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## Assisted patent landscape analysis for the promotion of research and innovation

Selected field/tag: teaser\_LI\_Batteries

Selected Geographic limitation: Germany and Switzerland (derived from inventor address)

Reporting Date: 17.01.2019

Retrieval Date: 08\_18

Search concluded on: -

Researcher: -



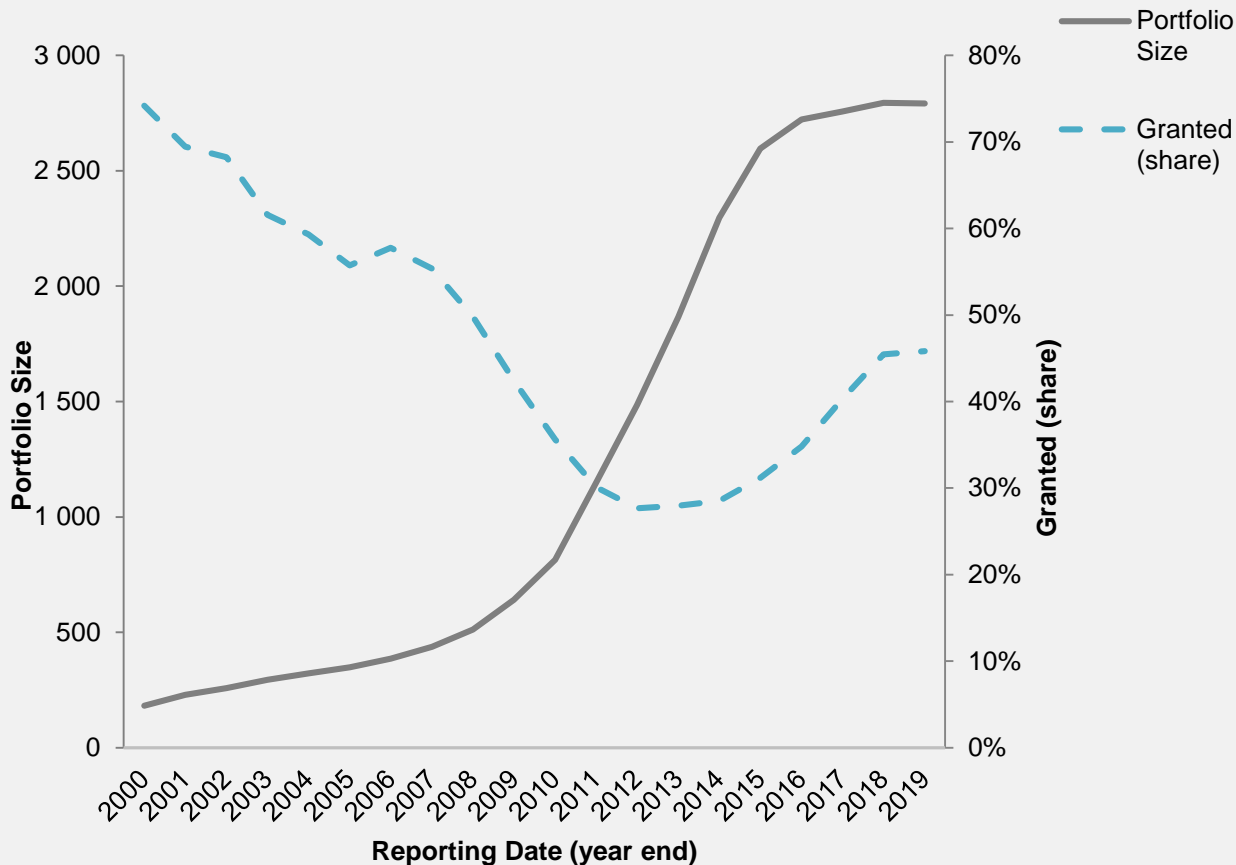
## Time curve of overall data set & share of Granted Patents thereof

Portfolio Size: Number of patent families (simple patent family definition according to EPO<sup>1</sup>)

Reporting Date: Number of active patents at the end of respective year.

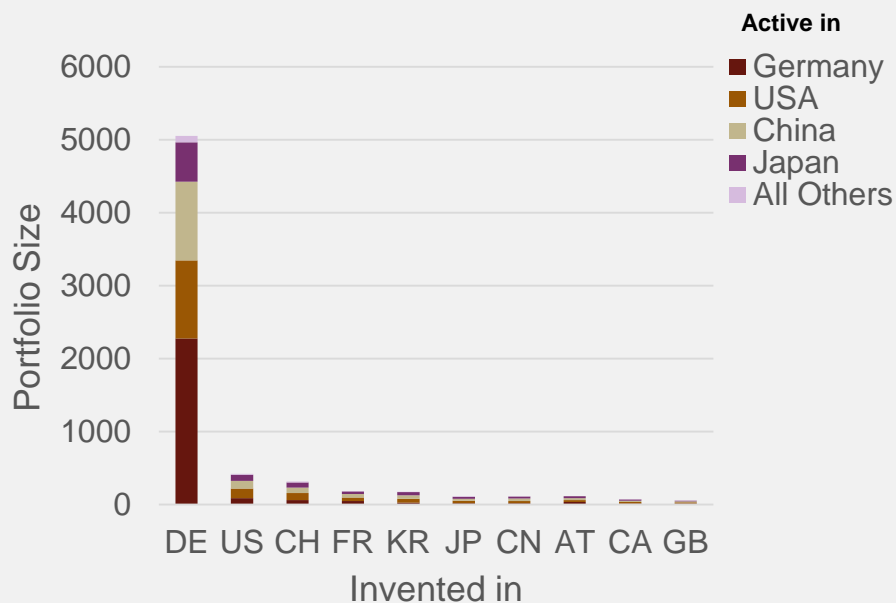
Active patents: Patent families comprising at least one pending application a granted patent, which is not lapsed, withdrawn, invalidated or rejected at the respective date (according to Inpadoc Database).

Granted (share): Share of patent families granted in any jurisdiction (this includes patent families and family members that have been granted but are now inactive)



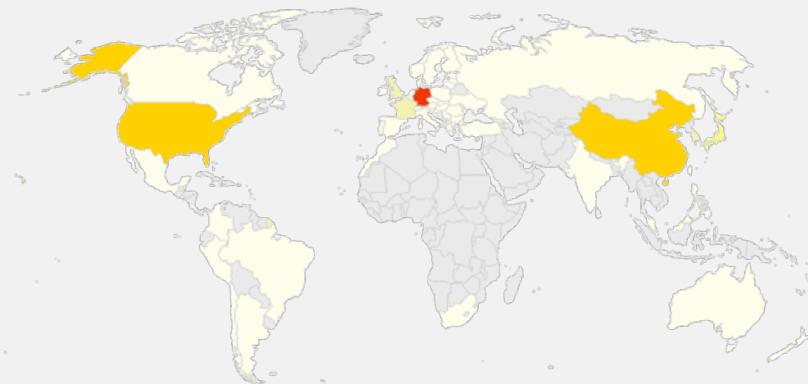
<sup>1</sup> <http://www.epo.org/searching-for-patents/helpful-resources/first-time-here/patent-families/definitions.html>

## Geographic Analysis Origin & Active Countries



Invented in: Country of origin, according to the address information of the inventor  
 Active means a granted or a pending patent application existed (at that date NOT (yet) rejected, withdrawn, lapsed, invalidated, etc.)  
 Active in: Countries in which granted patents or patent appl. on the invention exist at the Reporting Date.

## Patent Protection: Extended Jurisdictions



Not showing pending EP and PCT applications

	Germany	USA	China	Japan	South Korea	United Kingdom	France	EP pending	Switzerland	Ireland
Portfolio Size	2'309	1'138	1'124	585	514	470	447	390	240	189
	<b>Share</b>		<b>Absolute</b>							
EPO active and pending	13.97%		390							
WIPO active and pending	6.27%		175							

Countries protected: Countries in which patents or patent applications exists at the analysis date and are active



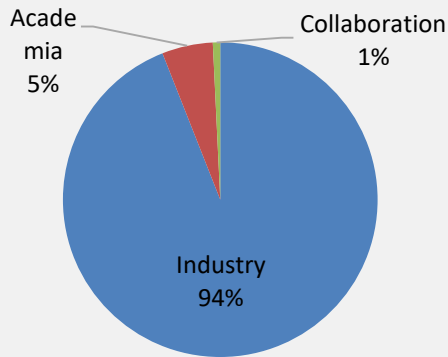
# Top 25 Patentowner & Priority Country

Patent Owner: Most probable owner of the aggregated patent portfolio, according to inpadoc as well as to a consolidated patent owner database provided by PatentSight.

Ownertype: Share of patents owned by public research organization compared to companies.

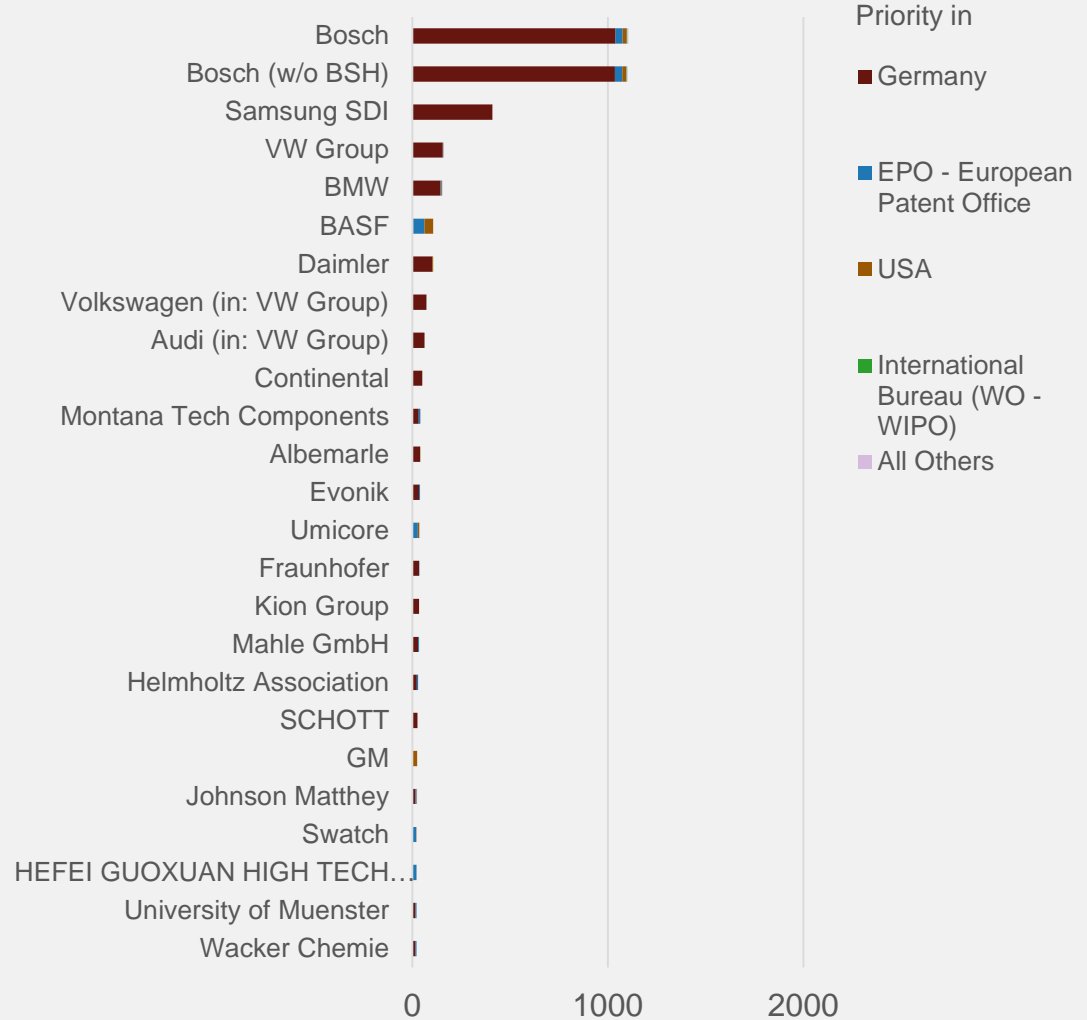
Active patents: Patent families comprising at least one pending application a granted patent, which is not lapsed, withdrawn, invalidated or rejected at the respective date (according to Inpadoc Database).

Priority in: Country of priority application(s)



2'773 of 2'792 patent families are shown

Share of patent families by owner type: Academia (incl. governmental) vers. Industry, and collaboration between both types.

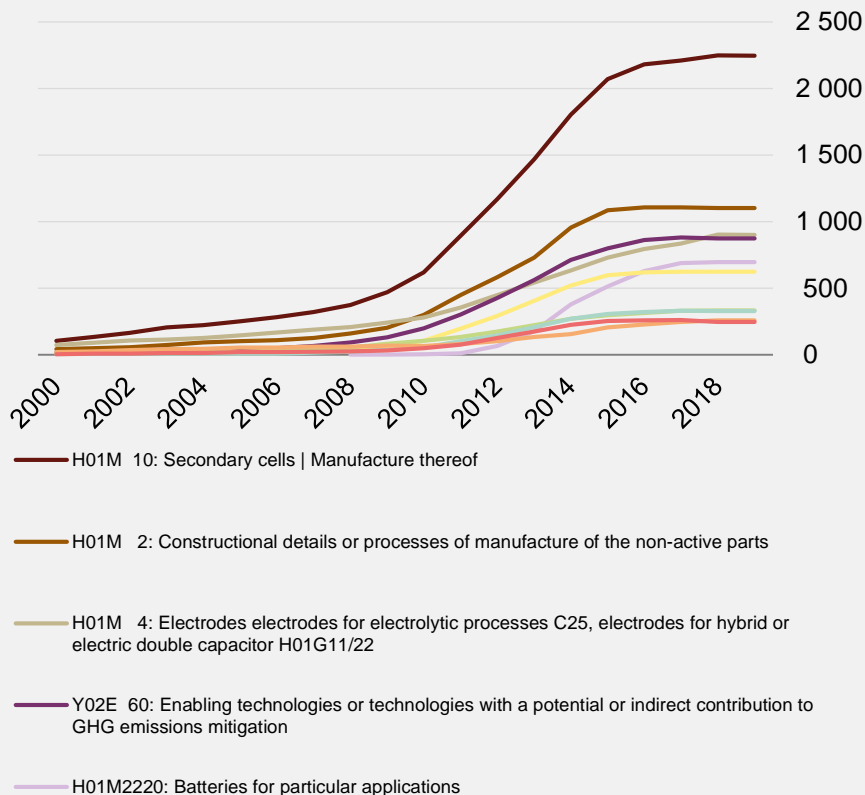


Portfolio Size

Top 25 Owner in Set, Priority Country of owners portfolio  
Top 25 Owners, Priority Country for owners portfolio



# Main CPC Groups and temporal Development over time



## CPC Group Level 4

CPC Group Level 4	Portfolio Size
H01M 10: Secondary cells   Manufacture thereof	2'247
H01M 2: Constructional details or processes of manufacture of the non-active parts	1'102
H01M 4: Electrodes electrodes for electrolytic processes C25, electrodes for hybrid ...	900
Y02E 60: Enabling technologies or technologies with a potential or indirect contributi...	873
H01M2220: Batteries for particular applications	697
Y02T 10: Road transport of goods or passengers	624
H02J 7: Circuit arrangements for charging or depolarising batteries or for supplying l...	333
B60L 11: Electric propulsion with power supplied within the vehicle B60L8/00, B60L1...	328
H01M2300: Electrolytes	258
Y02P 70: Climate change mitigation technologies in the production process for final i...	247
H01M2200: Safety devices for primary or secondary batteries	160
G01R 31: Arrangements for testing electric properties   Arrangements for locating ele...	152
H01M 6: Primary cells   Manufacture thereof	146
C01P2006: Physical properties of inorganic compounds	142
Y10T 29: Metal working	125
B60L2240: Control parameters of input or output   Target parameters	119
B60L 3: Electric devices on electrically-propelled vehicles for safety purposes   Monit...	118
C01P2002: Crystal-structural characteristics	116
C01P2004: Particle morphology	114
H01G 11: Hybrid capacitors, i.e. capacitors having different positive and negative ele...	97
Y02T 90: Enabling technologies or technologies with a potential or indirect contributi...	96
H01M 12: Hybrid cells   Manufacture thereof	93
C01G 53: Compounds of nickel	78
H01M 8: Fuel cells   Manufacture thereof	75
C01B 25: Phosphorus   Compounds thereof C01B6/00 , C01B21/00, C01B23/00 take...	58



## Top 100 Patent Owners

Patent Owner: Most probable owner of the patent portfolio, according to inpadoc as well as to a consolidated patent owner database provided by PatentSight.

Active means a granted or a pending patent application existed (at that date NOT (yet) rejected, withdrawn, lapsed, invalidated, etc.)

Countries filed (Active Patent families 12/2016)

Rank	Owner	Portfolio Size
1	Bosch	1'104
2	Bosch (w/o BSH)	1'101
3	Samsung SDI	412
4	VW Group	158
5	BMW	154
6	BASF	101
7	Daimler	101
8	Volkswagen (in: V...	72
9	Audi (in: VW Group)	62
10	Continental	51
11	Montana Tech Co...	42
12	Albemarle	41
13	Evonik	40
14	Umicore	38
15	Fraunhofer	36
16	Kion Group	34
17	Mahle GmbH	34
18	Helmholtz Associat...	29
19	SCHOTT	26
20	GM	25
21	Johnson Matthey	25
22	Swatch	22
23	HEFEI GUOXUAN ...	21
24	University of Muen...	21
25	Wacker Chemie	21
26	Porsche (in: VW Gr...	19
27	KIT (in: H.-A.)	18
28	Siemens	18
29	Sion Power	18
30	Johnson Controls	17
31	LG Chem	16
32	Infineon	15
33	Solvay	15
34	DowDuPont	14
35	Imerys	14

Rank	Owner	Portfolio Size
36	Jungheinrich	14
37	Elringklinger	13
38	Applied Materials	12
39	DILO TRADING AG	12
40	Heraeus	12
41	INNOLITH ASSET...	12
42	Merck KGaA	12
43	ELECTROVAYA INC.	11
44	Jindal Poly Films	10
45	Max Planck	10
46	Thyssenkrupp	10
47	Dresden University...	9
48	SGL Carbon	9
49	Airbus Group	8
50	Dr. Oetker	8
51	FZJ (in: H.-A.)	8
52	Leclanche	8
53	Freudenberg & Co	7
54	HOPPECKE BATT...	7
55	KKR	7
56	Koki Holdings (in: ...	7
57	Metabo (in: Hitachi ...	7
58	PHONEX BROAD...	7
59	Stihl	7
60	Sumitomo Chemical	7
61	Sumitomo Chemic...	7
62	3M	6
63	Auto-Kabel Manag...	6
64	Berkshire Hathaway	6
65	Duracell (in: B.-H.)	6
66	Leibniz Association	6
67	MAN (in: VW Group)	6
68	Toda Kogyo	6
69	University of Stuttg...	6
70	ZSW	6

Rank	Owner	Portfolio Size
71	ADS TEC GMBH	5
72	BLUEHORN SA	5
73	Clariant	5
74	Deutz AG	5
75	EPF Lausanne	5
76	Lanxess	5
77	LITRONIK BATTE...	5
78	Philip Morris	5
79	ROECHLING AUT...	5
80	AKASOL GMBH	4
81	CNRS	4
82	Covestro	4
83	Ford	4
84	Jacobs University ...	4
85	Toyota Motor	4
86	Valeo	4
87	WYON	4
88	Xerox	4
89	BMZ BATTERIE M...	3
90	BMZ GmbH	3
91	BSH (in: Bosch)	3
92	Dialog Semiconduc...	3
93	DITF Denkendorf	3
94	Draexlmaier Group	3
95	DUESENFELD	3
96	ETH Zurich	3
97	FM LAB, INC	3
98	Freiberg Uni. of Mi...	3
99	GENIUS PATENTV...	3
100	Mann+Hummel	3