

Dimaag's Zenius High-Power Battery Modules: Maximizing the Power of Toshiba's Lithium Titanium Oxide Batteries (SCiB™)

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EINPresswire.com/ -- • In a strategic collaboration with [Toshiba](#), [DIMAAG](#) launches its revolutionary High-Power Battery Module (Zenius) utilizing Toshiba's Battery SCiB™ Lithium Titanium Oxide chemistry.

- Designed for unparalleled continuous High-Power usage, Zenius facilitates Charge and Discharge at 10C rates.
- Zenius is now available using SCiB™ for implementation in a wide range of products including Mining, Construction, Agriculture, and other Off-Road Vehicles as well as Battery Energy Storage Systems (BESS) for Grid and DC Fast Charging Applications.



The California Air Resources Board (CARB) and other regulatory bodies are actively enforcing off-road diesel and large spark-ignition engine vehicle and equipment regulations in support of clean air goals.

The Battery Solution that has been developed for the on-road car industry is not appropriate for these off-road applications. The off-road vehicles are work vehicles which are used for long hours and at continuous high power and hence need a large amount of energy per day.

The energy density of diesel is about 20 times higher than that of a typical lithium-ion battery. This makes it impractical, if not impossible, to store all the energy required for daily consumption in a vehicle. This leaves two alternatives:

1. Swap discharged batteries with charged batteries during the working hours.
2. Fast charge discharged batteries during working hours.

Dimaag's game changing Zenius battery pairs an advanced thermal management system with Toshiba's battery SCiB™ creating a module that's capable of being charged or regen very quickly (0 to 80% SOC in 6-minutes) while offering tens of thousands of cycles.

Zenius delivers this by maintaining the SCiB™ cells temperatures well within Toshiba's limits thereby maximizing their cycle life, calendar life, performance, and safety even in the most demanding power applications operating at extreme temperatures. Furthermore, these innovations allow for a smaller, more cost competitive battery, both initially and over life, to operate all day without extensive downtime required for charging.

"Toshiba's lithium titanium oxide cells have been exceptional for many years. But existing modules and packs have not been able to unleash their full capability because of thermal management limitations. Zenius overcomes this issue and hence unlocks their potential in High-Power battery applications like the mining industry. It is very satisfying to provide a compelling battery solution that enables the deployment of safe, cost-effective, long life-cycle electric vehicles and ecosystem. At Dimaag we believe in solving the current industry challenges with a long-proven battery cell technology. An optimized battery-based vehicle should be able to perform at the same level as a diesel-based vehicle but without the drawbacks." explains Ian Wright, VP Engineering at Dimaag and one of the cofounders of Tesla.

Dimaag Zenius Battery Module & Charging System Highlights

- **Rapid Charging:** Achieve an 80% state of charge in just 6 minutes, minimizing downtime for heavy-duty equipment.
- **Powerful Performance:** Delivering rapid discharge and charge rates, the system is ideal for demanding applications in mining, construction, and agriculture.
- **Exceptional Cycle Life:** Experience over 20,000 cycles with continuous fast charging and discharging, ensuring long-lasting performance, and reduced total cost of ownership.
- **Uncompromising Safety:** Advanced active thermal management safeguards battery modules, providing superior safety and reliability.
- **Extreme Temperature Resilience:** Operate (charge/discharge) flawlessly in temperatures from -30 to 55°C, expanding the range of potential use cases.
- **Advanced Battery Management Systems (BMS):** Zenius paired with Dimaag's advanced BMS

hardware and software optimizes battery charging and extends battery life.

Dimaag's Zenius Battery Modules are designed to be stackable, like Lego pieces, eliminating the need for additional mechanical structures or overhead space. This modular approach along with their thermal efficiency enables Zenius to rival other lithium-ion chemistries in both energy density (Wh/L) and specific energy (Wh/kg).

About Dimaag-AI., Inc.

Founded in 2018 and headquartered in Silicon Valley, Dimaag is a leading provider of Electric Solutions for EV/Mobility, ESS and Mega Watt DC Fast Chargers. Dimaag's game-changing EV/Mobility solutions are adopted by multiple OEM partners, paving the way for a standardized battery platform solution for the industry. With a strong team across USA, Japan, and India, Dimaag is poised to disrupt the industry with its innovative solutions. Learn more at www.dimaag-ev.com

About Toshiba

Toshiba Corporation leads a global group of companies that combines knowledge and capabilities from almost 150 years of experience in a wide range of businesses—from energy and social infrastructure to electronic devices—with world-class capabilities in information processing, digital and AI technologies. These distinctive strengths support Toshiba in building infrastructure that everyone can enjoy, and a connected data society, and in achieving the Company's ultimate goal, a future that realizes carbon neutrality and a circular economy. Guided by the Basic Commitment of the Toshiba Group, "Committed to People, Committed to the Future," Toshiba contributes to society's positive development with services and solutions that lead to a better world. The Group and its 105,000 employees worldwide secured annual sales of 3.3 trillion yen in fiscal year 2023. Find out more about Toshiba at <https://www.global.toshiba/ww/top.html> or follow Toshiba Corporation on [LinkedIn](#).

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