

SAMPLE

# Silicon Anode for Li-ion Batteries

## Patent Landscape Analysis

September 2024



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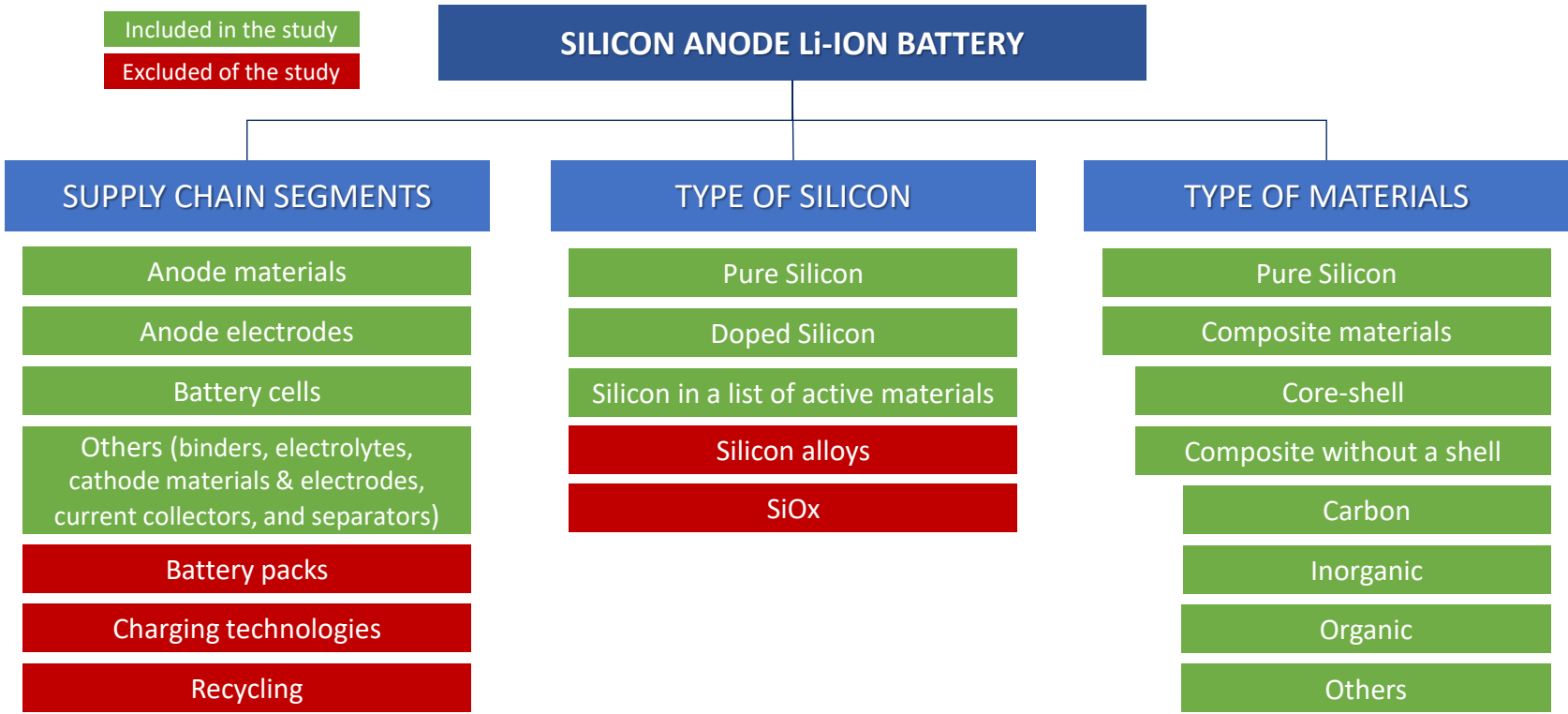
- Methodology for patent search, selection and analysis
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# INTRODUCTION

## Scope of the report

- This report provides a detailed picture of the patent landscape related to **Silicon Anode for Li-ion Batteries**, covering the whole value chain (anode materials, anode electrode, battery cells, electrolytes, binders, etc.)
- We have selected and analyzed more than **38,750 patents and patent applications** published **worldwide** up to **September 2023**, representing more than **18,200 patent families** (inventions) relevant to the scope of this report.
- The patent search strategy has been implemented using advanced search equations in the patent database and by a cautious patent selection performed by the analyst to get the most relevant corpus.
- More details are available in METHODOLOGY part.



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# INTRODUCTION

Reading guide: find the right information in the report

SAMPLE

Report sections	Your concern → Information you get			
	TECHNOLOGY <i>For R&amp;D teams, engineers, scientists</i>	IP <i>For IP teams, patent attorneys</i>	MARKET <i>For executives, business developers</i>	PLAYER <i>Zoom in a competitor / partner</i>
<b>PATENT LANDSCAPE OVERVIEW</b> <ul style="list-style-type: none"><li>• <b>Ranking of players</b> (enforceability, current activity, geo/tech coverage, prior-art contribution, etc.)</li><li>• <b>Patent filings dynamics per player</b></li><li>• <b>IP collaborations</b> (co-filings, IPR transfers)</li><li>• <b>Patent litigation/oppositions</b></li></ul>	Innovators	Main patent owners IP risks/opportunities	Ecosystem (competitors, newcomers, partners, clients) Main trends IP vs Market	IP position vs Market position Player relationships (collaborations/dependencies)
<b>SEGMENTS ANALYSIS</b> <ul style="list-style-type: none"><li>• <b>Patent filings dynamics per segment</b></li><li>• <b>IP leaders per segment</b> (enforceability, current activity, blocking potential)</li><li>• <b>Key patents per segment</b></li><li>• <b>Recent patenting activity per segment</b></li></ul>	Technology trends Technology mapping	Blocking players IP risks/opportunities in each segment (FTO, litigation, licensing)	Benchmarking Markets of interest Future developments	IP position and level of investment in each segment Key IP developments
<b>IP PROFILE OF KEY PLAYERS</b> <ul style="list-style-type: none"><li>• <b>Patent portfolio summary</b> (portfolio size, IP activity evolution, patents legal status, geo/tech coverage, strengths/weaknesses, etc.)</li><li>• <b>Key patents</b></li><li>• <b>Recent patenting activity</b></li></ul>	Current R&D activities Technology roadmap	Blocking patents Geo/Tech coverage Link between patents and products	Future products Potential partners Potential targets	R&D investment level Key inventions Current IP activities Strengths / Weaknesses



PATENT DATABASE

Excel file with all analyzed patents

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This report includes an extensive Excel database with all 18,200+ patent families (inventions) selected and analyzed in this study. This useful patent database allows for multi-criteria searching and includes patent information (numbers, dates, assignees, title, abstract, etc.), hyperlinks to an updated online database (original documents, legal status, etc.), and affiliation segments (anode material, anode, battery cell, other battery cell components).

Silicon anode for Li-ion batteries (September 2024)																	Supply Chain			
Questel unique family ID	Publication numbers	Title	Abstract	Legal status (Pending, Granted, Revoked, Expired, Lapsed)	Current assignees (Orbit extraction)	Current assignees (Knowmade treatment)	Inventors	Earliest application date (yyyy-mm-dd)	Earliest publication date (yyyy-mm-dd)	Earliest grant date (yyyy-mm-dd)	Expected expiry dates (yyyy-mm-dd)	Link to Original Document	Anode material	Anode	Battery cell	Other components of battery cells				
105803365	WO/2023/147370	(US20230236504)	(US20230236504)	(US20230236504)	24M TECHNOLOGIES	24M Technologies	KUO, SHI, TUNG	2023-01-25	2023-07-27		(US20230236504)	<a href="#">Open</a>			X					
99888484	EP4236167	(EP4236167)	(EP4236167)	(EP4236167)	24M TECHNOLOGIES	24M Technologies	CHEN, JUNZHENG	2021-11-02	2022-05-05		(EP4236167)	<a href="#">Open</a>			X					
86770045	US11742523	(US11742523)	(US11742523)	(US11742523)	24M TECHNOLOGIES	24M Technologies	OTA, NAOKI	2019-05-24	2019-11-28	2023-09-19	(US11742523)	<a href="#">Open</a>		X						
95612424	US11742523	(US11742523)	(US11742523)	(US11742523)	24M TECHNOLOGIES	24M Technologies	AKASHI, MITSUNORI	2021-02-08	2021-08-12	2023-08-29	(US11742523)	<a href="#">Open</a>								
72821055	EP3946999	(EP3946999)	(EP3946999)	(EP3946999)	24M TECHNOLOGIES	24M Technologies	KUROSHIMA, YASUAKI	2015-11-03	2016-05-05	2019-12-03	(EP3946999)	<a href="#">Open</a>		X						
90844514	US11753394	(US11753394)	(US11753394)	(US11753394)	3DBATTERIES	3DBattery	BURSHTEIN, DORON	2020-03-25	2020-10-01		(US11753394)	<a href="#">Open</a>			X					
87241662	EP3618076	(EP3618076)	(EP3618076)	(EP3618076)	3DBATTERIES	3DBattery	SCHREIBER, EREZ	2019-07-03	2020-01-09	2023-01-01	(EP3618076)	<a href="#">Open</a>		X						
80463026	WO/2023/05622	(WO202305622)	(WO202305622)	(WO202305622)	3DBATTERIES	3DBattery	SCHREIBER, EREZ	2018-01-02	2018-07-05	2022-10-11	(WO202305622)	<a href="#">Open</a>				X				
105057111	JP2023073568	(JP2023073568)	(JP2023073568)	(JP2023073568)	3DOM ALLIANCE	Dimensionally Ordered Macro Array	TAIWAKUSAWA, RYOMA	2021-11-16	2023-05-26		(JP2023073568)	<a href="#">Open</a>								
92035718	JP2020205142	(JP2020205142)	(JP2020205142)	(JP2020205142)	3DOM ALLIANCE	Dimensionally Ordered Macro Array	KOBAYASHI, MASAOKA	2019-06-14	2020-12-24		(JP2020205142)	<a href="#">Open</a>			X					
83053224	US2022080847	(US2022080847)	(US2022080847)	(US2022080847)	3M INNOVATIVE PROPERTIES	3M	CHEN, YU, CHEN, YU	2018-06-25	2019-01-17	2022-03-22	(US2022080847)	<a href="#">Open</a>			X					
79511866	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	3M INNOVATIVE PROPERTIES	3M	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
62148671	JP2023073716	(JP2023073716)	(JP2023073716)	(JP2023073716)	3M INNOVATIVE PROPERTIES	3M	CHEN, YU, CHEN, YU	2018-02-05	2018-09-04		(JP2023073716)	<a href="#">Open</a>			X					
62030982	EP3946999	(EP3946999)	(EP3946999)	(EP3946999)	3M INNOVATIVE PROPERTIES	3M	CHRISTENSEN, LEIF	2007-02-27	2008-08-28		(EP3946999)	<a href="#">Open</a>			X					
6656844	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	3M INNOVATIVE PROPERTIES	3M	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
44060073	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	3M INNOVATIVE PROPERTIES	3M	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
1380347	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	3M INNOVATIVE PROPERTIES	3M	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
1399546	KR10-2586093	(KR102586093)	(KR102586093)	(KR102586093)	3M	3M	CHEN, YU, CHEN, YU	2018-02-05	2018-09-04		(KR102586093)	<a href="#">Open</a>				X				
76563535	EP4236167	(EP4236167)	(EP4236167)	(EP4236167)	AMPEREX TECHNOLOGY	ATL (Amperex Technology)	CHEN, YU, CHEN, YU	2021-11-02	2022-05-05		(EP4236167)	<a href="#">Open</a>				X				
6947028	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	AMPEREX TECHNOLOGY	ATL (Amperex Technology)	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
957034	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	AMPEREX TECHNOLOGY	ATL (Amperex Technology)	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
43778617	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	GELION TECHNOLOGIES	Gelion Technologies	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
667916	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	GELION TECHNOLOGIES	Gelion Technologies	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
76587031	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	GELION TECHNOLOGIES	Gelion Technologies	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
73230602	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	GELION TECHNOLOGIES	Gelion Technologies	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
7935787	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	GELION TECHNOLOGIES	Gelion Technologies	CHEN, YU, CHEN, YU	2017-10-10	2018-04-26		(WO2023075934)	<a href="#">Open</a>				X				
71548097	US2023056521	(US2023056521)	(US2023056521)	(US2023056521)	JOHNSON MATTHEY	Johnson Matthey	CHEN, YU, CHEN, YU	2015-05-27	2015-12-03		(US2023056521)	<a href="#">Open</a>				X				
889514	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	JOHNSON MATTHEY	Johnson Matthey	CHEN, YU, CHEN, YU	2015-05-27	2015-12-03		(WO2023075934)	<a href="#">Open</a>				X				
68719916	US2023056521	(US2023056521)	(US2023056521)	(US2023056521)	JOHNSON MATTHEY	Johnson Matthey	CHEN, YU, CHEN, YU	2015-05-27	2015-12-03		(US2023056521)	<a href="#">Open</a>				X				
6866397	US2023056521	(US2023056521)	(US2023056521)	(US2023056521)	JOHNSON MATTHEY	Johnson Matthey	CHEN, YU, CHEN, YU	2015-05-27	2015-12-03		(US2023056521)	<a href="#">Open</a>				X				
93064466	JP2023056521	(JP2023056521)	(JP2023056521)	(JP2023056521)	JOHNSON MATTHEY	Johnson Matthey	CHEN, YU, CHEN, YU	2015-05-27	2015-12-03		(JP2023056521)	<a href="#">Open</a>				X				
98625628	WO/2023/075934	(WO2023075934)	(WO2023075934)	(WO2023075934)	JOHNSON MATTHEY	Johnson Matthey	CHEN, YU, CHEN, YU	2015-05-27	2015-12-03		(WO2023075934)	<a href="#">Open</a>				X				
106385259	CN116706040	(CN116706040)	(CN116706040)	(CN116706040)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN116706040)	<a href="#">Open</a>				X				
106224949	CN116632354	(CN116632354)	(CN116632354)	(CN116632354)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN116632354)	<a href="#">Open</a>			X					
106183609	CN116606613	(CN116606613)	(CN116606613)	(CN116606613)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN116606613)	<a href="#">Open</a>		X		X				
105809776	CN116463084	(CN116463084)	(CN116463084)	(CN116463084)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN116463084)	<a href="#">Open</a>		X		X				
105624898	CN116387490	(CN116387490)	(CN116387490)	(CN116387490)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN116387490)	<a href="#">Open</a>		X						
104756289	CN116053567	(CN116053567)	(CN116053567)	(CN116053567)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN116053567)	<a href="#">Open</a>			X					
102399946	CN115275167	(CN115275167)	(CN115275167)	(CN115275167)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN115275167)	<a href="#">Open</a>			X					
101814162	CN115064666	(CN115064666)	(CN115064666)	(CN115064666)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN115064666)	<a href="#">Open</a>			X					
101592999	CN114850881	(CN114850881)	(CN114850881)	(CN114850881)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN114850881)	<a href="#">Open</a>			X					
101212536	CN114850881	(CN114850881)	(CN114850881)	(CN114850881)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN114850881)	<a href="#">Open</a>			X					
100481667	CN114628648	(CN114628648)	(CN114628648)	(CN114628648)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN114628648)	<a href="#">Open</a>		X		X				
100470985	CN114628648	(CN114628648)	(CN114628648)	(CN114628648)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN114628648)	<a href="#">Open</a>		X		X				
100363438	CN114552008	(CN114552008)	(CN114552008)	(CN114552008)	1A23 SYSTEMS	1A23 Systems (Wanxiang group)	CHEN, YU, CHEN, YU	2023-07-26	2023-09-05		(CN114552008)	<a href="#">Open</a>			X					

## MAIN TRENDS AND IP PLAYERS

General trends, main patent assignees, new entrants, typology and originating countries

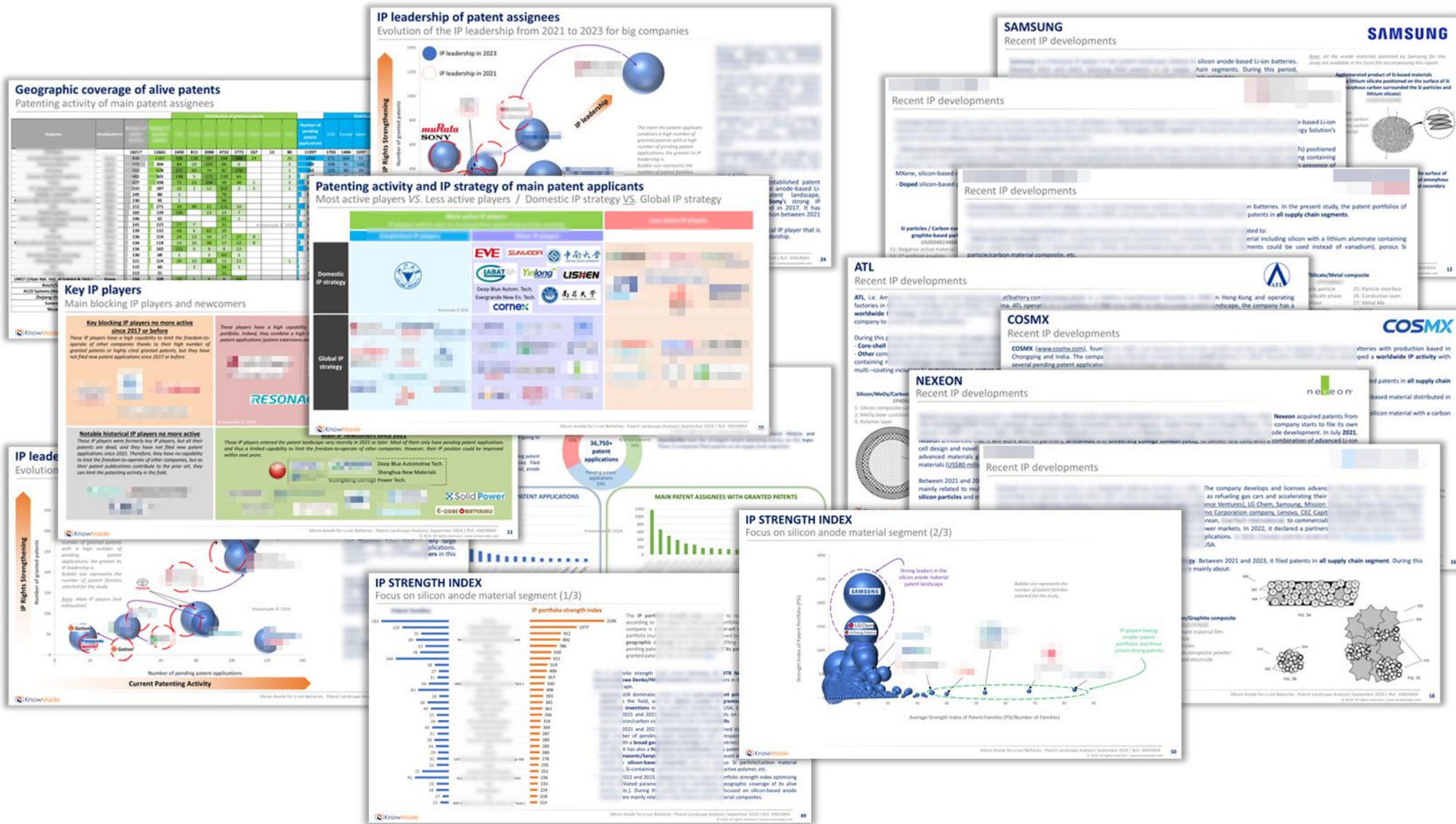
**SAMPLE**



# KEY IP PLAYERS

IP strategies, Geographical coverage of patents, recent patenting activities

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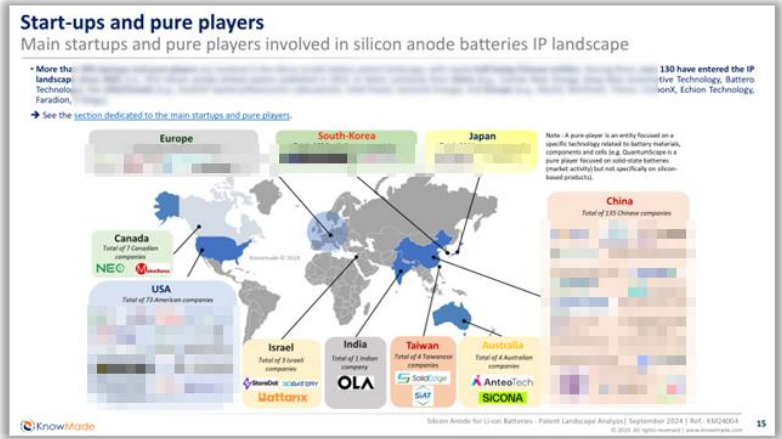


# STARTUPS, PURE PLAYERS AND IP NEWCOMERS

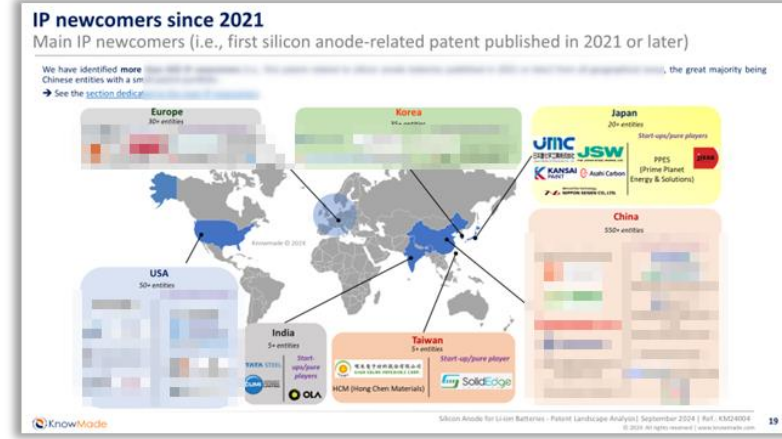
IP portfolios held by startups, pure players and IP newcomers from various countries

SAMPLE

## 290+ start-ups and pure players



## 650+ IP newcomers since 2021



### Start-ups and pure players involved in silicon anode battery IP landscape

Main European start-ups and pure players (1/2)

Patent assignee	Headquarters	Company Type
NEO	Canada	Start-up/pure player
QuantumScape	USA	Start-up/pure player
Shoukai	Israel	Start-up/pure player
OLA	India	Start-up/pure player
QuantumScape	Taiwan	Start-up/pure player
SolidEdge	Taiwan	Start-up/pure player
SICONA	Australia	Start-up/pure player

### Start-ups and pure players involved in silicon anode battery IP landscape

Main South-Korean start-ups and pure players (1/2)

Patent assignee	Headquarters	Company Type
QuantumScape	South-Korea	Start-up/pure player
Shoukai	South-Korea	Start-up/pure player

### Start-ups and pure players involved in silicon anode battery IP landscape

Main American/Canadian start-ups and pure players (1/6)

Patent assignee	Headquarters	Company Type
NEO	Canada	Start-up/pure player
QuantumScape	USA	Start-up/pure player
Shoukai	Israel	Start-up/pure player
OLA	India	Start-up/pure player
QuantumScape	Taiwan	Start-up/pure player
SolidEdge	Taiwan	Start-up/pure player
SICONA	Australia	Start-up/pure player

### Start-ups and pure players involved in silicon anode battery IP landscape

Main Chinese start-ups and pure players (1/3)

Patent assignee	Headquarters	Company Type
QuantumScape	China	Start-up/pure player
Shoukai	China	Start-up/pure player
OLA	China	Start-up/pure player
QuantumScape	China	Start-up/pure player
Shoukai	China	Start-up/pure player
OLA	China	Start-up/pure player
QuantumScape	China	Start-up/pure player
Shoukai	China	Start-up/pure player
OLA	China	Start-up/pure player

### IP newcomers since 2021

Main IP newcomers (i.e., first silicon anode-related patent published in 2021 or later)

Patent assignee	Headquarters	Company Type
QuantumScape	USA	Start-up/pure player
Shoukai	Israel	Start-up/pure player
OLA	India	Start-up/pure player
QuantumScape	Taiwan	Start-up/pure player
SolidEdge	Taiwan	Start-up/pure player
SICONA	Australia	Start-up/pure player

### IP newcomers since 2021

Main Chinese IP newcomers (1/3)

Patent assignee	Headquarters	Company Type
QuantumScape	China	Start-up/pure player
Shoukai	China	Start-up/pure player
OLA	China	Start-up/pure player

### IP newcomers since 2021

Main South-Korean IP newcomers (2/3)

Patent assignee	Headquarters	Company Type
QuantumScape	South-Korea	Start-up/pure player
Shoukai	South-Korea	Start-up/pure player

### IP newcomers since 2021

Main American IP newcomers (1/4)

Patent assignee	Headquarters	Company Type
NEO	Canada	Start-up/pure player
QuantumScape	USA	Start-up/pure player
Shoukai	Israel	Start-up/pure player
OLA	India	Start-up/pure player
QuantumScape	Taiwan	Start-up/pure player
SolidEdge	Taiwan	Start-up/pure player
SICONA	Australia	Start-up/pure player

### IP newcomers since 2021

Main European IP newcomers (1/3)

Patent assignee	Headquarters	Company Type
QuantumScape	Europe	Start-up/pure player
Shoukai	Europe	Start-up/pure player
OLA	Europe	Start-up/pure player



# ORDER FORM

## Silicon Anode for Li-ion Batteries

Patent Landscape Analysis – September 2024

Ref.:KM24004



### SHIP TO

Name (Mr/Ms/Dr/Pr):

Job Title:

Company:

Address:

City:

State:

Postcode/Zip:

Country:

VAT ID Number for EU members:

Tel:

Email:

Date:

### PAYMENT METHODS

#### Check

To pay your invoice using a check, please mail your check to the following address:

KnowMade S.A.R.L.  
2405 route des Dolines, Le Drakkar,  
06560 Valbonne Sophia Antipolis  
FRANCE

#### Money Transfer

To pay your invoice using a bank money wire transfer please contact your bank to complete this process. Here is the information that you will need to submit the payment:

Payee: KnowMade S.A.R.L.  
Bank: Banque Populaire Méditerranée, CAP 3000 Quartier du lac, 06700 St Laurent du Var, France  
IBAN: FR76 1460 7003 6360 6214 5695 139  
BIC/SWIFT: CCBPFRPPMAR

#### Paypal

In order to pay your invoice via PAYPAL, you must first register at [www.paypal.com](http://www.paypal.com). Then you can send money to the KnowMade S.A.R.L. by entering our E-mail address [contact@knowmade.fr](mailto:contact@knowmade.fr) as the recipient and entering the invoice amount.

### RETURN ORDER BY

**E-mail:** [contact@knowmade.fr](mailto:contact@knowmade.fr)

**Mail:** KnowMade S.A.R.L., 2405 route des Dolines, Le Drakkar, 06560 Valbonne Sophia Antipolis, FRANCE

### PRODUCT ORDER

☐ 4,990 EUR – Multi user license\*

For price in dollars, please use the day's exchange rate.

For French customer, add 20% for VAT.

All reports are delivered electronically in pdf format at payment reception.

*\*The report can be shared with the employees of the company purchasing the report. Subsidiaries and joint-ventures are excluded. Please be aware that the report is watermarked on each page, with the name of the recipient and the organization (the name mentioned in the PO). This watermark also reaffirms that report sharing is not allowed.*

*I hereby accept Knowmade's Terms and Conditions of Sale*  
**Signature:**

# Terms and Conditions of Sales

## DEFINITIONS

“Acceptance”: Action by which the Buyer accepts the terms and conditions of sale in their entirety. It is done by signing the purchase order which mentions “I hereby accept Knowmade’s Terms and Conditions of Sale”.

“Buyer”: Any business user (i.e. any person acting in the course of its business activities, for its business needs) entering into the following general conditions to the exclusion of consumers acting in their personal interests.

“Contracting Parties” or “Parties”: The Seller on the one hand and the Buyer on the other hand.

“Intellectual Property Rights” (“IPR”) means any rights held by the Seller in its Products, including any patents, trademarks, registered models, designs, copyrights, inventions, commercial secrets and know-how, technical information, company or trading names and any other intellectual property rights or similar in any part of the world, notwithstanding the fact that they have been registered or not and including any pending registration of one of the above mentioned rights.

“License”: For the reports and databases, 2 different licenses are proposed. The buyer has to choose one license:

1. One user license: a single individual at the company can use the report.

2. Corporate license: the report can be used by unlimited users within the company. Subsidiaries and joint ventures are not included.

“Products”: Reports are established in PowerPoint and delivered on a PDF format and the database may include Excel files.

“Seller”: Based in Sophia Antipolis (France headquarters), Knowmade is a technology intelligence company specialized in the research and analysis of scientific and technical information. We provide patent landscapes and scientific state of the art with high added value to businesses and research laboratories. Our intelligence digests play a key role to define your innovation and development strategy.

## 1. SCOPE

1.1 The Contracting Parties undertake to observe the following general conditions when agreed by the Buyer and the Seller. Any additional, different, or conflicting terms and conditions in any other documents issued by the buyer at any time are hereby objected to by the seller, shall be wholly inapplicable to any sale made hereunder and shall not be binding in any way on the seller.

1.2 This agreement becomes valid and enforceable between the Contracting Parties after clear and non-equivocal consent by any duly authorized person representing the Buyer. For these purposes, the Buyer accepts these conditions of sales when signing the purchase order which mentions “I hereby accept Knowmade’s Terms and Conditions of Sale”. This results in acceptance by the Buyer.

1.3 Orders are deemed to be accepted only upon written acceptance and confirmation by the Seller, within [7 days] from the date of order, to be sent either by email or to the Buyer’s address. In the absence of any confirmation in writing, orders shall be deemed to have been accepted.

## 2. MAILING OF THE PRODUCTS

2.1 Products are sent by email to the Buyer:

- within [1] month from the order for Products already released; or

- within a reasonable time for Products ordered prior to their effective release. In this case, the Seller shall use its best endeavours to inform the Buyer of an indicative release date and the evolution of the work in progress.

2.2 Some weeks prior to the release date the Seller can propose a pre-release discount to the Buyer.

The Seller shall by no means be responsible for any delay in respect of article 2.2 above, and including in cases where a new event or access to new contradictory information would require for the analyst extra time to compute or compare the data in order to enable the Seller to deliver a high quality Products.

2.3 The mailing of the Product will occur only upon payment by the Buyer, in accordance with the conditions contained in article 3.

2.4 The mailing is operated through electronic means either by email via the sales department. If the Product’s electronic delivery format is defective, the Seller undertakes to replace it at no charge to the Buyer provided that it is informed of the defective formatting within 90 days from the date of the original download or receipt of the Product.

2.5 The person receiving the Products on behalf of the Buyer shall immediately verify the quality of the Products and their conformity to the order. Any claim for apparent defects or for non-conformity shall be sent in writing to the Seller within 8 days of receipt of the Products. For this purpose, the Buyer agrees to

produce sufficient evidence of such defects.

2.6 No return of Products shall be accepted without prior information to the Seller, even in case of delayed delivery. Any Product returned to the Seller without providing prior information to the Seller as required under article 2.5 shall remain at the Buyer’s risk.

## 3. PRICE, INVOICING AND PAYMENT

3.1 Prices are given in the orders corresponding to each Product sold on a unit basis or corresponding to annual subscriptions. They are expressed to be inclusive of all taxes. The prices may be reevaluated from time to time. The effective price is deemed to be the one applicable at the time of the order.

3.2 Payments due by the Buyer shall be sent by cheque payable to Knowmade, PayPal or by electronic transfer to the following account:

Banque Populaire Méditerranée, CAP 3000 Quartier du lac, 06700 St Laurent du Var, France

BIC or SWIFT code: CCBPFRPPMAR

IBAN: : FR76 1460 7003 6360 6214 5695 139

To ensure the payments, the Seller reserves the right to request down payments from the Buyer. In this case, the need of down payments will be mentioned on the order.

3.3 Payment is due by the Buyer to the Seller within 30 days from invoice date, except in the case of a particular written agreement. If the Buyer fails to pay within this time and fails to contact the Seller, the latter shall be entitled to invoice interest in arrears based on the annual rate Refi of the «BCE» + 7 points, in accordance with article L. 441-6 of the French Commercial Code. Our publications (report, database, tool...) are delivered only after reception of the payment.

3.4 In the event of termination of the contract, or of misconduct, during the contract, the Seller will have the right to invoice at the stage in progress, and to take legal action for damages.

## 4. LIABILITIES

4.1 The Buyer or any other individual or legal person acting on its behalf, being a business user buying the Products for its business activities, shall be solely responsible for choosing the Products and for the use and interpretations he makes of the documents it purchases, of the results he obtains, and of the advice and acts it deduces thereof.

4.2 The Seller shall only be liable for (i) direct and (ii) foreseeable pecuniary loss, caused by the Products or arising from a material breach of this agreement

4.3 In no event shall the Seller be liable for:

a) damages of any kind, including without limitation, incidental or consequential damages (including, but not limited to, damages for loss of profits, business interruption and loss of programs or information) arising out of the use of or inability to use the Seller’s website or the Products, or any information provided on the website, or in the Products;

b) any claim attributable to errors, omissions or other inaccuracies in the Product or interpretations thereof.

4.4 All the information contained in the Products has been obtained from sources believed to be reliable. The Seller does not warrant the accuracy, completeness adequacy or reliability of such information, which cannot be guaranteed to be free from errors.

4.5 All the Products that the Seller sells may, upon prior notice to the Buyer from time to time be modified by or substituted with similar Products meeting the needs of the Buyer. This modification shall not lead to the liability of the Seller, provided that the Seller ensures the substituted Product is similar to the Product initially ordered.

4.6 In the case where, after inspection, it is acknowledged that the Products contain defects, the Seller undertakes to replace the defective products as far as the supplies allow and without indemnities or compensation of any kind for labor costs, delays, loss caused or any other reason. The replacement is guaranteed for a maximum of two months starting from the delivery date. Any replacement is excluded for any event as set out in article 5 below.

4.7 The deadlines that the Seller is asked to state for the mailing of the Products are given for information only and are not guaranteed. If such deadlines are not met, it shall not lead to any damages or cancellation of the orders, except for non-acceptable delays exceeding [4] months from the stated deadline, without information from the Seller. In such case only, the Buyer shall be entitled to ask for a reimbursement of its first down payment to the exclusion of any further damages.

4.8 The Seller does not make any warranties, express or implied, including, without limitation, those of saleability and fitness for a particular purpose, with respect to the Products. Although the Seller shall take

reasonable steps to screen Products for infection of viruses, worms, Trojan horses or other codes containing contaminating or destructive properties before making the Products available, the Seller cannot guarantee that any Product will be free from infection.

## 5. FORCE MAJEURE

The Seller shall not be liable for any delay in performance directly or indirectly caused by or resulting from acts of nature, fire, flood, accident, riot, war, government intervention, embargoes, strikes, labor difficulties, equipment failure, late deliveries by suppliers or other difficulties which are beyond the control, and not the fault of the Seller.

## 6. PROTECTION OF THE SELLER’S IPR

6.1 All the IPR attached to the Products are and remain the property of the Seller and are protected under French and international copyright law and conventions.

6.2 The Buyer agreed not to disclose, copy, reproduce, redistribute, resell or publish the Product, or any part of it to any other party other than employees of its company. The Buyer shall have the right to use the Products solely for its own internal information purposes. In particular, the Buyer shall therefore not use the Product for purposes such as:

- Information storage and retrieval systems;

- Recordings and re-transmittals over any network (including any local area network);

- use in any timesharing, service bureau, bulletin board or similar arrangement or public display;

- Posting any Product to any other online service (including bulletin boards or the Internet);

- Licensing, leasing, selling, offering for sale or assigning the Product.

6.3 The Buyer shall be solely responsible towards the Seller of all infringements of this obligation, whether this infringement comes from its employees or any person to whom the Buyer has sent the Products and shall personally take care of any related proceedings, and the Buyer shall bear related financial consequences in their entirety.

6.4 The Buyer shall define within its company point of contact for the needs of the contract. This person will be the recipient of each new report in PDF format. This person shall also be responsible for respect of the copyrights and will guaranty that the Products are not disseminated out of the company.

## 7. TERMINATION

7.1 If the Buyer cancels the order in whole or in part or postpones the date of mailing, the Buyer shall indemnify the Seller for the entire costs that have been incurred as at the date of notification by the Buyer of such delay or cancellation. This may also apply for any other direct or indirect consequential loss that may be borne by the Seller, following this decision.

7.2 In the event of breach by one Party under these conditions or the order, the non-breaching Party may send a notification to the other by recorded delivery letter upon which, after a period of thirty (30) days without solving the problem, the non-breaching Party shall be entitled to terminate all the pending orders, without being liable for any compensation.

## 8. MISCELLANEOUS

All the provisions of these Terms and Conditions are for the benefit of the Seller itself, but also for its licensors, employees and agents. Each of them is entitled to assert and enforce those provisions against the Buyer.

Any notices under these Terms and Conditions shall be given in writing. They shall be effective upon receipt by the other Party.

The Seller may, from time to time, update these Terms and Conditions and the Buyer, is deemed to have accepted the latest version of these terms and conditions, provided they have been communicated to him in due time.

## 9. GOVERNING LAW AND JURISDICTION

9.1 Any dispute arising out or linked to these Terms and Conditions or to any contract (orders) entered into in application of these Terms and Conditions shall be settled by the French Commercial Courts of Grasse, which shall have exclusive jurisdiction upon such issues.

9.2 French law shall govern the relation between the Buyer and the Seller, in accordance with these Terms and Conditions.

# KNOWMADE

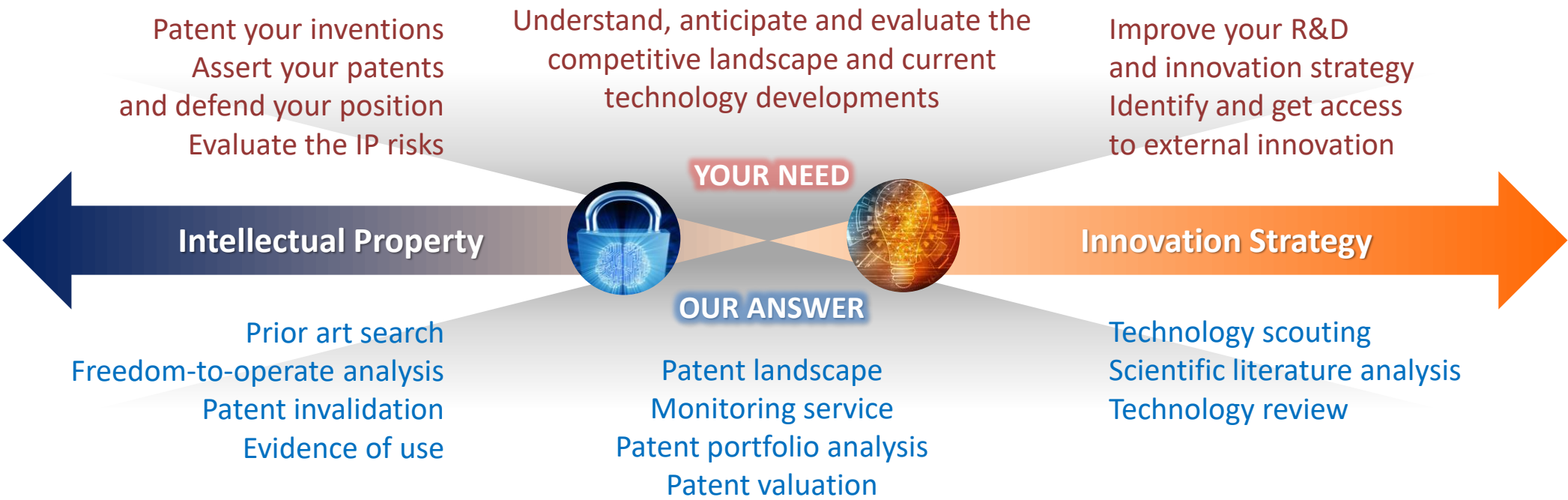
## Patent and Technology Intelligence



# KNOWMADE PURPOSE

Turning **patent information** and **scientific literature** into actionable insights, providing high value-added reports for **decision-makers** working in **R&D, Intellectual Property, Innovation Strategy, and Marketing**

Competitive landscape | Technology trends | Opportunities / Risks | R&D and IP strategy



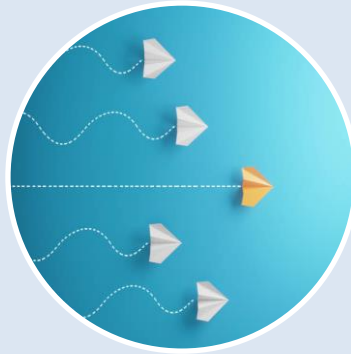
# WHAT INFORMATION CAN YOU GET ?



## INTELLECTUAL PROPERTY

*For IP teams,  
patent attorneys*

- Risks and opportunities (FTO, litigations, licensing)
- Key patents
- Link between patents and products



## TECHNOLOGY

*For R&D teams,  
engineers, scientists*

- R&D activities
- Technological roadmap
- Position on the supply chain



## MARKET

*For executives,  
business developers*

- Identify competitors
- Compare IP with market position
- Evaluate the level of investment
- Future products & target markets

# KNOWMADE ADDED VALUE

Search

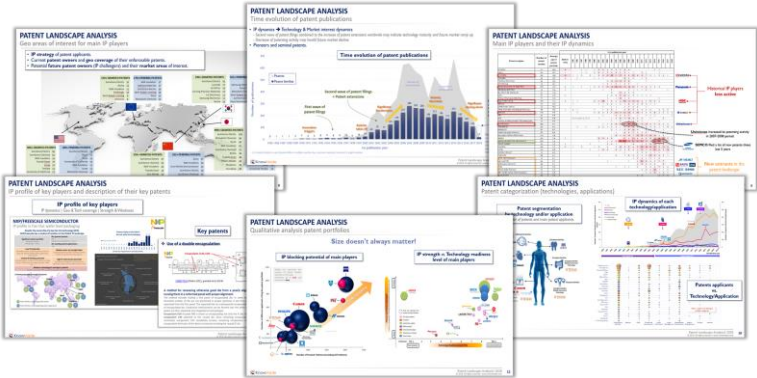
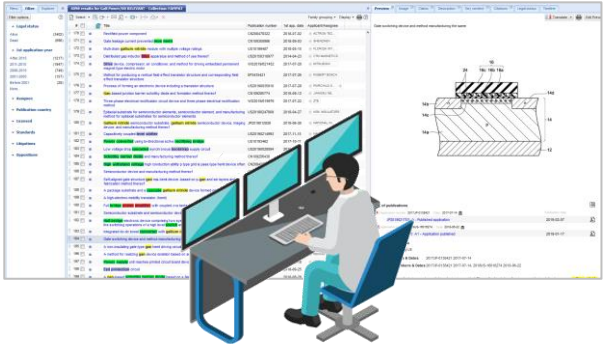
- ✓ **Strong technical expertise of our analysts with PhD degree**
- Best-in-class databases (e.g., Orbit Intelligence by Questel)
- Comprehensive search queries and keywords
- Manual selection of relevant and related patents/sci papers
- Manual segmentation by technology & application

Analytics

- ✓ **Statistical analysis** (main trends)
- ✓ **Qualitative analysis** (key players, key patents, key scientific findings)
- ✓ **Innovative methodologies** to deliver relevant analysis (metrics)
- ✓ **Business-oriented data** representation and graphics

Analysis

- ✓ **Technical expertise**
  - Highly specialized analysts (PhD)
  - Benefit from knowledge capitalization
- ✓ **In-depth IP analysis compared with market**
- ✓ **Capability to work with market research firms and IP law firms**





# KNOWMADE OFFER

## CUSTOM SERVICES

(Tailor-made analysis)

*To meet your needs and budget/lead time constraints*

- Specific and dedicated report.
- Prior-art search, freedom-to-operate, patent landscape, patent valuation, technology scouting, monitoring service, etc.

Format

- PDF file with analyses.
- Excel file with data.
- Access to the analyst.

## REPORTS

(multi-client product)

*To understand the competitive landscape and explore the emerging ecosystems and new technologies*

- Stand alone report
- Patent landscape.
- Overview on IP dynamics, trends and players.
- Competitor, technology and strategy analysis.
- Benchmark of patent portfolios.
- Key IP players & key patents.

Format

- PDF file with analyses.
- Excel file with patent data.

## MONITORS

(multi-client product)

*To track the latest R&D developments and IP activities, and to be sensitive to weak signals*

- Annual subscription
- Patent monitoring service.
- Quarterly updated patent data and technology trends.
- Current R&D and IP activities.
- Early detect weak signals, opportunities and risks.
- Open discussion with analyst.

Format

- PDF file with analyses.
- Excel file with patent data.
- Direct access to the analyst.

## INSIGHTS

(free article & webinar)

*To get unique information about industry and technology*

- Analyst point of view about industry news (product release, M&A, start-up, fund-raising, etc.) from a patent perspective.

Format

- Knowmade website

# MAIN FIELDS OF EXPERTISE

## SEMICONDUCTORS

- Materials & Substrates
- Power electronics
- RF & Wireless datacom
- MEMS, Sensing & Imaging
- Photonics, Lighting & Display
- Memory
- Packaging

## ENERGY

- Batteries
- Fuel-cells
- Solar PV
- Power management

## HEALTHCARE

- New therapeutic tools
- Medical diagnostics
- Medical devices and imaging
- Drug discovery and delivery

## AGRI-FOOD

- Food processing & formulation
- Vegan food
- Next-gen packaging
- Microbiology



### Energy storage devices

- Batteries
- Fuel cells
- Supercapacitors
- Primary & Secondary devices
- Thin film & Microdevices
- Cylindrical, prismatic, pouch



### Whole supply chain

- Active Materials
- Battery electrodes, electrolytes, separators
- Fuel cell electrodes, membranes, catalysts, gas diffusion layer, bipolar plates, electrolytes
- Battery cells / Fuel cells
- Battery packs / Fuel cell stacks
- Manufacturing & Recycling



### Key technologies

#### Li-ion batteries

- LTO, Li-metal, silicon anodes
- NMC, NCA, LNMO, LFP cathodes
- Solid electrolytes

#### Post Li-ion batteries

- Na-ion
- Li-S
- Mg-ion
- Al-ion
- Ca-ion
- Zn-ion
- F-ion
- Li-air

#### Fuel cells

- PEMFC
- SOFC
- MCFC
- PAFC
- AFC



## Energy

from materials and cells to modules and systems

### All applications

- Automotive (BEV, FCEV)
- Consumer electronics
- Stationary energy storage



### Power Management & Control

- Power electronics
- BMS
- Thermal management







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