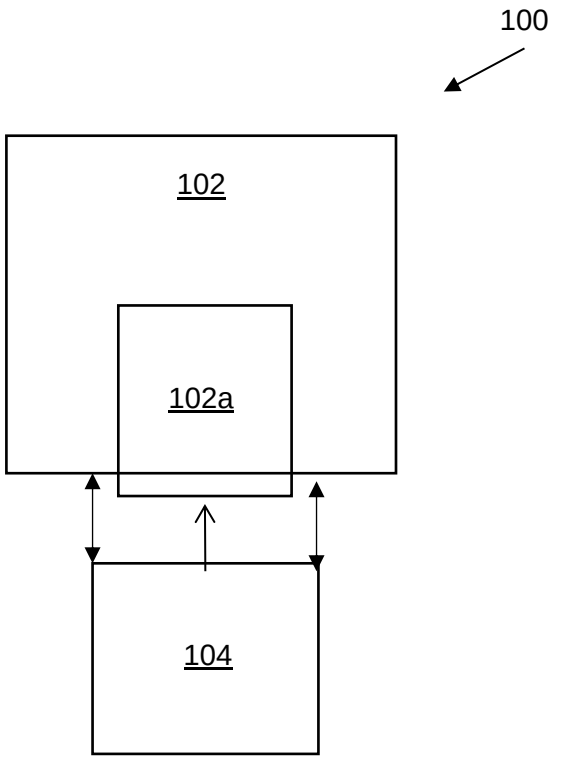


Figure 1

September 25, 2023

Kumar Tushar Srivastava
IN/PA-3973
Agent for the Applicant

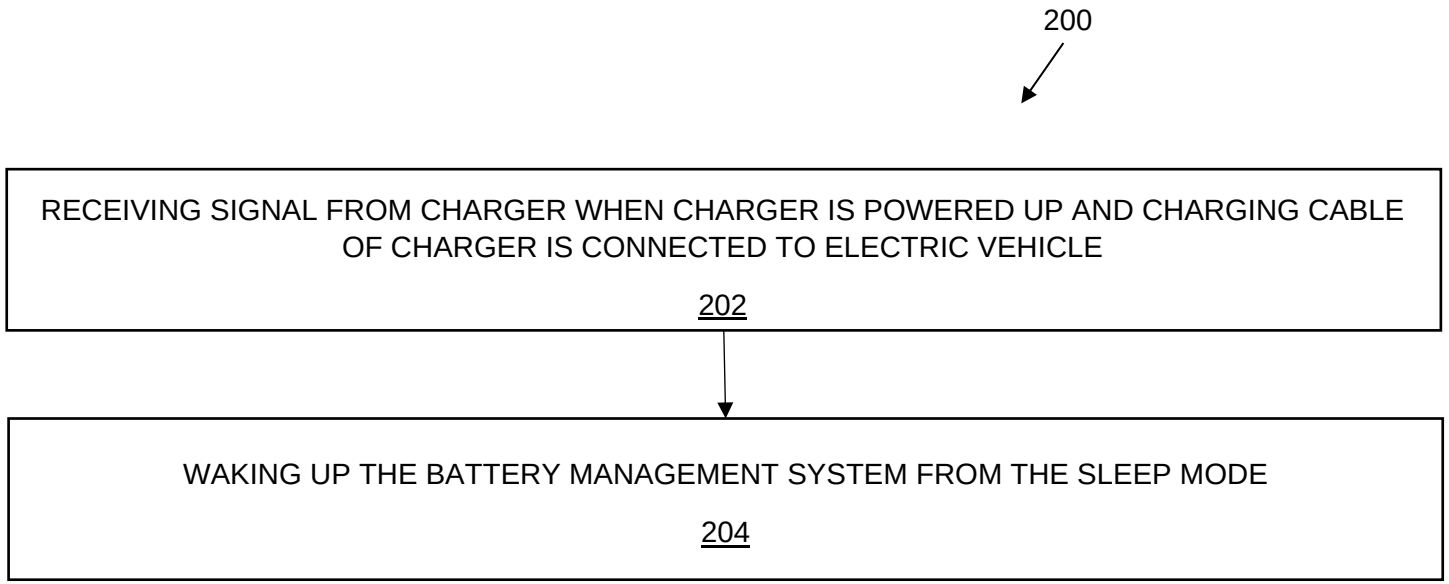


Figure 2

September 25, 2023

Kumar Tushar Srivastava
IN/PA-3973
Agent for the Applicant

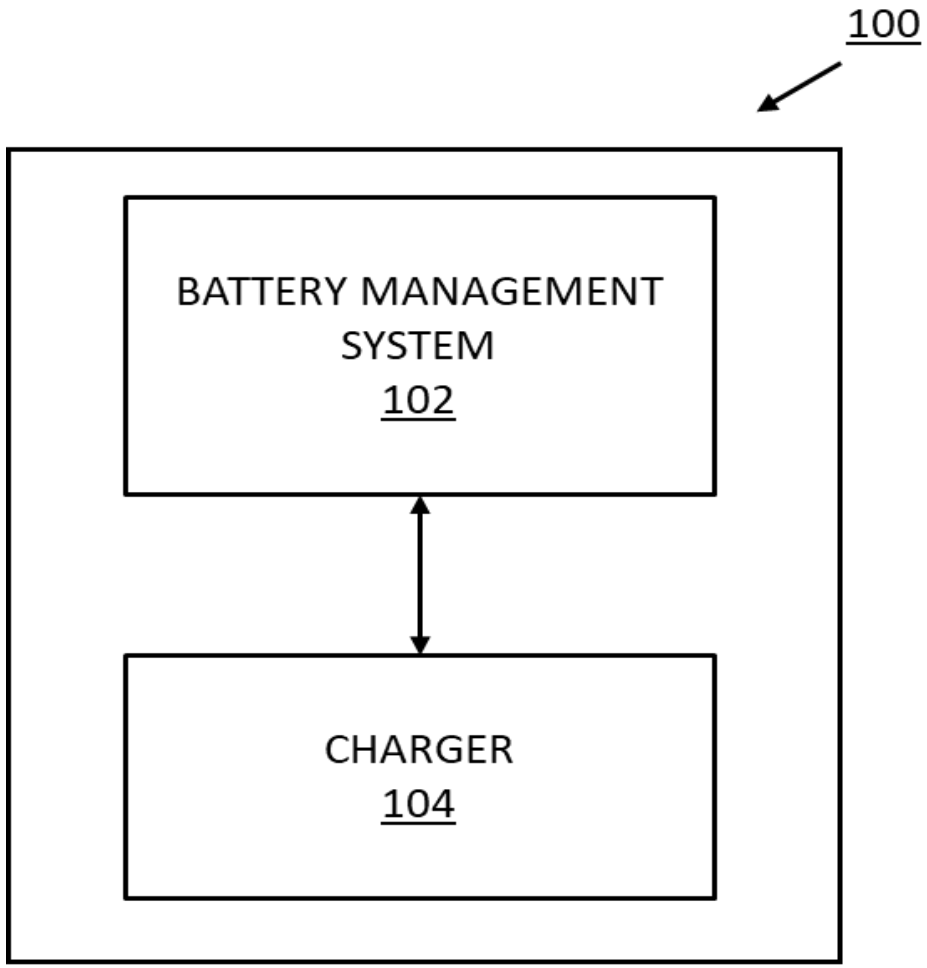


FIGURE-1

Sep 28, 2022

Kumar Tushar Srivastava
IN/PA-3973
Agent for the Applicant

FORM 2

THE PATENTS ACT, 1970

(39 of 1970)

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THE PATENTS RULES, 2003

COMPLETE SPECIFICATION

1. TITLE OF THE INVENTION

SYSTEM AND METHOD FOR WAKE UP OF ELECTRIC VEHICLE FROM SLEEP MODE

2. APPLICANT(S)

NAME – **MATTER MOTOR WORKS PRIVATE LIMITED**

NATIONALITY - **INDIA**

ADDRESS – **301, PARISHRAM BUILDING, 5B RASHMI SOC., NR. MITHAKHALI SIX ROADS, NAVRANGPURA AHMEDABAD, GUJARAT, INDIA – 380009**

3. PREAMBLE TO DESCRIPTION

COMPLETE SPECIFICATION - The following specification particularly describes the invention and the manner in which it is to be performed.

SYSTEM AND METHOD FOR WAKE UP OF ELECTRIC VEHICLE FROM SLEEP MODE

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application claims priority from Indian Provisional Patent Application No. 202221055799 filed on 28/09/2022, the entirety of which is incorporated herein by a reference.

TECHNICAL FIELD

The present disclosure generally relates to wake up of electric vehicle from a sleep mode. Particularly, the present disclosure relates to a system and a method for the wake up of an electric vehicle from sleep mode.

BACKGROUND

Recently, there has been a rapid development in electric vehicles because of their ability to resolve pollution-related problems and serve as a clean mode of transportation. Generally, electric vehicles include a power pack, and/or combination of electric cells for storing electricity required for the propulsion of the vehicles. The electrical power stored in the power pack of the electric vehicle is supplied to the traction motor and various other electrical components for the operation of the electric vehicle.

The power pack of the electric vehicle is managed by a controller that is commonly called a battery management system (BMS). The battery management system calculates various parameters for managing the battery by collecting various information (a battery voltage, a battery current, a battery temperature, state of charge, state of health, etc.). Furthermore, the battery management system manages the power supply to the electrical components of the electric vehicle from the power pack of the electric vehicle.

Presently, the electric vehicle provides a vacation mode function when a user is not going to use the vehicle for a prolonged period of time. When the user activates the vacation mode, the battery management system enters a sleep mode, to maintain the state of charge of the power pack and prevent the deep discharge of the power pack. However, the user operation is required to activate the vacation mode in the vehicle which increases the dependency of the battery management system on the user to maintain the state of charge of the battery or prevent deep discharge.

Furthermore, the self-discharging of the power pack is caused when the user forgets to turn on the vacation mode during non-operational conditions of the vehicle for a long time. The self-discharging of the battery for a long time decreases the state of charge of the battery below a specific level which results in deep discharge of the power pack and failure of the operational functionality of the electric vehicle. Presently, a service operator is required to resolve the problems related to deep discharge of the power pack and failure of the operational functionality of the electric vehicle.

Therefore, there exists a need for a mechanism that overcomes the one or more problems associated as set forth above.

SUMMARY

An object of the present disclosure is to provide a system for wake up of an electric vehicle from a sleep mode.

Another object of the present disclosure is to provide a method for waking up of an electric vehicle from a sleep mode.

In accordance with the first aspect of the present disclosure, there is provided a system for wake up of an electric vehicle from a sleep mode. The system comprises a battery management system comprising an auxiliary power supply,

wherein the auxiliary power supply is configured to wake up the battery management system from the sleep mode using a charger.

The present disclosure provides a system for wake up of an electric vehicle from a sleep mode which beneficially utilizes a charger to wake up the electric vehicle from the sleep mode. Advantageously, the system of the present disclosure automatically puts the electric vehicle in the sleep mode to prevent the self-discharging of the power pack. The system of the present disclosure eliminates the need of a service operator to wake up the electric vehicle from a sleep mode or a deep discharge state. Beneficially, the system protects the electrical and electronic components of the electric vehicle from failure and prolongs the operational life of the electric vehicle.

In accordance with the second aspect of the present disclosure, there is provided a method for waking up of an electric vehicle from a sleep mode. The method comprises waking up a battery management system from the sleep mode by an auxiliary power supply of the battery management system using a charger.

Additional aspects, advantages, features, and objects of the present disclosure would be made apparent from the drawings and the detailed description of the illustrative embodiments constructed in conjunction with the appended claims that follow.

It will be appreciated that features of the present disclosure are susceptible to being combined in various combinations without departing from the scope of the present disclosure as defined by the appended claims.

BRIEF DESCRIPTION OF DRAWINGS

The summary above, as well as the following detailed description of illustrative embodiments, is better understood when read in conjunction with the appended drawings. For the purpose of illustrating the present disclosure, exemplary constructions of the disclosure are shown in the drawings. However, the present

disclosure is not limited to specific methods and instrumentalities disclosed herein. Moreover, those in the art will understand that the drawings are not to scale. Wherever possible, like elements have been indicated by identical numbers.

Embodiments of the present disclosure will now be described, by way of example only, with reference to the following diagrams wherein:

FIG. 1 illustrates a block diagram of a system for wake up of an electric vehicle from a sleep mode, in accordance with an aspect of the present disclosure.

FIG. 2 illustrates a flow chart of a method for wake up of an electric vehicle from a sleep mode, in accordance with another aspect of the present disclosure.

In the accompanying drawings, an underlined number is employed to represent an item over which the underlined number is positioned or an item to which the underlined number is adjacent. A non-underlined number relates to an item identified by a line linking the non-underlined number to the item. When a number is non-underlined and accompanied by an associated arrow, the non-underlined number is used to identify a general item at which the arrow is pointing.

DETAILED DESCRIPTION

The following detailed description illustrates embodiments of the present disclosure and ways in which they can be implemented. Although some modes of carrying out the present disclosure have been disclosed, those skilled in the art would recognize that other embodiments for carrying out or practicing the present disclosure are also possible.

The description set forth below in connection with the appended drawings is intended as a description of certain embodiments of a system for wake up of an electric vehicle from a sleep mode and is not intended to represent the only forms that may be developed or utilized. The description sets forth the various structures and/or functions in connection with the illustrated embodiments; however, it is to

be understood that the disclosed embodiments are merely exemplary of the disclosure that may be embodied in various and alternative forms. The figures are not necessarily to scale; some features may be exaggerated or minimized to show details of particular components. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a representative basis for teaching one skilled in the art to variously employ the present invention.

While the disclosure is susceptible to various modifications and alternative forms, specific embodiment thereof has been shown by way of example in the drawings and will be described in detail below. It should be understood, however, that it is not intended to limit the disclosure to the particular forms disclosed, but on the contrary, the disclosure is to cover all modifications, equivalents, and alternatives falling within the scope of the disclosure.

The terms “comprise”, “comprises”, “comprising”, “include(s)”, or any other variations thereof, are intended to cover a non-exclusive inclusion, such that a setup, or system that comprises a list of components or steps does not include only those components or steps but may include other components or steps not expressly listed or inherent to such setup or system. In other words, one or more elements in a system or apparatus preceded by “comprises... a” does not, without more constraints, preclude the existence of other elements or additional elements in the system or apparatus.

In the following detailed description of the embodiments of the disclosure, reference is made to the accompanying drawings which are shown by way of illustration-specific embodiments in which the disclosure may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice the disclosure, and it is to be understood that other embodiments may be utilized and that changes may be made without departing from the scope of the present disclosure. The following description is, therefore, not to be taken in a limiting sense.

The present disclosure will be described herein below with reference to the accompanying drawings. In the following description, well-known functions or constructions are not described in detail since they would obscure the description with unnecessary detail.

As used herein, the terms “electric vehicle”, “EV”, and “EVs” are used interchangeably and refer to any vehicle having stored electrical energy, including the vehicle capable of being charged from an external electrical power source. This may include vehicles having batteries that are exclusively charged from an external power source, as well as hybrid vehicles which may include batteries capable of being at least partially recharged via an external power source. Additionally, it is to be understood that the ‘electric vehicle’ as used herein includes electric two-wheelers, electric three-wheelers, electric four-wheelers, electric pickup trucks, electric trucks, and so forth.

As used herein, the terms “power pack” “battery pack”, “battery”, and “power source” are used interchangeably and refer to multiple individual battery cells connected to provide a higher combined voltage or capacity than a single battery. The power pack is designed to store electrical energy and supply it as needed to various devices or systems. Power pack, as referred herein may be used for various purposes such as power electric vehicles and other energy storage applications. Furthermore, the power pack may include additional circuitry, such as a battery management system (BMS), to ensure the safe and efficient charging and discharging of the battery cells. The power pack comprises a plurality of cell arrays which in turn comprises a plurality of battery cells.

As used herein, the terms “battery management system” and “BMS” are used interchangeably and refer to an electronic system that monitors and manages the battery pack. It protects the battery from operating outside its safe operating area (SOA), monitors its state, calculates secondary data, reports that data, controls its environment, authenticates it, and/or balances it. The power pack is built together with a battery management system with an external communication data bus to

communicate with other components of the electric vehicle. The BMS is critical to the battery pack's safe operation, overall performance, and longevity. The BMS protects the battery pack from overcharging, deep discharging, overheating, and short-circuiting. Furthermore, the BMS also monitors the battery pack's state of charge (SOC), state of health (SOH), and temperature. The information obtained and monitored by the BMS is used to optimize the battery's performance and extend its lifespan.

As used herein, the terms "auxiliary power supply", "integrated power supply" and "BMS power supply" are used interchangeably and refer to the subsystem of the battery management system that provides power to the electronic components of the battery management system including the microcontroller, sensors, and actuators. The auxiliary power supply is typically powered by the battery pack itself. The auxiliary power supply is designed to operate over a wide range of input voltages and currents. Furthermore, the auxiliary power supply can withstand high levels of vibration and shock as the BMS is typically mounted on the battery pack, which is located in a harsh environment under the electric vehicle.

As used herein, the terms "sleep mode", and "vacation mode" are used interchangeably and refer to a low-power state of the electric vehicle that the vehicle enters when it is not in use for a long period of time. This helps to conserve battery power and extend the vehicle's range and operation of the power pack. Furthermore, the sleep mode prevents the failure of the electronic components of the electric vehicle due to the low voltage of the power pack. Moreover, the sleep mode prevents the power pack of the electric vehicle from deep discharge and damages occurring due to the deep discharge of the power pack. In the sleep mode, the battery management system enters a low power state and the power supply from the battery management system to the other components of the electric vehicle is cut off to slow down the discharge rate of the power pack and prevent deep discharge of the power pack.

As used herein, the terms “charger”, “electric vehicle charger” and “charging unit” are used interchangeably and refer to a device that provides electrical power to recharge the power pack of the electric vehicle. It is to be understood that the charger can be an external charger or an onboard charger. Furthermore, the external charger can be an AC charger or a DC charger.

As used herein, the terms “traction inverter”, “drive-train unit” and “DTU” are used interchangeably and refer to a component of the powertrain of an electric vehicle that is responsible for converting direct current (DC) from the battery pack of the electric vehicle into alternating current (AC) to power the electric motor that drives the wheels of the electric vehicle. It is to be understood that the traction inverter is utilized in power conversion, motor control, and regenerative braking of the electric vehicle. The traction inverter comprises advanced power electronics to ensure the smooth and efficient operation of the electric vehicle.

As used herein, the terms “traction motor”, “electric motor”, and “motor” are used interchangeably and refer to a motor specifically designed and employed for the purpose of propelling a vehicle, such as an electric vehicle. It is to be understood that the traction motors rely on electric power to generate motion and provide the necessary torque to drive the wheels of the electric vehicle.

As used herein, the terms “vehicle control unit” and “VCU” are used interchangeably and refer to a computing unit of the electric vehicle that controls and coordinates the operation of the vehicle's various subsystems, including the electric motor, charging system, and braking system. The VCU is responsible for optimizing the vehicle's performance, efficiency, and safety.

As used herein, the terms “body control unit” and “BCU” are used interchangeably and refer to a computing unit of the electric vehicle that controls and coordinates the operation of the vehicle's various body systems, such as the lighting, locks, and central locking.

As used herein, the terms “microcontroller”, “microprocessor” and “processor” are used interchangeably and refer to a computational element that is operable to respond to and process instructions that drive the system. Optionally, the microprocessor may be a micro-controller, a complex instruction set computing (CISC) microprocessor, a reduced instruction set (RISC) microprocessor, a very long instruction word (VLIW) microprocessor, or any other type of processing unit. Furthermore, the term “microprocessor” may refer to one or more individual processors, processing devices, and various elements associated with a processing device that may be shared by other processing devices. Furthermore, the microprocessor may be designed to handle real-time tasks with high performance and low power consumption. Furthermore, the microprocessor may comprise custom and/or proprietary processors.

As used herein, the term “communicably coupled” refers to a bi-directional connection between the various components of the system. The bi-directional connection between the various components of the system enables the exchange of data between two or more components of the system. Similarly, the bi-directional connection between the system and other elements/modules enables the exchange of data between the system and the other elements/modules.

Figure 1, in accordance with an embodiment, describes a system **100** for wake up of an electric vehicle from a sleep mode. The system **100** comprises a battery management system **102** comprising an auxiliary power supply **102a**, wherein the auxiliary power supply **102a** is configured to wake up the battery management system **102** from the sleep mode using a charger **104**.

The system **100** beneficially utilizes the charger **104** to wake up the electric vehicle from the sleep mode. Advantageously, the system **100** automatically puts the electric vehicle in the sleep mode to prevent the self-discharging of the power pack. The system **100** eliminates the need of a service operator to wake up the electric vehicle from sleep mode or deep discharge state as the system **100** utilizes the charger **104** to wake up the electric vehicle. Beneficially, the system **100**

protects the electrical and electronic components of the electric vehicle from failure and prolongs the operational life of the electric vehicle.

In an embodiment, the auxiliary power supply **102a** puts the battery management system **102** in the sleep mode, when at least one parameter of a power pack falls below a threshold value. In a specific embodiment, the at least one parameter of the power pack comprises state of charge and/or voltage of the power pack. It is to be understood that the battery management system **102** calculates and monitors the at least one parameter of a power pack. When the calculated value of the at least one parameter of a power pack falls below the threshold value, the auxiliary power supply **102a** puts the battery management system **102** in the sleep mode. Beneficially, activation of sleep mode in this manner eliminates the dependence on electric vehicle users to activate the sleep mode. More beneficially, the activation of sleep mode prevents deep discharge of the power pack. More beneficially, the activation of sleep mode prevents damage to the electrical components of the electric vehicle due to the low voltage of the power pack. It is to be understood that the threshold value of the at least one parameter of a power pack is pre-defined. In an exemplary embodiment, the battery management system **102** calculates the state of charge of the power pack and if the state of charge of the power pack is below 60 percent, the auxiliary power supply **102a** puts the battery management system **102** in the sleep mode. Optionally, the auxiliary power supply **102a** puts the battery management system **102** in the sleep mode when the electric vehicle is not being operated for more than a pre-defined time period. Optionally, the auxiliary power supply **102a** puts the battery management system **102** in the sleep mode when the at least one parameter of a power pack falls below the threshold value and the electric vehicle is not being operated for more than a pre-defined time period.

In an alternative embodiment, the auxiliary power supply **102a** puts the battery management system **102** in the sleep mode, based on an input received from a user. It is to be understood that the input of the user is a command to put the battery management system **102** in the sleep mode. It is to be understood that the

electric vehicle would receive the user input from the user via a human-machine interface (HMI).

In an embodiment, the battery management system **102**, in the sleep mode, cuts off power supply from the power pack to electrical components of the electric vehicle. Beneficially, the cutting off of the power supply from the power pack to the electrical components of the electric vehicle reduces idle discharge rate of the power pack and prevents the deep discharge of the power pack. It is to be understood that the battery management system **102**, cuts off the power supply of the vehicle control unit, body control unit, drive train unit, vehicle instrument cluster, and motor in the sleep mode.

In an embodiment, the auxiliary power supply **102a** is configured to receive a signal from the charger **104** when the charger **104** is powered up and a charging cable of the charger **104** is connected to the electric vehicle to wake up the battery management system **102** from the sleep mode. In an embodiment, the charger **104** is an onboard charger of the electric vehicle. It is to be understood that when the charging cable is connected to the onboard charger and the onboard charger is powered up, a low-voltage signal is generated by the onboard charger and the same is sent to the auxiliary power supply **102a**. The signal (low voltage signal) is received by the auxiliary power supply **102a** as an instruction to start the power supply of the battery management system **102** to wake up the battery management system **102** from the sleep mode.

In an alternative embodiment, the charger **104** is an external charger. It is to be understood that a charging cable of the external charger is connected to the electric vehicle and the external charger is powered up, the onboard charger of the electric vehicle would also be powered up. When the onboard charger is powered up, a low voltage signal is generated by the onboard charger and sent to the auxiliary power supply **102a**. The signal (low voltage signal) is received by the auxiliary power supply **102a** as an instruction to start the power supply of the battery management system **102** to wake up the battery management system **102** from the sleep mode.

In another alternative embodiment, the charger **104** is an external charger. Optionally, the electric vehicle may comprise a secondary low-voltage battery for maintaining the power supply to ECU when the battery management system **102** is in the sleep mode. It is to be understood that the charging cable of the external charger is connected to the electric vehicle and the external charger is powered up, the external charger may generate a controller area network communication signal for the ECU and based on the controller area network communication signal received from the external charger, the ECU would instruct the auxiliary power supply **102a** to wake up the battery management system **102**.

In yet another alternative embodiment, the charger **104** is an external charger. It is to be understood that the charging cable of the external charger is connected to the electric vehicle and the external charger is powered up, the external charger may generate a low voltage signal and send the same to the auxiliary power supply **102a**. The signal (low voltage signal) is received by the auxiliary power supply **102a** as an instruction to start the power supply of the battery management system **102** to wake up the battery management system **102** from the sleep mode. Optionally, the low voltage signal may be a stepped up controller area network communication signal.

In an embodiment, the battery management system **102**, after waking up, restores the power supply from the power pack to the electrical components of the electric vehicle. It is to be understood that the battery management system **102**, restores the power supply of the vehicle control unit, body control unit, drive train unit, vehicle instrument cluster, and motor for the normal operation of the electric vehicle.

In an embodiment, the battery management system **102**, after waking up, starts charging the power pack from the charger **104**. Beneficially, the battery management system **102**, controls the electrical interaction between the power pack and the charger **104**, based on the at least one parameter of the power pack.

In an embodiment, the system **100** comprises a battery management system **102** comprising an auxiliary power supply **102a**, wherein the auxiliary power supply **102a** is configured to wake up the battery management system **102** from the sleep mode using a charger **104**. Furthermore, the auxiliary power supply **102a** puts the battery management system **102** in the sleep mode, when at least one parameter of a power pack falls below a threshold value. Furthermore, the at least one parameter of the power pack comprises state of charge and/or voltage of the power pack. Furthermore, the auxiliary power supply **102a** puts the battery management system **102** in the sleep mode, based on an input received from a user. Furthermore, the battery management system **102**, in the sleep mode, cuts off power supply from the power pack to electrical components of the electric vehicle. Furthermore, the auxiliary power supply **102a** is configured to receive a signal from the charger **104** when the charger **104** is powered up and a charging cable of the charger **104** is connected to the electric vehicle to wake up the battery management system **102** from the sleep mode. Furthermore, the battery management system **102**, after waking up, restores the power supply from the power pack to the electrical components of the electric vehicle.

Figure 2, describes method **200** for waking up of an electric vehicle from a sleep mode, wherein the method **200** comprises waking up a battery management system **102** from the sleep mode by an auxiliary power supply **102a** of the battery management system **102** using a charger **104**.

The method **200** starts at step **202** and completes at step **204**. At step **202**, the method **200** comprises receiving a signal from the charger **104** when the charger **104** is powered up and a charging cable of the charger **104** is connected to the electric vehicle. At step **204**, the method **200** comprises waking up the battery management system **102** from the sleep mode.

In an embodiment, the method **200** comprises putting the battery management system **102** in the sleep mode, when at least one parameter of a power pack falls below a threshold value. In a specific embodiment, the at least one parameter of the power pack comprises state of charge and/or voltage of the power pack.

In an embodiment, the method **200** comprises putting the battery management system **102** in the sleep mode, based on an input received from a user.

In an embodiment, the method **200** comprises cutting-off power supply from the power pack to electrical components of the electric vehicle, in the sleep mode of the battery management system **102**.

In an embodiment, the method **200** comprises receiving a signal from the charger **104** when the charger **104** is powered up and a charging cable of the charger **104** is connected to the electric vehicle for waking up the battery management system **102** from the sleep mode.

In an embodiment, the method **200** comprises restoring the power supply from the power pack to the electrical components of the electric vehicle.

In an embodiment, the method **200** comprises waking up a battery management system **102** from the sleep mode by an auxiliary power supply **102a** of the battery management system **102** using a charger **104**. Furthermore, the method **200** comprises putting the battery management system **102** in the sleep mode, when at least one parameter of a power pack falls below a threshold value. Furthermore, the at least one parameter of the power pack comprises state of charge and/or voltage of the power pack. Furthermore, the method **200** comprises putting the battery management system **102** in the sleep mode, based on an input received from a user. Furthermore, the method **200** comprises cutting-off power supply from the power pack to electrical components of the electric vehicle, in the sleep mode of the battery management system **102**. Furthermore, the method **200** comprises receiving a signal from the charger **104** when the charger **104** is powered up and a charging cable of the charger **104** is connected to the electric vehicle for waking up the battery management system **102** from the sleep mode. Furthermore, the method **200** comprises restoring the power supply from the power pack to the electrical components of the electric vehicle.

It would be appreciated that all the explanations and embodiments of the system **100** also apply mutatis-mutandis to the method **200**.

In the description of the present invention, it is also to be noted that, unless otherwise explicitly specified or limited, the terms “disposed”, “mounted,” and “connected” are to be construed broadly, and may for example be fixedly connected, detachably connected, or integrally connected, either mechanically or electrically. They may be connected directly or indirectly through intervening media, or they may be interconnected between two elements. The specific meaning of the above terms in the present invention can be understood in specific cases to those skilled in the art.

Modifications to embodiments and combinations of different embodiments of the present disclosure described in the foregoing are possible without departing from the scope of the present disclosure as defined by the accompanying claims. Expressions such as “including”, “comprising”, “incorporating”, “have”, and “is” used to describe and claim the present disclosure are intended to be construed in a non-exclusive manner, namely allowing for items, components or elements not explicitly described also to be present. Reference to the singular is also to be construed to relate to the plural where appropriate.

Although embodiments have been described with reference to a number of illustrative embodiments thereof, it should be understood that numerous other modifications and embodiments can be devised by those skilled in the art that will fall within the spirit and scope of the principles of this disclosure. More particularly, various variations and modifications are possible in the component parts and/or arrangements of the subject combination arrangement within the scope of the present disclosure, the drawings, and the appended claims. In addition to variations and modifications in the component parts and/or arrangements, alternative uses will also be apparent to those skilled in the art.

WE CLAIM:

1. A system (100) for wake up of an electric vehicle from a sleep mode, wherein the system (100) comprises a battery management system (102) comprising an auxiliary power supply (102a), and wherein the auxiliary power supply (102a) is configured to wake up the battery management system (102) from the sleep mode using a charger (104).

2. The system (100) as claimed in claim 1, wherein the auxiliary power supply (102a) puts the battery management system (102) in the sleep mode, when at least one parameter of a power pack falls below a threshold value.

3. The system (100) as claimed in claim 2, wherein the at least one parameter of the power pack comprises state of charge and/or voltage of the power pack.

4. The system (100) as claimed in claim 1, wherein the auxiliary power supply (102a) puts the battery management system (102) in the sleep mode, based on an input received from a user.

5. The system (100) as claimed in claim 1, wherein the battery management system (102), in the sleep mode, cuts off power supply from the power pack to electrical components of the electric vehicle.

6. The system (100) as claimed in claim 1, wherein the auxiliary power supply (102a) is configured to receive a signal from the charger (104) when the charger (104) is powered up and a charging cable of the charger (104) is connected to the electric vehicle to wake up the battery management system (102) from the sleep mode.

7. The system (100) as claimed in claim 1, wherein the battery management system (102), after waking up, restores the power supply from the power pack to the electrical components of the electric vehicle.

8. A method (200) for waking up of an electric vehicle from a sleep mode, wherein the method (200) comprises waking up a battery management system

(102) from the sleep mode by an auxiliary power supply (102a) of the battery management system (102) using a charger (104).

9. The method (200) as claimed in claim 8, wherein the method (200) comprises putting the battery management system (102) in the sleep mode, when at least one parameter of a power pack falls below a threshold value.

10. The method (200) as claimed in claim 9, wherein the at least one parameter of the power pack comprises state of charge and/or voltage of the power pack.

11. The method (200) as claimed in claim 8, wherein the method (200) comprises putting the battery management system (102) in the sleep mode, based on an input received from a user.

12. The method (200) as claimed in claim 8, wherein the method (200) comprises cutting-off power supply from the power pack to electrical components of the electric vehicle, in the sleep mode of the battery management system (102).

13. The method (200) as claimed in claim 8, wherein the method (200) comprises receiving a signal from the charger (104) when the charger (104) is powered up and a charging cable of the charger (104) is connected to the electric vehicle for waking up the battery management system (102) from the sleep mode.

14. The method (200) as claimed in claim 8, wherein the method (200) comprises restoring the power supply from the power pack to the electrical components of the electric vehicle.



Dated 25 September 2023

Kumar Tushar Srivastava
IN/PA- 3973

Agent for the Applicant

ABSTRACT

SYSTEM AND METHOD FOR WAKE UP OF ELECTRIC VEHICLE FROM SLEEP MODE

The present disclosure describes a system (100) and a method (200) for wake up of an electric vehicle from a sleep mode. The system (100) comprises a battery management system (102) comprising an auxiliary power supply (102a), wherein the auxiliary power supply (102a) is configured to wake up the battery management system (102) from the sleep mode using a charger (104).

Figure 1



Dated 25 September 2023

Kumar Tushar Srivastava
IN/PA- 3973

Agent for the Applicant