICHIGAN REGENTS • UNIV NANYANG TECH
UNIV NORTH CHINA ELEC POWER • UNIV OF MAINE SYSTEM BOARD OF TRUSTEES • UNIV OSAKA
UNIV OXFORD INNOVATION LTD • UNIV PRINCETON • UNIV SHANDONG
UNIV SHANDONG SCIENCE & TECH • UNIV SHANGHAI JIAOTONG
UNIV SOUTH CHINA TECH • UNIV SOUTHEAST • UNIV SOUTHERN CALIFORNIA
UNIV STELLENBOSCH • UNIV SUNGKYUNKWAN RES & BUS • UNIV TEXAS • UNIV TIANJIN
UNIV TOHOKU • **UNIV TOKYO** • UNIV TSINGHUA • UNIV WUHAN TECH
UNIV ZHEJIANG • UNIV ZHEJIANG OCEAN

What are the schools, universities and institutions



COMPANY

ENERGÍAS RENOVABLES (94255 PATENTS)

3M INNOVATIVE PROPERTIES CO • **ALSTOM RENEWABLE TECHNOLOGIES** • ASAHI GLASS CO LTD

BEIJING GOLDWIND SCIENCE & CREATION WINDPOWER EQUIPMENT CO LTD

BOE TECHNOLOGY GROUP CO LTD • BOEING CO • BOSCH GMBH ROBERT

COMMISSARIAT ENERGIE ATOMIQUE • DOW GLOBAL TECHNOLOGIES LLC

DU PONT • FRAUNHOFER GES FORSCHUNG • FUJIFILM CORP

GAMESA INNOVATION & TECH SL • **GEN ELECTRIC**

GUANGDONG MEIYAN JIXIANG HYDROPOWER CO LTD • HITACHI CHEMICAL CO LTD • HITACHI LTD

IBM • JAPAN DISPLAY INC • KYOCERA CORP • LG CHEMICAL LTD

LG DISPLAY CO LTD • LG ELECTRONICS INC

LM WP PATENT HOLDING AS • **MERCK PATENT GMBH**

mitsubishi electric corp • MITSUBISHI HEAVY IND LTD • NITTO DENKO CORP

NORDEX ENERGY GMBH • PANASONIC IP MAN CO LTD

SAMSUNG DISPLAY CO LTD • SAMSUNG ELECTRONICS CO LTD

SAMSUNG SDI CO LTD • SEKISUI CHEMICAL CO LTD • SEMICONDUCTOR ENERGY LAB

SENVION GMBH • SHARP KK • SHINETSU CHEMICAL CO • **SIEMENS AG**

SMA SOLAR TECHNOLOGY AG • SOLARCITY CORP • SONY CORP

STATE GRID CORP CHINA • SUMITOMO ELECTRIC INDUSTRIES

SUNPOWER CORP • TORAY INDUSTRIES • TOSHIBA KK

TOTAL MARKETING SERVICES • **VESTAS WIND SYS AS**

WOBBEN PROPERTIES GMBH

What are the companies



INVENTOR

ENERGÍAS RENOVABLES (94255 PATENTS)

ADACHI SHUICHIRO • ALTMIKUS ANDREE • **BEEKMANN ALFRED**

BLOUIN NICOLAS • BUESING ARNE • **BUSKER KAI** • CARUSO CHRISTOPHER DANIEL

COUSINS PETER JOHN • **EBERLE THOMAS** • **FORREST STEPHEN R**

GROSSMANN TOBIAS • **HARLEY GABRIEL** • HAYAKAWA AKINOBU • HEIL HOLGER

HOFFMANN ALEXANDER • IPPOLITO MASSIMO • IWAMURO MITSUNORI

IWASAKI TAKASHI • JATSCH ANJA • JIANG ZHANFENG • KOBAYASHI KATSUMI

KROEBER JONAS VALENTIN • KURATA YASUSHI • LEE JAE-CHOL

LENNARTZ CHRISTIAN • LIU YANG • MITCHELL WILLIAM • **MONTENEGRO ELVIRA**

MOSLEHI MEHRDAD M • MUJICA-FERNAUD TERESA • NAGAI YOUICHI

NOJIRI TAKESHI • OTSUKA HIROYUKI

PARHAM AMIR HOSSAIN • PFLUMM CHRISTOF

RIM SEUNG BUM • ROHDEN ROLF • SAITO KENJI • SEWELL RICHARD HAMILTON

SMITH DAVID • **STOESSEL PHILIPP**

VANDER LIND DAMON • VOGES FRANK • **WANG TAO** • WANG TIANZE

WATABE TAKENORI • WOBLEN ALOYS • YAMAZAKI SHUNPEI

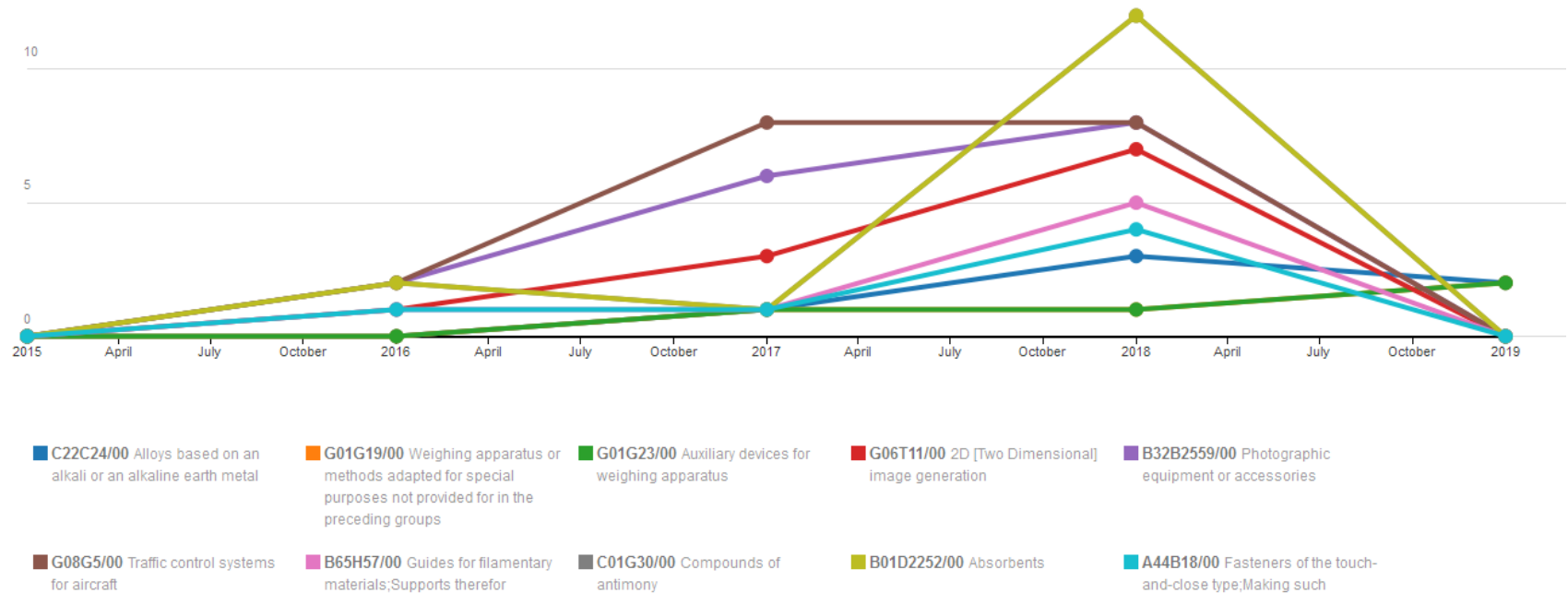
YARBROUGH AARON A • **YOSHIDA MASATO**

Who are the inventors



CODE EVOLUTION (CPC)

ENERGÍAS RENOVABLES (94255 PATENTS)



Who or what has an increasing trend of minimum 3 years

APPLICANT TIMELINE

ENERGÍAS RENOVABLES (94255 PATENTS)

	2015	2016	2017	2018	2019
WOBLEN PROPERTIES GMBH	563	602	614	399	13
VESTAS WIND SYS AS	406	383	473	479	25
SIEMENS AG	544	370	322	221	12
GEN ELECTRIC	427	398	335	230	2
MERCK PATENT GMBH	306	266	259	198	6
SUNPOWER CORP	284	320	232	148	9
SAMSUNG DISPLAY CO LTD	117	172	266	194	
LG ELECTRONICS INC	147	142	193	204	2
COMMISSARIAT ENERGIE ATOMIQUE	187	205	136	69	2
PANASONIC IP MAN CO LTD	187	166	143	77	8
TOSHIBA KK	186	177	88	45	1
SENVION GMBH	50	166	136	129	6
LG CHEMICAL LTD	212	147	65	55	3
FUJIFILM CORP	176	121	86	47	6
mitsubishi heavy ind ltd	164	114	94	46	
SHARP KK	159	128	81	44	2
BASF AG	140	121	80	35	2
LM WP PATENT HOLDING AS	82	85	145	46	8
LG DISPLAY CO LTD	58	63	104	134	
HITACHI LTD	121	101	85	46	

Who or what over time

CODE TIMELINE (CPC)

ENERGÍAS RENOVABLES (94255 PATENTS)

	2015	2016	2017	2018	2019
Y02E10/00	30247	27514	22482	13368	644
H01L31/00	7027	5322	4605	3240	163
Y02P70/00	4692	4118	3283	1985	97
H01L51/00	2920	2684	2808	2258	100
F05B2240/00	2553	2257	2296	1680	83
Y02B10/00	2328	2120	1669	905	31
F05B2260/00	1645	1543	1465	1148	65
F03D1/00	1509	1527	1491	1082	58
F03D7/00	1593	1400	1404	1213	55
F03D9/00	1780	1523	1246	881	39
H02J3/00	1541	1405	1350	936	37
F03D80/00	1592	1343	1170	1052	40
F03D13/00	1408	1247	1189	847	48
F05B2270/00	954	979	1050	912	49
H02S40/00	995	927	1087	801	43
H01L2251/00	910	948	1065	811	26
F03B13/00	1059	969	968	644	48
H01L27/00	796	848	1089	911	35
H02S20/00	919	891	842	574	28
Y02E60/00	763	777	694	378	11

Who or what over time

COMPANY TIMELINE

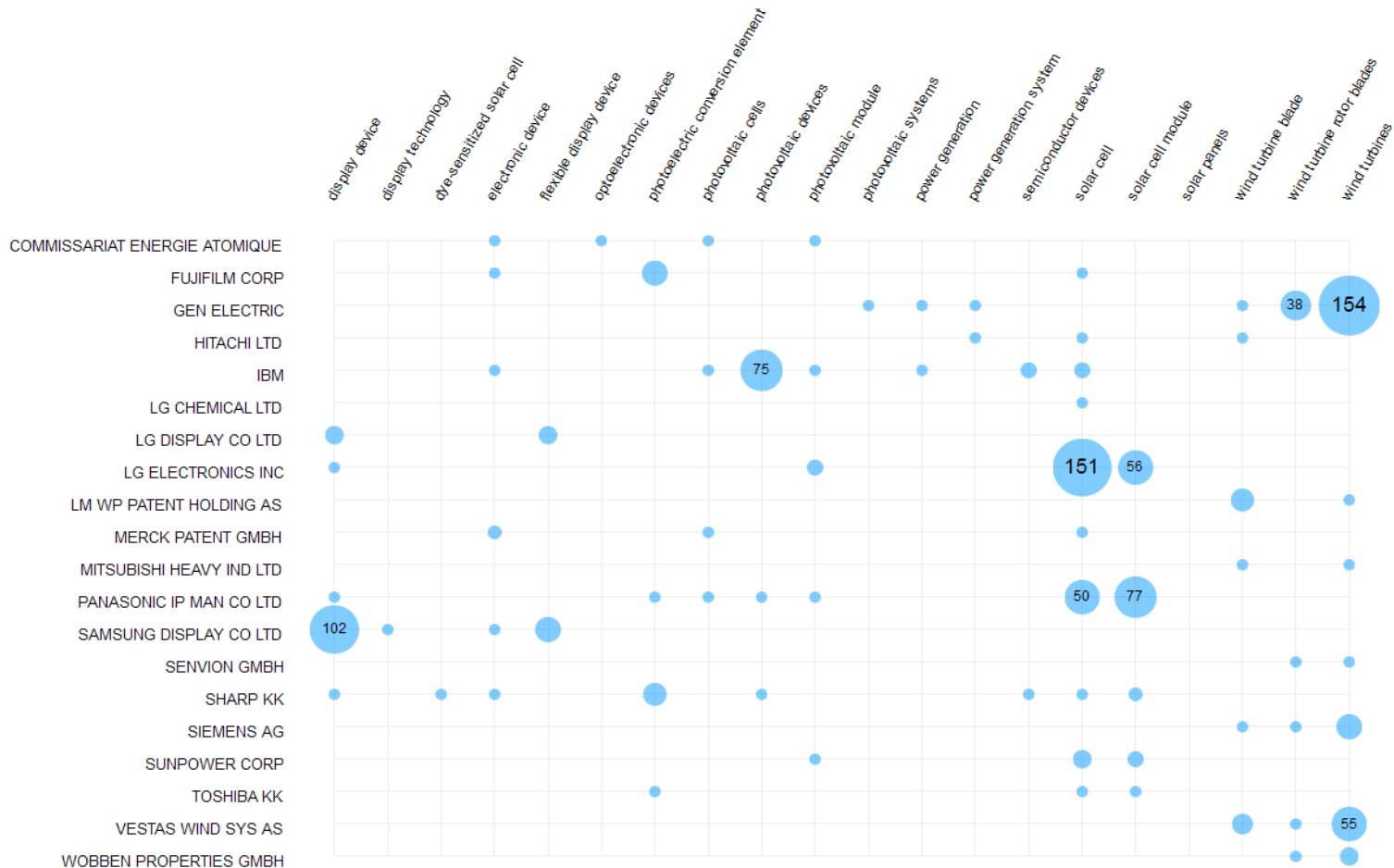
ENERGÍAS RENOVABLES (94255 PATENTS)

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PANASONIC IP MAN CO LTD	187	166	143	77	8
TOSHIBA KK	186	177	88	45	1
SENVION GMBH	50	166	136	129	6
LG CHEMICAL LTD	212	147	65	55	3
FUJIFILM CORP	176	121	86	47	6
MITSUBISHI HEAVY IND LTD	164	114	94	46	
SHARP KK	159	128	81	44	2
LM WP PATENT HOLDING AS	82	85	145	46	8
LG DISPLAY CO LTD	58	63	104	134	
HITACHI LTD	121	101	85	46	
STATE GRID CORP CHINA	137	149	53	10	1

Who or what over time

COMPANIES VS FIELDS OF INVENTIONS

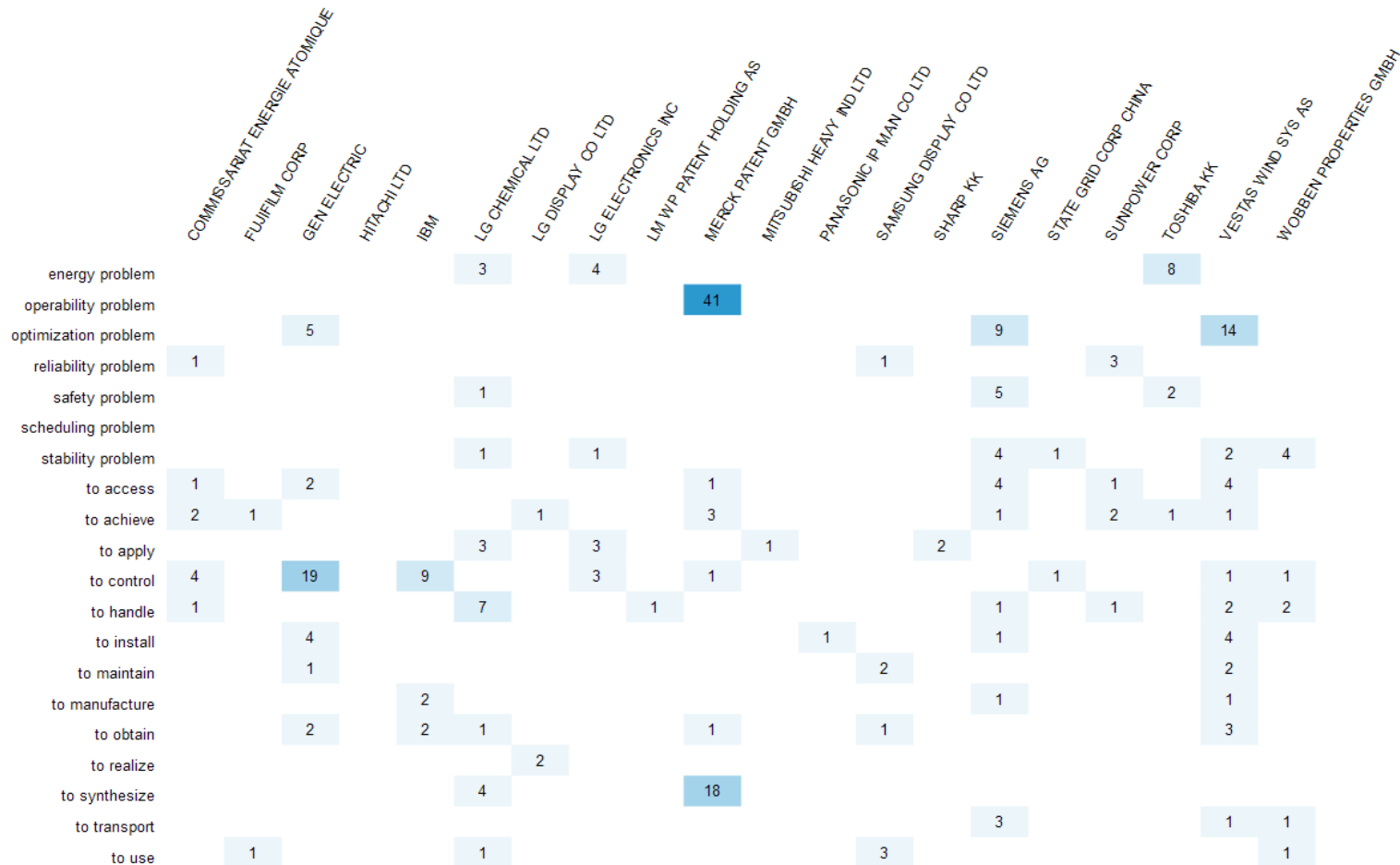
ENERGÍAS RENOVABLES (94255 PATENTS)



Who or what versus who or what

PROBLEMS VS COMPANIES

ENERGÍAS RENOVABLES (94255 PATENTS)



Who or what versus who or what

DOMAIN (CPC)

ENERGÍAS RENOVABLES (94255 PATENTS)



In which code domains are your patents

CODE MAP (CPC)

ENERGÍAS RENOVABLES (94255 PATENTS)



Codes of patents on a landscape

ELEMENTS

ENERGÍAS RENOVABLES (94255 PATENTS)

1 H Hydrogen	2 He Helium
3 Li Lithium	4 Be Beryllium
11 Na Sodium	12 Mg Magnesium
19 K Potassium	20 Ca Calcium
37 Rb Rubidium	38 Sr Strontium
55 Cs Cesium	56 Ba Barium
87 Fr Francium	88 Ra Radium
21 Sc Scandium	22 Ti Titanium
23 V Vanadium	24 Cr Chromium
25 Mn Manganese	26 Fe Iron
27 Co Cobalt	28 Ni Nickel
29 Cu Copper	30 Zn Zinc
31 Ga Gallium	32 Ge Germanium
33 As Arsenic	34 Se Selenium
35 Br Bromine	36 Kr Krypton
39 Y Yttrium	40 Zr Zirconium
41 Nb Niobium	42 Mo Molybdenum
43 Tc Technetium	44 Ru Ruthenium
45 Rh Rhodium	46 Pd Palladium
47 Ag Silver	48 Cd Cadmium
49 In Indium	50 Sn Tin
51 Sb Antimony	52 Te Tellurium
53 I Iodine	54 Xe Xenon
57-71 Lanthanides	72 Hf Hafnium
73 Ta Tantalum	74 W Tungsten
75 Re Rhenium	76 Os Osmium
77 Ir Iridium	78 Pt Platinum
79 Au Gold	80 Hg Mercury
81 Tl Thallium	82 Pb Lead
83 Bi Bismuth	84 Po Polonium
85 At Astatine	86 Rn Radon
104 Rf Rutherfordium	105 Db Dubnium
106 Sg Seaborgium	107 Bh Bohrium
108 Hs Hassium	109 Mt Meitnerium
110 Ds Darmstadtium	111 Rg Roentgenium
112 Cn Copernicium	113 Nh Nihonium
114 Fl Flerovium	115 Mc Moscovium
116 Lv Livermorium	117 Ts Tennessine
118 Og Oganesson	
57 La Lanthanum	58 Ce Cerium
59 Pr Praseodymium	60 Nd Neodymium
61 Pm Promethium	62 Sm Samarium
63 Eu Europium	64 Gd Gadolinium
65 Tb Terbium	66 Dy Dysprosium
67 Ho Holmium	68 Er Erbium
69 Tm Thulium	70 Yb Ytterbium
71 Lu Lutetium	
89 Ac Actinium	90 Th Thorium
91 Pa Protactinium	92 U Uranium
93 Np Neptunium	94 Pu Plutonium
95 Am Americium	96 Cm Curium
97 Bk Berkelium	98 Cf Californium
99 Es Einsteinium	100 Fm Fermium
101 Md Mendelevium	102 No Nobelium
103 Lr Lawrencium	

atomic number

chemical symbol

name

number of patents

- Non-metals
- Alkaline earths
- Transition metals
- Basic metals
- Halogens
- Noble gases
- Alkali metals
- Semi-metals
- Lanthanides
- Actinides

Which elements are mentioned

FIELD

ENERGÍAS RENOVABLES (94255 PATENTS)



Which fields are mentioned

TECHNOLOGY

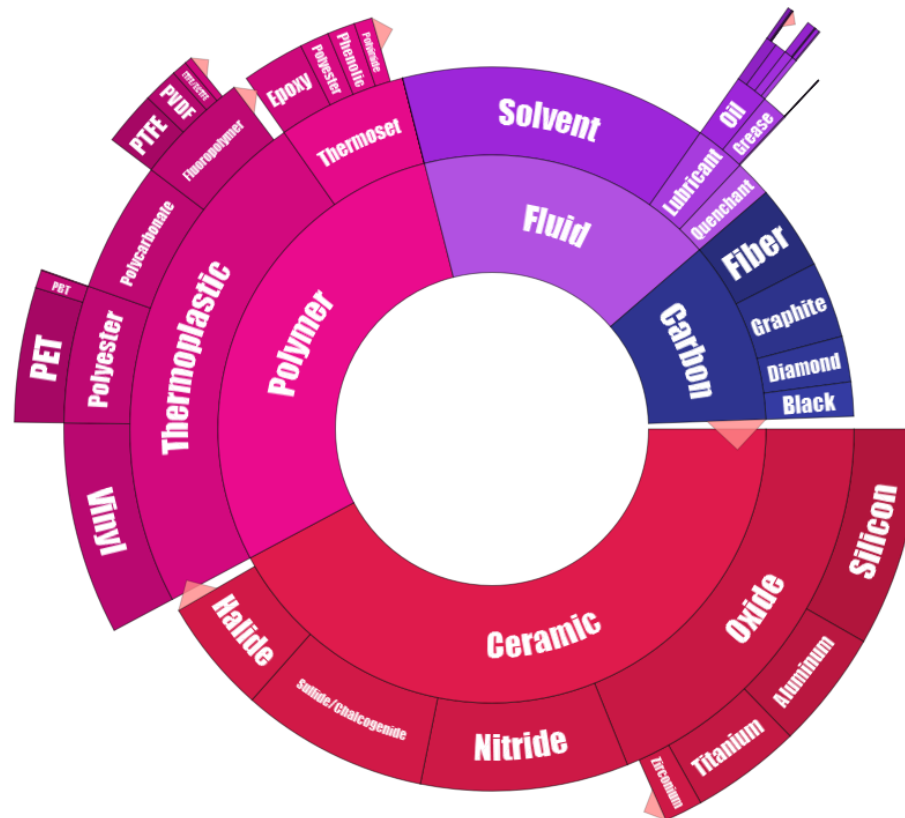
ENERGÍAS RENOVABLES (94255 PATENTS)



Which technological areas are mentioned

MATERIALS

ENERGÍAS RENOVABLES (94255 PATENTS)



Which materials are mentioned

FIELDS OF INVENTION

ENERGÍAS RENOVABLES (94255 PATENTS)

adopted as an energy generation solution on an increasingly widespread scale • aerial vehicles • compound
compounds for organic electric elements • controlling a wind turbine • display apparatus
display device • display technology • dye-sensitized solar cell • electro-conductive paste
electronic device • flexible display • flexible display apparatus • flexible display device
generating electricity • light-emitting device • materials for use in electronic devices • matter • novel compound
operating a wind turbine • **optoelectronic devices** • photoelectric conversion device
photoelectric conversion element • photovoltaic cells
photovoltaic devices • photovoltaic module • photovoltaic power generation
photovoltaic systems • power generation • power generation system • renewable energy
rotor blade • semiconductor devices • semiconductor structures • semiconductors
solar cell • solar cell module • solar cells and the fabrication • solar energy
solar energy systems • solar modules • **solar panels** • substrate for an organic electronic device • wind farms
wind power generation • wind power generation system • wind turbine blade • wind turbine generators
wind turbine rotor blades • **wind turbines**

Which fields of invention are mentioned



TRADEMARKS

ENERGÍAS RENOVABLES (94255 PATENTS)

3M • Aerosil • Altera • Bluetooth • CLEVIOS • Corning • Cytop
Cytop 107M • Cytop 809M • Deconex • DISPERBYK • DuPont
Dyneema • ECHONET Lite • FC 43 • FC75 • Fluoropel • IBM • Irganox
Kapton • Kevlar • Kynar • Lexan • Lisicon • Lumiflon • Lumogen • Microsoft • MIRASOL
Mylar • Nafion • Nylon • Plexcore • Plexiglas • Pyrex • Si • Starphire • Surlyn • TE
Tedlar • Teflon • Teflon AF • TEGO • TEXANOL • Thixcin • Tinuvin
Triton • Velcro • Wi-Fi • Xilinx • ZigBee

Which trademarks are mentioned



PRODUCTS

ENERGÍAS RENOVABLES (94255 PATENTS)

adhesive layer • alkyl group • aryl group • beneficial effects • carbon atoms • conversion efficiency
dye-sensitized solar cell • **electrical energy** • heat collector • heat energy • hot water
hydrogen atom • kinetic energy • mechanical energy • optoelectronic device • organic solar cell • passivation layer
photoelectric conversion efficiency • **photoelectric conversion element** • photoelectric conversion layer
photovoltaic cell • photovoltaic device • photovoltaic module
photovoltaic panel • photovoltaic system • power grid • proper order • rotor blade • service life
silicon substrate • solar battery • **solar cell** • solar cell module
solar cell panel • solar collector • **solar energy** • solar module • solar panel
solar radiation • **solar water heater** • storage battery • technical field • water heater
water inlet • water tank • wind energy • wind farm • **wind turbine**
wind turbine blade • wind turbine generator

Which products are mentioned



PROBLEMS

ENERGÍAS RENOVABLES (94255 PATENTS)

adhesion problem • **art problem** • control problem • corrosion problem • efficiency problem

emission problem • **energy problem** • installation • leakage problem

maintenance problem • noise problem • **operability problem**

optimization problem • pollution problem • programming problem • quality problem

reliability problem • safety problem • **scheduling problem**

stability problem • **to access** • **to achieve** • to apply • to carry

to control • to fabricate • to find • to form • to form the tunneling layer

to garner any significant benefits in flexing the base substrate of the display panel • **to handle**

to implement • to incorporate • to increase the number of the metal wires • **to install**

to maintain • to manufacture • to obtain • to perceive • to predict • to produce

to realize • to remove • to repair • to scale • to synthesize • to transport • to use

transporting the tower from the manufacturing site • use

Which problems are mentioned



ADJECTIVES

ENERGÍAS RENOVABLES (94255 PATENTS)

able • above • additional • advantageous • alternative • apparent • appropriate • available
brief • certain • common • conductive • conventional • detailed • direct • effective • efficient
entire • equal • exemplary • flexible • general • illustrated • individual • long • many • mechanical
multiple • necessary • organic • parallel • photovoltaic • preferred • prior • related
schematic • separate • several • short • similar • skilled • solar • structural • sufficient
technical • thermal • thin • third • total • transparent

Which adjectives are mentioned



NOUNS

ENERGÍAS RENOVABLES (94255 PATENTS)

absorption • aluminum • aspect • **background** • battery • benefit • blade • carbon
chemical • **conversion** • copper • density • **detail** • diagram • disclosure
energy • factor • formation • **glass** • grid • height • incident • junction • **loss** • mode
modifications • **panel** • parameters • **patent** • path • perspective • phase • plane • polymer
principles • priority • rotor • **scope** • **series** • **silicon** • spirit • strength • **summary**
sunlight • **techniques** • tower • **turbine** • **variations** • wavelength • words

Which nouns are mentioned



VERBS

ENERGÍAS RENOVABLES (94255 PATENTS)

anchoring • **appended** • **appreciated** • believed • benefit • conjugated
construed • dashed • **departing** • deployed • dictates • did • diluted
discussed • doped • drying • dye • elongated • **entitled** • exaggerated
exemplified • experience • **explained** • exploded • harvesting • imply • labeled • laying
like • **locking** • **meant** • named • obscure • outlined • pivoting • **rated** • **reacting** • **recited**
recombine • semiconducting • spanning • **spinning** • stretching • **substituted** • summarized
textured • **treated** • tuned • **understood** • washed

Which verbs are mentioned



COMPONENTS

ENERGÍAS RENOVABLES (94255 PATENTS)

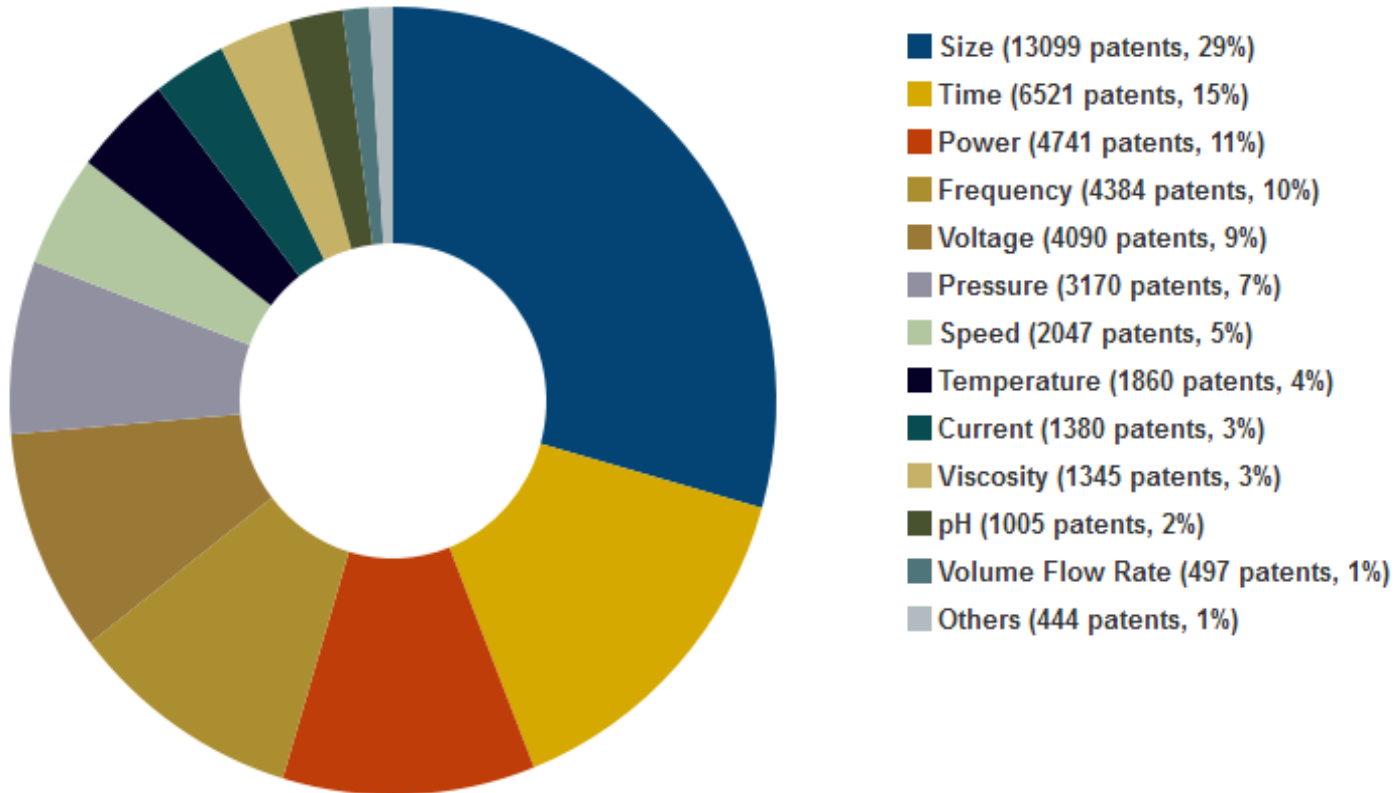
base • blade • blades • block • buffer layer • cell • cells
comparative example • comparative examples • compound • controller
device • electrode • electrodes • first electrode • formula • frame • generator
group • hole • holes • housing • hub • inverter • layer • layers • leading edge • line
module • nacelle • opening • openings • panel • portion • rotor • rotor blade
rotor blades • second electrode • shaft • solar cell • solar cells • substrate
surface • system • thickness • tower • trailing edge • turbine • water
wind turbine

Which components are mentioned



UNIT FIELD

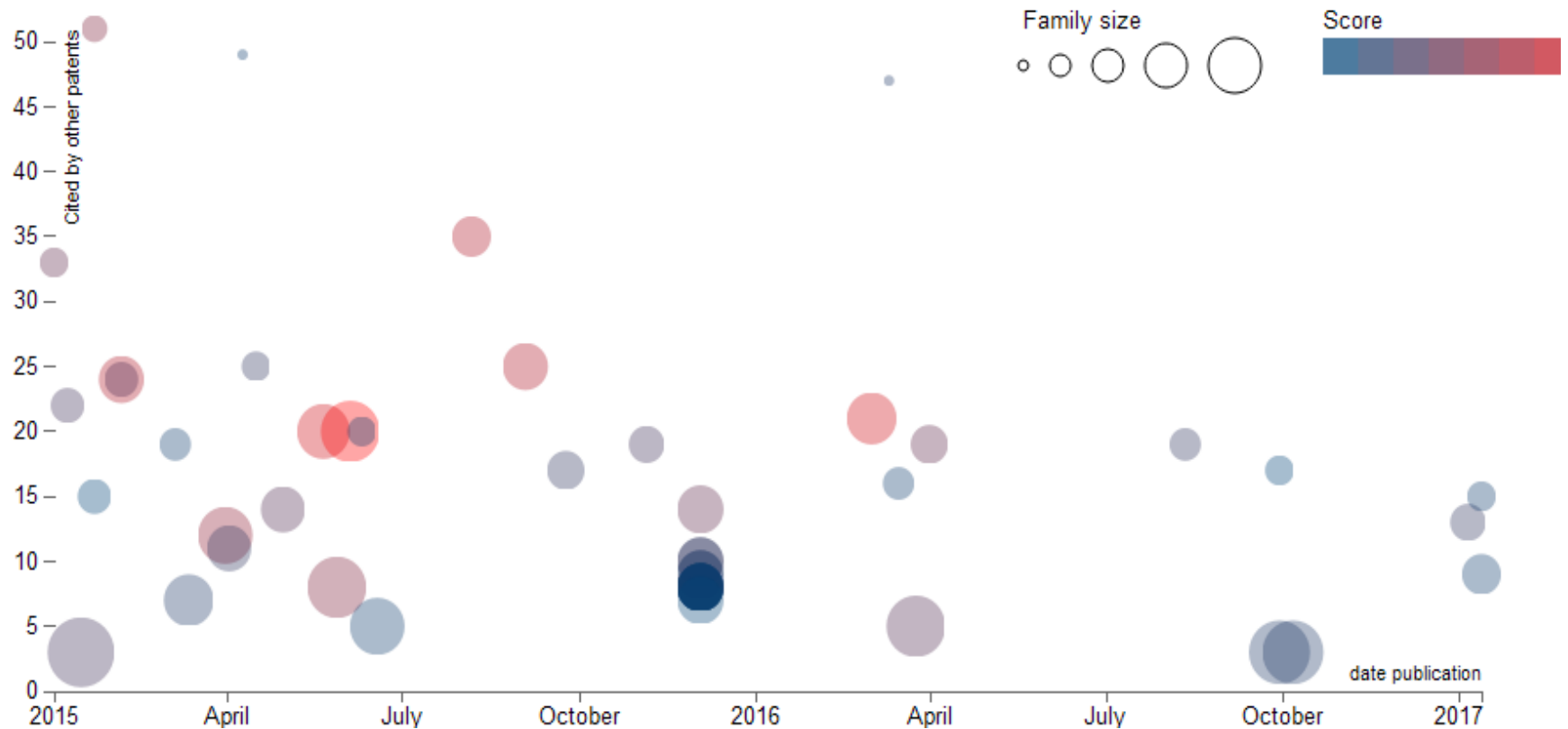
ENERGÍAS RENOVABLES (94255 PATENTS)



Which units are mentioned

PATENT VALUE

ENERGÍAS RENOVABLES (94255 PATENTS)



Which patents are most valuable based on recency, family size and forward citations size