

2005

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

Product Differentiation Innovation Award

Frost & Sullivan Award for Product Differentiation Innovation



AWARD DESCRIPTION

The Frost & Sullivan Product Differentiation Innovation Award is presented to the company that has best demonstrated the ability to develop and / or advance products with more innovative capabilities than competition. This Award recognizes the company's successful adoption of new or existing technology that has become a part of its well designed product family. Such innovation is expected to significantly contribute to the industry in terms of product performance and degree / rate of technical change.

RESEARCH METHODOLOGY

Before considering the recipient of this Award, the analyst team tracks competing market participants' product differentiation strategies through ongoing research. This research consists of market participant interviews, end-user surveys, and extensive secondary research. The data compiled through this research is analyzed based upon specific measurement criteria for this Award. Participants are then ranked with respect to the measurement criteria. The Award recipient is ranked number one in the industry.

MEASUREMENT CRITERIA

In addition to the methodology described above, there are specific criteria used in determining the final ranking of industry competitors. The recipient of this Award has excelled based on one or more of the following criteria:

- Degree of differentiation in innovation compared to other market participants
- Positive impact on sales directly related to product differentiation
- Time to market improvement based upon product differentiation strategy
- Benefit to end users due to product differentiation
- Effect of product differentiation on ease of adaptability for new end-user applications
- Effect of product differentiation on market maturation

AWARD RECIPIENT: VARTA MICROBATTERY GMBH

EASY PACK LITHIUM POLYMER POLIFLEX BATTERY PACKS

The 2005 Frost & Sullivan Product Differentiation Innovation Award for the world industrial secondary lithium battery market is presented to Varta Microbattery for its highly improved and integrated 'Easy Pack' lithium-ion polymer (Li-Ion Poly) battery solution.

VARTA Microbattery

mobility for you

Longer run-times, high energy density, small size, and lightweight have become essential features that batteries must incorporate today, as mobility is gaining extreme importance. Easy Pack is the result of Varta Microbattery's firm commitment toward providing the highest quality products by keeping in mind the needs of customers and undertaking constant research and development (R&D) in order to be at the forefront of battery technology.

LITHIUM-ION POLYMER (LI-ION POLY) TECHNOLOGY

The Li-Ion Poly battery technology is a novice in the battery arena but holds great promises for the future as the existence of a gelled electrolyte makes the battery more flexible (can take on a very thin form factor) and can also be inflammable. Moreover, Li-Ion Poly has a high energy density, is environment friendly, and does not suffer from memory effects.

Despite these advantages, consumers are not well aware of this technology and a general distrust for this chemistry exists, discouraging its widespread demand. Difficulties with packaging, lack of proper form factor, and expensive technology (since it is new and hence costly for participants to manufacture) further contribute to its slow growth. Varta, with its Easy Pack product line, strives to change this mind-set by offering an extremely advanced product, encompassing various features thereby inducing higher competition in the market.

Easy Pack provides an integrated, design-in solution. It includes a battery pack, charging algorithms and the Varta Microbattery Easy Pack Evaluation Kit along with the charging reference design. Moreover, Easy Pack has a high energy density (between 550-2000 mAh), comes in four different sizes (such as 64.5x36.6x6.4 mm, 64.5x36.6x5.2 mm) and has an extremely thin form factor.

The most unique and distinct feature about this product is that it is a fully off-the-shelf battery solution, providing a highly differentiated product in the secondary lithium battery market.

PRODUCT DIFFERENTIATION FEATURES AND BENEFITS

-Complete Off-the-shelf Integrated Battery Solution

Easy Pack presents an entire battery solution off-the-shelf. This is an exclusive product offered by Varta Microbattery and a product such as this has never been introduced before in the Li-Ion Poly battery segment by any market participant. Since

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Easy Pack is an off-the-shelf solution, it enjoys the advantages of being available at all times, reducing design time, providing better battery management, facilitating mobility and is comprehensive as it includes charging algorithms and evaluation kits together with the battery pack. It imparts an unsophisticated battery solution in that it enables manufacturers to use a standard battery, connector, and charger configuration thereby reducing the system design cost, time to market, and overall costs. This proposes an extremely viable solution to various end users that are price sensitive as well as constrained by the mobility factor.

-High Energy Density but Lightweight

Easy Pack offers a high energy density suitable for all major applications. For example, the type 3 size with dimensions 64.5x36.6x11.4 mm delivers approximately 2000 mAh. This also enables the battery to be lightweight since fewer numbers of cells would be required to provide a given amount of power. Moreover, the housing of Easy Pack has been done with utmost optimization in order to fit the cell. This lends to it an extremely thin and flexible form factor. Thus, the growing demand of consumers in terms of longer run-times and lightweight is expected to be met suitably by the Easy Pack battery solution.

-Different Sizes to Meet the Needs of a Wide Range of Applications

Varta Microbattery's Easy Pack is available in four different sizes presently, to suit the needs of a host of applications. Type 4 is considered to be the most compact version with 43.5x35.4x5.8 mm dimensions and delivering power to the extent of 550 mAh. Currently, it is expected to add tremendous value to mobile phones and other areas where portable devices are increasingly being used such as medical, instrumentation, and wireless applications. However, depending on the device and application, its penetration is projected to rise massively given the various positive features it contains.

-Simple and Secure

Easy Pack has been UL (Underwriters Laboratories) and CE (European Conformity) certified. Both these are essential safety tests guaranteeing that the product can be trusted and are not harmful to public health or the environment. Moreover, Easy Pack contains a thermal sensor and protection circuit mode to identify temperature increases and to shield the

VARTA Microbattery

mobility for you

battery from blowing up. Thus, Varta attempts to pacify the doubts in the minds of consumers about the safety of the polymer battery pack by providing the highest quality battery solution by conforming to the various laws and regulations.

Varta Microbattery expects a 20 percent growth rate in its sales due to its advanced and innovative product, Easy Pack. In order to make it cost-effective, the assembling is occurring in Asia and phenomenal responses have started pouring in from OEM customers in the United States, Europe, and Asia. Additionally, in terms of ensuring customer satisfaction and stability in growth, the company provides technical expertise and support at every step to OEMs and also assists design engineers to warrant the development of best and superior quality products to OEMs.

CONCLUSION

Varta Microbattery's unique and one-stop battery solution 'Easy Pack' is a truly innovative product in the secondary lithium battery segment. It offers immense advantages to the users in terms of being an integrated off-the-shelf product along with providing high energy capacity, being lightweight, small in size, and reducing design as well as overall costs. The general perception in the market about the polymer technology is that it is an unsafe and expensive technology with still a long way to go in terms of applicability in various areas.

Varta seeks to change this opinion with its superior product that exploits all the positive features that polymer technology offers together with ensuring that the negative attributes are countered too. The combination of these features and benefits makes Varta Microbattery a worthy recipient of the 2005 Frost & Sullivan Award for Product Differentiation Innovation in the world industrial secondary lithium battery market.

FOR MORE INFORMATION, CONTACT

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www.varta-microbattery.com

-or-

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2005

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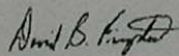
PRODUCT DIFFERENTIATION INNOVATION AWARD

Presented to

VARTA MICROBATTERY GMBH

for its

EASY PACK LITHIUM POLYMER POLIFLEX BATTERY PACKS



CHAIRMAN

Founded in 1961, Frost & Sullivan is recognized as a global leader in growth consulting. Frost & Sullivan Awards are presented to companies that demonstrate excellence in its industry, commending the diligence, commitment, and innovative business strategies required to advance in the global marketplace. Recipients are selected based on in-depth analysis of the market, interviews with industry participants, and extensive secondary research.