

F R O S T & S U L L I V A N

**evove**

# **EVOVE RECEIVES THE 2023 NEW PRODUCT INNOVATION AWARD**

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*Identified as best in class in the global membrane  
systems industry*

## Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each Award category before determining the final Award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Evove excels in many of the criteria in the membrane systems space.

AWARD CRITERIA	
<i>New Product Attributes</i>	<i>Customer Impact</i>
Match to Needs	Price/Performance Value
Reliability	Customer Purchase Experience
Quality	Customer Ownership Experience
Positioning	Customer Service Experience
Design	Brand Equity

### ***Evove: Redefining the Global Membrane Systems Industry with Game-changing Technology***

Established in 2015 and headquartered in Daresbury, United Kingdom, Evove (formally G2O Water Technologies) facilitates exceptional filtration and separation technologies and membranes by leveraging

*“Based on the company’s fast-growing technology infrastructure, Frost & Sullivan believes that Evove will drive the membrane systems space into its next development phase, seizing market share and upholding its competitive edge in the coming years.”*

***- Iqra Azam,  
Best Practices Research Analyst***

artificial intelligence (AI), digitalization, advanced materials, engineering, and additive manufacturing. Leveraging seven years of market knowledge and the expertise of its executive team and advisory board, the company serves various industries: lithium, green hydrogen, desalination, food and beverage, and water and wastewater. With a solid emphasis on research and development (R&D), Frost & Sullivan appreciates how Evove’s dynamic technologies have numerous applications, signifying the scope of its capabilities. Accentuating four values (driven, teamwork, pioneering, and serving), it has catalyzed a company

framework where its people stick to their goals, respect and empower each other, continuously innovate, and serve clients diligently.

Through technology integration, Evove condenses the cost and environmental impact of filtration and separation, addressing the most significant problem encountered by membranes, fouling. Fouling culminates in high energy and carbon costs, disruptive operations, recurrent membrane replacement, large system footprints, and an incapacity to work with many liquid streams in high-value applications. In addition, the outdated design and manufacturing of membranes translate into excessive operational expenditure and environmental footprint. Due to the broad use of membranes in water treatment and separation processes, it is crucial to ensure they work efficiently.

Evove maximizes market insights to align its offerings with customer requirements and monitors industry trends for new solution development. This needs-based approach inspired the company to create the Enhance and Separonics® product lines. By integrating advanced materials science and additive manufacturing, Evove's products support microfiltration, ultrafiltration, nanofiltration, and reverse osmosis membrane processes.<sup>1</sup> Frost & Sullivan acknowledges the company's ability to address customers' unmet needs and innovate products, persistently fortifying its competitive edge.

Enhance products amplify existing membranes with coatings, inserts, and spacers to substantially improve energy, water, and chemical consumption, carbon neutrality, and productivity.

### ***Enhance Coatings, Inserts, and Spacers***

These products harmonize pore sizes, ameliorating selectivity and preventing fouling. Coatings comprising graphene oxide applied to the surface of the membrane enrich performance. Moreover, the design and thickness of the coating are customizable, offering many performance gains: decrease in scaling, higher flux, minimized energy consumption, magnified molecular weight cut-off, and safety against harsh cleaning agents. The coatings are applicable to polymer, ceramic, and metal membranes.<sup>2</sup>

The inserts multiply flux and get rid of fouling. Evove's three-dimensional (3D) printed inserts for tubular and hollow fiber membranes boost fluid dynamics, elevating performance. The tailored product design accommodates specific applications and provides benefits, such as up to five times increase in flux, superior rejection and product yield, and a self-cleaning function that condenses fouling/scaling. In addition, the product easily incorporates or retrofits by effortless insertion into the membrane.<sup>3</sup>

Enhance 3D printed feed spacers expand packing density and refine flow. They utilize a thin diameter that increases the membrane-specific area in a module. Evove has integrated its cutting-edge technology with multiple features: flow management, prevention of fouling/scaling, and reduction in pressure drop.<sup>4</sup>

Frost & Sullivan recognizes that Evove's innovation-driven capabilities integrate high reliability and quality in its products, harnessing technology to sustain the many advantages of its offerings.

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<sup>1</sup> <https://evove.tech/technology/>

<sup>2</sup> *Evove Company Presentation* (Evove)

<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

**Separonics®: Digital, Precise, and Wasteless**

In 2021, the company introduced several augmentations to traditional membranes, improving flux rates and achieving results that conventional membranes cannot replicate. However, these advancements were

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**- Iqra Azam,  
Best Practices Research Analyst**

not optimum for some applications due to inconsistent architectures of the membranes with flaws in the pore size and distribution, making them reach their operational limits too quickly. This challenge prompted Evove to employ its additive manufacturing proficiency to redesign membranes from the ground up, leading to the hatching of Separonics®. These precision-engineered membranes overcome the shortcomings of conventional membranes. Made from various materials and customized to individual needs, Evove’s outstanding technology enhances productivity. It will amplify existing filtration and separation infrastructure, accomplish inconceivable productivity levels, and perform novel tasks on a small space and energy

footprint, robustly contributing to market growth.<sup>5</sup> Incorporating computational fluid dynamics and AI, Evove materializes membrane architectures that are downright uniform, with added customizable features that help attain individual operational objectives - such as multifold higher flux and better selectivity.

Furthermore, the company’s groundbreaking Separonics® membranes are perfect in pore size and distribution, galvanizing more remarkable performance. The additive manufacturing capability integrates significant technological advantages, making it local, self-sufficient, material efficient, and versatile. As part of its transformational performance, Separonics® uses 80% less energy, increases produce yield by five times, recycles 80% more water, and carries out two times the extraction of resources.<sup>6</sup> To expand and enrich the development and adoption of its pioneering technology, Evove is venturing into R&D collaborations with early adopters, stimulating growth opportunities.

Evove’s corporate culture revolves around using purpose to drive innovation. Its product roadmap, i.e., planning, development, and implementation strategies, encompasses client feedback, ensuring that its offerings align with their dynamic needs. Its Separonics® takes membrane systems one step further than any other competing solution. Frost & Sullivan opines that its new and purpose-built product line solidifies its market position, with superior design, performance, and value as its central pillars.

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<sup>5</sup> <https://evove.tech/our-story/>

<sup>6</sup> Evove Company Presentation (Evove)

### *Securing Clients' Trust through Customer Needs-focused Practices*

Evove's approach goes further than its comprehensive expertise and unmatched capabilities, with customer value as a strategic imperative. Through the years, the company has earned a sterling reputation supporting clients' path toward decarbonization. With its customer-centric corporate philosophy, Evove operates on the central tenet that its success depends on customer satisfaction. This philosophy permeates its daily practices. It works quite closely with the supply chain (membrane supplier, system integrator/operator, and end-user) to deploy outstanding decarbonizing solutions. The additive manufacturing process curtails and decarbonizes the supply chain and strengthens production agility. Additionally, the company licenses its technologies for quick adoption and implements a gain-share model to incentivize productivity.

Evove meets with clients to assess their specific needs and develop tailored solutions with roadmaps for seamless execution. This foundational approach establishes ongoing trust with customers for long-lasting relationships extending throughout the product lifecycle. The company's direct lithium extraction is underpinning green electrification. The sustainable harvesting, refinery, and processing of local lithium result in economic growth. It also lowers the environmental footprint, needing less water, land, and energy. Furthermore, it is 40% to 60% cheaper than conventional methods. Evove magnifies supply resilience and decreases water risk by expediting unconventional water sources' utilization, maintaining a smaller footprint with lesser ultrapure water (UPW) process steps, and two times UPW production boost. This helps the green hydrogen and semiconductors sectors to source more sustainable UPW.

Evove is also stimulating better economics for broader applications by increasing efficiency gains through upgrading membrane performance and system design, enabling smaller-scale desalination to be viable, and harvesting brines alongside lowering the environmental discharge. By decarbonizing desalination, the company prompts higher water security. Evove helps food and beverage clients minimize their carbon footprint while raising yields by substituting high-energy processes with membranes, obtaining more value from raw resources, and discharging and wasting less. The company also helps the water and wastewater sector by supporting economic recycling and reclamation of resources, capturing value from discharge streams, and amplifying local water supply resilience.<sup>7</sup> Evove's unparalleled capability to serve several sectors with multiple benefits testifies to its products' versatility and comprehensiveness.

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<sup>7</sup> Evove Company Presentation (Evove)

### ***Skyrocketing to the Top with New Ventures***

Since its inception, Evove's sterling reputation and customer-centric framework have led to its preferred partner status and added new ventures, partnerships, and projects to its established base. In November 2022, the company joined Cohort 4 of the prestigious global 100+ Accelerator of AB InBev, Coca-Cola, Unilever, and Colgate-Palmolive. "From a total of 1,746 applicants, Evove made it onto the cohort of 46 of the most interesting innovations from around the world that the 100+ Accelerator partnering companies chose to open their supply chains to."<sup>8</sup> As a part of this initiative, the company will support the sustainability goals of major global food and beverage and consumer-good corporations and help them progress local water stewardship globally. Employing its groundbreaking advanced material science and additive manufacturing capabilities integrated with liquid filtration and separation technology, Evove will enable food and beverage organizations to improve membrane systems under real operating conditions.<sup>9</sup>

*"The opportunity to work directly with such respected household names is an honour and an obligation which we gladly embrace. Improving the supply efficiency of the food and beverage sector has widespread implications for humanity. Our technologies are key enablers for reducing water and energy consumption in this sector."*

**- Chris Wyres, Chief Executive Officer, Evove**

In April 2022, Evove joined the Business, Research, and Entrepreneurship in Water cohort of Wisconsin-based The Water Council. This opportunity will bolster the company's efforts to expand operations and business in North America, leveraging new partnerships and business potential and piloting prospects with its cutting-edge technologies.<sup>10</sup> Moreover, in December 2021, Evove signed a joint development agreement with Meta Additive to create an innovative additive manufacturing solution for 3D printing its ceramic Separonics® membranes. Ceramic membranes have unique benefits, particularly in harsh conditions with hot and acidic fluids. However, until now, they have been unstable in operation with expensive manufacturing. This project initiated the production of durable, cost-effective, and carbon footprint-conscious ceramic Separonics® membranes, allowing Evove to eliminate the issues of traditional manufacturing procedures efficiently.

*"The signing of this collaboration agreement with UK-based Meta Additive is an important milestone in the commercialisation of our Separonics product line. With a scalable and cost-effective manufacturing capability, we will deliver ceramic membranes with transformational performance gains and enhanced utility at a significantly lower carbon cost."*

**- Chris Wyres, Chief Executive Officer, Evove**

Based on the company's fast-growing technology infrastructure, Frost & Sullivan believes that Evove will drive the membrane systems space into its next development phase, seizing market share and upholding its competitive edge in the coming years.

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<sup>8</sup> <https://evove.tech/accelerating-membrane-innovation-with-global-consumer-good-corporations/>

<sup>9</sup> Ibid.

<sup>10</sup> <https://evove.tech/connecting-to-north-america-as-evove-is-accepted-on-brew-2-0-2/>

## Conclusion

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To design a new product, a company must recognize the industry's needs and deliver a robust solution catalyzed and embedded with high-quality and unfailing performance. Frost & Sullivan finds that Evoke exemplifies this concept. Its incomparable, innovative, and customizable Enhance and Separonics® product lines testify to its offerings' excellence, value, and reliability. It integrates with advanced technologies, such as artificial intelligence, digitalization, advanced materials, engineering, and additive manufacturing.

The company's ability to serve various markets with bespoke products signifies its solid focus on exceptional research and development supported by the expertise of its executive team. Evoke integrates a customer-centric approach and understands clients' needs by monitoring industry trends and working closely with them, sustaining a strong market reputation.

With its strong overall performance, Evoke earns the 2023 Frost & Sullivan Global New Product Innovation Award in the membrane systems industry.

## What You Need to Know about the New Product Innovation Recognition

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Frost & Sullivan's New Product Innovation Award recognizes the company that offers a new product or solution that uniquely addresses key customer challenges.

### Best Practices Award Analysis

For the New Product Innovation Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

#### *New Product Attributes*

**Match to Needs:** Customer needs directly influence and inspire product design and positioning

**Reliability:** Product consistently meets or exceeds customer performance expectations

**Quality:** Product offers best-in-class quality with a full complement of features and functionality

**Positioning:** Product serves a unique, unmet need that competitors cannot easily replicate

**Design:** Product features an innovative design that enhances both visual appeal and ease of use

#### *Customer Impact*

**Price/Performance Value:** Products or services provide the best value for the price compared to similar market offerings

**Customer Purchase Experience:** Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

**Customer Ownership Experience:** Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

**Customer Service Experience:** Customer service is accessible, fast, stress-free, and high quality

**Brand Equity:** Customers perceive the brand positively and exhibit high brand loyalty



## About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO's growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at <http://www.frost.com>.

## The Growth Pipeline Engine™

Frost & Sullivan's proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fuelled by the Innovation Generator™.

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### Key Impacts:

- **Growth Pipeline:** Continuous Flow of Growth Opportunities
- **Growth Strategies:** Proven Best Practices
- **Innovation Culture:** Optimized Customer Experience
- **ROI & Margin:** Implementation Excellence
- **Transformational Growth:** Industry Leadership



## The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

### Analytical Perspectives:

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**

