



VALMET AUTOMOTIVE

About Valmet Automotive

Valmet Automotive is one of globally leading vehicle contract manufacturers. Since the founding of the company in 1968, Valmet Automotive stands for high quality manufacturing for renowned OEMs. More than 1.8 million vehicles have left our production lines to date in Uusikaupunki, Finland.

The leading automotive trend today is electric mobility, and this applies also to Valmet Automotive. We are a global pioneer in the business, and strategically, our operations have focused on electric mobility since 2008. Valmet Automotive meets the OEMs' increasing needs for efficient battery systems and their production capacities by offering the entire value chain from concept, engineering, prototypes, and testing to manufacturing. Valmet Automotive started R&D on in-house battery management systems in 2014. Now this work is utilized in Valmet Automotive's own Modular Battery Platform product portfolio, containing solutions for electrification of truck & bus and off-highway segment applications.

Currently, Valmet Automotive operates three high-volume battery plants. The Salo and Uusikaupunki plants in Finland are complemented by the Kirchardt plant in Germany. Our versatile offering and capacity underscores our leading position as a system supplier of battery systems and modules.



Juha Kurkilahti Dr. Laurent Torcheux



Kaarle Patomäki Dr. Laurent Torcheux



Toni Holm

About Valmet Automotive team

B.Sc.Eng Juha Kurkilahti, SW Manager at Valmet Automotive EV Power. Managing all SW activities and having wide expertise on areas of embedded systems, IoT, Medical Devices/Systems and Telecommunications. In BATMAX project, Juha has been working on IoT target architecture and technology selections.

M.Sc.Eng. Kaarle Patomäki, Software Designer focusing on Model Based Development at Valmet Automotive EV Power, with main expertise in algorithm development for battery management systems. In the BATMAX project, Kaarle works on artificial intelligence driven battery state estimations. He is also the technical coordinator on Valmet Automotive's side.

M.Sc. Toni Holm, Senior Specialist in Model Based Software Design at Valmet Automotive EV Power, working on battery characterization, modeling, algorithm development, and simulation. Toni has background in power electronics and alternative electric energy technology. In the BATMAX project, Toni focuses on state-of-health algorithm development.

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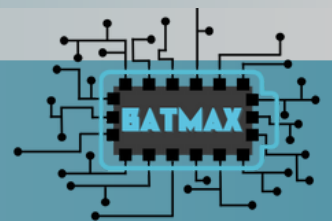


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What will the BATMAX project add to the current scientific state-of-the-art?

BATMAX will create methods and tools to model battery packs in a way that will help reduce the development costs of new battery packs due to BMS self-learning abilities, partially removing the need for development testing. In addition, the understanding of the vast variety of states a lithium battery can be better understood, making it easier to predict potential failures in advance, making the batteries safer and prolonging their serviceable life as well as reducing lifetime costs for users.

Why is the BATMAX project important?

Going toward a society where e-mobility becomes a major form of transporting people and goods, a holistic view and understanding of battery systems' behavior is essential. Taking into consideration the competitiveness of battery design and manufacturing in Europe, collaboration projects such as BATMAX are crucial to gain mutual understanding in a field that still lacks robustness and standardization.



Juha Kurkilahti



Kaarle Patomäki Dr. Laurent Torcheux



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What will be the role of your organization in the project?

BATMAX focuses on the implementation of physics based BMS algorithms. The target is to stream BMS measurement data into a cloud and process it with the derived algorithms. Valmet Automotive has taken the lead of the BMS requirement document derivation. Additionally, Valmet Automotive will design a neural network-based state-of-health estimator to run in the cloud environment. We are also implementing a gateway for data handling between the BMS and the cloud.

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