Opportunity and Threats for SBR Binders in EV Batteries

Case Study



## **Opportunities and Threats for SBR Binders in EV Batteries**

Client	Global material solutions provider and manufacturer of plastics, latex binders, and synthetic rubber
Industry	Plastics, binders, and synthetic rubbers
Products	Styrene acrylic latex binders, styrene butadiene latex binders, styrene butadiene rubber, nickel butadiene rubber, etc.

## Engagement Scope

Battery Anode Material Technology Assessment

- Description of major battery anode material technology in EV batteries
- Assessment of winning properties of anode materials and gaps/problems being solved, and analysis of pros & cons of major battery anode materials
- Assessment of market readiness of anode technologies for EV batteries

#### Context

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• The client wanted to evaluate opportunities and risks for binders with the evolution of battery anode technologies and understand key influencers as well as decision makers in research, development, and commercialization of new anode battery technologies.

### **Key Business Questions**

- Which are the dominant battery anode material technologies in EV batteries? Which are the future battery anode material technologies in EV batteries?
- What is the typical decision making process in adopting new battery anode materials in EV batteries?
- How is the battery anode binder chemistry/formulation expected to evolve with battery anode material technology evolution and why?

## Analysis of Decision Making Process

- Assessment of key influencers in the value chain in terms of adopting new battery anode materials
- Assessment of factors taken into account in decision making
- Analysis of how battery anode binder chemistry/formulation is expected to evolve with battery anode material technology evolution

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### **Key Findings and Conclusions**

- Understanding market readiness of future battery anode material technology, along with the most probable launch time
- Assessment of opportunities and risks for incumbent battery anode binder manufacturers
- Identification of potential collaboration partners

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## **Opportunities and Threats for SBR Binders in EV Batteries**

### **Research Methodology**

#### Secondary/Desk Research

- Conducted exhaustive secondary research by referring to Orbit Intelligence, USPTO. ScienceDirect, SpringerLink, and Wiley Online Library as well as research articles published on new anode materials and new anode binder materials
- . Scanned paid & public databases such as Factiva, Bloomberg, ICIS, Chemical Weekly, company annual reports, presentations, company press releases, etc.
- Referred to analyst reports, consortium reports, trade association reports, etc. .

#### **Primary Research**

23+ interviews with senior executives of major battery pack manufacturing companies, . cell manufacturing companies, cell component manufacturing companies, etc.

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#### Sample Analysis

100 % CAN

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		vents for LI ion batteries:							
	1991	1997	2010	2018					
	•	E.	<u></u>	100					
	Coke	Graphite	Silicon	Lithium					
	First Li ion battery commercialized by Sony. Ubas coke as anode material	Major development in anode observed as manufacturers started using graphile inclead of coleo as anode material materials:	<ul> <li>Silicon added to graphile to increase energy density of anode material.</li> </ul>	Since 2010 a lot of research is on in the anode matorials.     New commercialized anode matorials are lithium tranate and pure lithium. With research being carried on pure silicon					
	1991	1997	2010	2018					
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Analysis of Decision Making Process

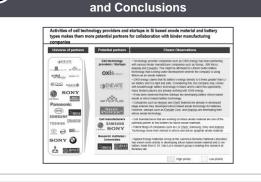
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Raw material supplier							•
Cell component manufacturer							
Cell manufacturer	•	۲		•			
Battery pack manufacturer			٠				
OEMs							
manufacturer Battery pack manufacturer	t in market. Suc hat in an attemp ompany. For exi	h examples push t to influence the I imple, Dyson bou	es the cell in battery com ght Sakt3 I	nanufacturers to s ponent material, 0 or \$90M to help c	learch for r DEM's spe- ommercial	ew anode mate offically from aut ze solid-state be	riais. omoti ittery
batteries for mobile phore - It has been observed if	105.						

### **Benefits to Client**

- . Understanding industry preference and application horizon of new anode material technologies for EV batteries
- Understanding activities of cell technology providers and start-ups •
- Benchmarking current & future anode materials for EV batteries

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- Assessing opportunities and threats for incumbent battery anode binder manufacturers
- Understanding potential partners to collaborate



**Key Findings** 

## Thank you

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# **FutureBridge**