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Beyond Materials – first choice for the *material industry*

Beyond Materials Corp. (BM), a joint venture between FEV Consulting GmbH and Mitsubishi Corporation (MC), was founded in Tokyo, Japan in October 2022. The company provides specialized strategy and engineering consulting services to material suppliers and its respective ecosystem. After one year of business, SPECTRUM sat down with the two managing directors Dr. Tetsushi Abe and Johannes Houben.



Dr. Tetsushi Abe
Managing director
Beyond Materials Corp.

Johannes Houben
Managing director
Beyond Materials Corp.



Why are you so interested in materials?

Abe: We believe that the role of the materials industry is often underestimated. The demands on future product designs and their underlying materials are becoming increasingly sophisticated and complex. Driven by megatrends such as circular economy, digitalization, electrification, and connected and automated vehicles, innovative and functional materials play a crucial role in modern products. This goes beyond achieving simple design, cost, or weight targets.

Can you give some specific examples?

Houben: Sure. Let us give you three key examples:

Multifunctional materials & requirements

Electrified components require high thermal conductivity and electromagnetic shielding effectiveness. On the other hand, lightweighting requires higher performance in terms of strength, elasticity, or stiffness of materials; while sustainability requires recyclability and a low CO₂ footprint over the life cycle of the materials.

The physical limits are often set by materials. We help match demanding applications and diverse requirements with suitable materials.

Recycling

With growing attention on defossilizing the world, more and more companies are working to improve the overall flow of materials by focusing on three “Rs”: reducing, reusing and recycling. Each material (metals, polymers, fibers and textiles, etc.) faces different challenges to realize this flow, such as dismantling of end products, sorting of different materials, and the recycling process itself. We help our clients identify appropriate “re”-strategies and can delve into related topics such as recycling processes and how to build a sound business case.

PFAS

PFAS (Per- and Polyfluorinated Alkyl Substances) provide stain-, oil- and water-repellent properties that are very durable, which is why they are known as “forever chemicals”. When released, PFAS can harm our environment and our health. Some automotive examples include gaskets, binder material for cathodes in lithium-ion battery cells, and fuel cell components. We help our customers identify critical PFAS components

and mitigation strategies in light of a potential decision in favor of a proposal to ban the entire PFAS group by 2025; as well as the resulting implementation timeline of no later than approximately 2038.

How would you describe the challenges of material suppliers?

Abe: Obviously, all material suppliers are different, but you can see a pattern, especially with mid-sized and smaller companies. Material suppliers are undoubtedly the experts in their industry and have a deep understanding of how to make stronger, lighter, or multifunctional materials. However, in the overall supply chain of engineered products, material suppliers are naturally located far from the end user. This requires additional efforts from material suppliers, such as following the latest trends in their end users' needs, demonstrating and validating realistic component designs and material processing conditions, and identifying the right contacts and communication channels to increase awareness of their materials. Rather than just reacting to their direct customers, who are typically the parts suppliers, they need to develop a more proactive approach to providing innovative solutions to unmet needs.

What is your vision for Beyond Materials?

Abe: Our vision is to be the strategic and engineering consulting partner of choice for industrial materials suppliers. We want to enable the materials industry to leverage its unique capabilities beyond its typical value chain position in a global and circular economy.

What separates Beyond Materials from other consulting firms?

Houben: We are the bridge between the mobility industry and the materials industry. Through our deep connection with FEV Group, we have a strong background in many target applications. But at the same time, we speak the language of material suppliers through MC's extensive network and experience in the materials industry. Thanks to this position, we are able to contribute to future development activities of end users (i.e. OEMs and Tier-1s) by promoting technical innovations from the materials industry.

Does this mean that you support only material suppliers as your target customers?

Houben: Our primary focus is on material suppliers, yes. However, we also support component and part manufacturers, or OEMs if they have questions about materials themselves. Basically, we deal with all types of materials, from engineering plastics to adhesives, glass and fiber composites, textiles and nonwovens, ceramics, aluminum, steel and other functional materials, such as those used in battery cells.

How do you support your customers?

Abe: Our customer-centric consulting services can be divided into revenue-up and cost-down services. For the former, we help our customers to increase their revenue potential by identifying new markets for the existing product portfolio, as well as new product opportunities based on their individual capabilities (through Market & Technology Intelligence, Strategy Development, Product Development, Marketing Support and more). On the other hand, our cost-down services are aimed at ensuring the long-term profitability of our customers. We support this with services such as Portfolio Management, Organizational Excellence, Strategic Costing and Sourcing.



Can you please give us some examples?

Abe: It can be difficult for material suppliers to identify long-term trends in their target markets, as their day-to-day business is often driven by short-term customer demands. This is where our Market & Technology Intelligence service can provide valuable insights for strategic decision making. We leverage FEV's deep understanding of various application technologies, coupled with MC's broad network of materials companies to develop a continuously updated applications-materials database. The database is a comprehensive collection of automotive industry pain points and potential material-based solutions. This serves as an excellent basis for identifying new product opportunities and is typically followed by a sound go-to-market strategy.

Houben: And actually, we can and frequently do go well beyond that. We support our customers in the successful implementation of new product opportunities by assisting with our product development service. Helping to develop superior material specifications based on current automotive pain points is just the first step. When approaching new customers, we believe it is important to demonstrate that the materials offered will improve the customer's target performance. Whether it is weight reduction, energy efficiency or durability, customers often expect proof. Together with our materials and engineering experts, we help our customers develop and validate hardware demonstrators. This helps material suppliers demonstrate the superiority of their material, while ensuring customer confidence in their brand and product.

So, what is the plan for your second year of Beyond Materials?

Houben: We are just getting started. As a new company, we want to continue to strengthen our service offerings and further tailor them to the needs of our customers. But we also want to expand into non-conventional consulting services by identifying new functions and scalable digital solutions that will help the material suppliers and customers to connect. There is much more to come!

Thank you for your time!

