Flash Battery

The future of industrial electrification is “made in Italy”

Born out of a garage in 2012 from an idea of Marco Righi (CEO) and Alan Pastorelli (CTO), Flash Battery is today a leading company in the field of lithium batteries for industrial machines and electric vehicles

by Pietro Gabrielli

After closing 2021 with a turnover of 17.3 million, up 25% on the previous year, Flash Battery, company based in Sant’Ilario d’Enza (Italy), continues its international rise, thanks to a made in Italy technology, that has turned innovation and R&D into its greatest strengths. We talk about it with CEO and founder Marco Righi.

Why did you decide to take the leap on lithium batteries ten years ago?
“Because a battery that was five times lighter and delivered three times the lifecycles of a lead-acid battery was revolutionary at the time. There were big reliability issues, but this was more of an electronics problem, nothing to do with the chemistry. That’s why our initial focus wasn’t on producing the battery but on the electronics behind it. After perfecting the electronics, we started

producing complete, turnkey battery packs and since then, our technology has never stopped evolving. Just think that 35% of our employees are active in the R&D department and engaged in constant research activities".

What are the main advantages of Flash Battery lithium technology and how do they differentiate you from competitors?

"We made ourselves stand out from competitors right from the beginning with our applied technology. The Flash Balancing system - our own Battery Management System which is patented in Italy and European patent pending - is definitely one of a kind. It acts both actively and passively with a balancing power (20A) that by far exceeds conventional BMS systems. This translates into several advantages, such as ultra-quick balancing time (under 30 minutes) and maximum run time for Flash Battery lithium batteries. Another differentiating tool is our proprietary Flash Data Center, a remote-control software integrated inside all our batteries, which monitors 24/7 the health status of each battery produced, thus performing self-diagnostics and predictive maintenance. Just now, some competitors are coming around to this system, but clearly the time advantage and our focus on R&D help us to maintain the lead. As a matter of fact, we will present at Bauma 2022 a new 4.0 release, implemented with an improved interface and artificial intelligence algorithms".

Marco Righi (left), CEO & Founder of Flash Battery, with Alan Pastorelli, CTO & Co-founder

You specialise in the production of lithium batteries for industrial machinery: have you ever thought about "automotive" industry?

"We always kept a clear focus on our benchmark market: whilst a lot of our competitors produce all types of batteries, from those for bikes to those for industrial machinery, our target has always been industry, industrial vehicles and special industrial machinery, consequently producing medium-large batteries from 6 up to over 300 kWh. We chose to focus on industry, because ten years ago it was more receptive than the automotive world. Many industrial vehicles were already electric at the time and this protects us from the big potential investors the battery world is attracting. The automotive industry would certainly offer a good opportunity for growth, but as I see it, the big automakers will end up producing their own batteries while the industrial world, on the other hand, has lower numbers and high customisation needs".

How customisable are your batteries?

"Totally, that's what sets us apart from the giants. So far, we have produced more than 500 different customised battery models, which fit the exact space requirements of each individual application and offer capacities and voltages tailored to the working requirements. We brought

Example of Flash Battery customised for an electric vehicle (358,4 V - 100 Ah 35,8 kWh)

Flash Battery custom lithium batteries

customisation to an industrial level and we are able to guarantee high quality and performance in the supply with validated and standardised processes".

At what stage is the market where you are currently active and which are your prospects for development?

"Market is definitely getting ready. In recent years we have been experiencing an increasing number of manufacturers, willing to take the decisive step towards electrification of their vehicles. Up until five years ago, we would have never thought of electrifying an excavator or an agricultural machine, but today we have several electric prototypes in the construction and agricultural sectors, to name but a few. There is therefore a clear interest in the electrification of increasingly large vehicles, with high-voltage batteries and high power in terms of kW. Our prospects for development are very much linked to foreign markets, both directly and indirectly. Indeed, 35% of our output is currently directed abroad. However, if we consider that the batteries supplied to Italian customers are installed in machines that will be exported all over the world, we can say that more than the 80% of Flash Battery Production is internationally oriented. In addition, the numerous partnerships established with powertrain system integrators from the most electrification-oriented countries in Europe, such as Efa France in France, Atech GmbH in Germany and Q-tronic in Benelux, will further support our international growth". ■

Lithium batteries for electric vehicles

ITALIAN ABSTRACT

IL FUTURO DELL'ELETTRIFICAZIONE INDUSTRIALE È "MADE IN ITALY"

La nuova frontiera dell'elettrificazione industriale passa dall'Italia, precisamente a Sant'Ilario d'Enza (RE), dove nel 2012 è nata Flash Battery, oggi punto di riferimento a livello internazionale nella produzione di batterie al litio per macchine industriali e veicoli elettrici. Dopo aver chiuso il 2021 con un fatturato di 17,3 milioni di euro (+25% rispetto al 2020), l'azienda celebra il suo decennale di fondazione continuando la sua crescita, grazie a una tecnologia proprietaria che ha fatto di innovazione e ricerca e sviluppo i suoi punti di forza. Il 35% del team Flash Battery è attivo in R&D, per lo studio di nuove tecnologie volte ad anticipare le richieste di mercato e ottimizzare i processi produttivi. A puntare sul litio, nel 2012 sono stati Marco Righi, CEO, e Alan Pastorelli, CTO dell'azienda, che superando gli allora limiti dell'elettronica hanno sviluppato un BMS unico nel suo genere con un sistema di bilanciamento attivo e passivo delle celle brevettato, che permette una carica ultrarapida e lunghi cicli vita. Flash Battery possiede inoltre un software di controllo remoto, il Flash Data Center, che monitora 24/7 i parametri di vita della batteria inviando i dati a un cloud che in tempo reale li analizza, svolgendo autodiagnostica e manutenzione predittiva. Flash Battery ha prodotto oltre 500 diversi modelli di batterie customizzate, che rispettano gli spazi e gli ingombri richiesti dal veicolo e offrono capacità e tensioni studiate ad hoc per le esigenze di lavoro delle più diverse applicazioni industriali, dall'edilizia alla logistica, all'agricoltura, al material handling, alle piattaforme aeree, ai mezzi aeroportuali e a molti altri settori industriali che stanno man mano abbracciando l'elettrificazione.