

CLAIMS

1. A method for authenticating an energy storage device, comprising:
receiving a first portion of identification information stored in a data storage attached to the energy storage device, wherein the energy storage device is configured to power a device;
analyzing the first portion of the identification information at least partially based on a device identification of the device; and
updating a second portion of the identification information stored in the data storage attached to the energy storage device based on a result of analyzing the first portion of the identification information.
2. The method of claim 1, wherein the energy storage device is retrieved from an energy-storage-exchange station, and wherein the energy-storage-exchange station is configured to update the identification information stored in the data storage attached to the energy storage device in response to a request.
3. The method of claim 2, wherein updating the identification information includes replacing, by the energy-storage-exchange station, the second portion of the identification information by a universal identifier and updating, by the energy-storage-exchange station, the first portion of the identification information based on the request.
4. The method of claim 2, wherein updating the identification information includes erasing, by the energy-storage-exchange station, the second portion of the identification information and updating, by the energy-storage-exchange station, the first portion of the identification information based on the request.
5. The method of claim 2, wherein the request is sent from a portable device associated with the electric vehicle.
6. The method of claim 2, wherein the request is received by the energy-storage-exchange station from a user input.

7. The method of claim 2, wherein the device is an electric vehicle, and wherein the request is sent from the electric vehicle.

8. The method of claim 2, wherein the request is sent from a server, wherein the server is configured to communicate with a plurality of energy-storage-exchange stations including the energy-storage-exchange station.

9. The method of claim 1, wherein the first portion of the identification information includes a prefix, and wherein the prefix corresponds to a first portion of the device identification of the device.

10. The method of claim 9, wherein the prefix corresponds to a group of devices which the device belongs to.

11. The method of claim 1, wherein the device is an electric vehicle, and wherein updating the second portion of the identification information includes updating, by the electric vehicle, a unique serial number corresponding to the device identification of the electric vehicle.

12. The method of claim 1, wherein the second portion of the identification information includes a universal identifier or a unique serial number.

13. The method of claim 12, wherein in an event that the second portion of the identification information includes the unique serial number of the device, the electric energy storage device is authorized to be charged in an energy-storage-exchange station when the energy-storage-exchange station is operating under a first operational mode.

14. The method of claim 13, wherein in an event that the second portion of the identification information includes the universal identifier of the electric vehicle, the electric energy storage device is not authorized to be charged in an energy-storage-exchange station when the energy-storage-exchange station is operating under the first operational mode.

15. The method of claim 14, wherein, when the energy-storage-exchange station is operating under a second operational mode, the energy-storage-exchange station is configured to update the second portion of the identification information by replacing the second portion of the identification information by a universal identifier.

16. The method of claim 14, wherein, when the energy-storage-exchange station is operating under a second operational mode, the energy-storage-exchange station is configured to update the second portion of the identification information by erasing the second portion of the identification information.

17. A method for operating an electric vehicle, comprising:
receiving, by a processor of the electric vehicle, a first portion of identification information stored in a data storage attached to the energy storage device;
receiving, by the processor of the electric vehicle, a vehicle identification of the electric vehicle;
comparing the first portion of the identification information with the vehicle identification of the electric vehicle;
updating, by the processor of the electric vehicle, a second portion of the identification information stored in the data storage attached to the energy storage device in an event that the first portion of the identification information matches the vehicle identification; and
enabling, by the processor of the electric vehicle, the energy storage device to power the electric vehicle.

18. The method of claim 17, further comprising:
transmitting a signal to a server in an event that the first portion of the identification information does not match the vehicle identification.

19. The method of claim 17, wherein the first portion of the identification information includes a prefix, and wherein the prefix corresponds to the vehicle identification of the electric vehicle.

20. The method of claim 17, wherein the prefix corresponds to a group of electric vehicles which the electric vehicle belongs to.

21. The method of claim 17, wherein updating the second portion of the identification information includes updating a unique serial number corresponding to the vehicle identification of the electric vehicle.

22. A method for operating an energy-storage-exchange station, comprising:
changing, by a processor of the energy-storage-exchange station, an operational mode of the energy-storage-exchange station from a first operational mode to a second operational mode in response to a request;
updating, by the processor of the energy-storage-exchange station, a first portion of identification information stored in a data storage attached to an energy storage device in the energy-storage-exchange station, wherein the first portion of the identification information corresponds to a device identification of a device, and wherein the energy storage device is configured to power the device;
enabling the energy storage device to be removed from the energy-storage-exchange station; and
changing the operational mode of the energy-storage-exchange station from the second operational mode to the first operational mode.

23. The method of claim 22, wherein the first portion of the identification information includes a prefix, and wherein the device is an electric vehicle, and wherein the prefix corresponds to a group of electric vehicles which the electric vehicle belongs to.

24. The method of claim 22, further comprising updating by the processor of the energy-storage-exchange station, a second portion of identification information by replacing the second portion of the identification information by a universal identifier.

25. The method of claim 22, further comprising updating by the processor of the energy-storage-exchange station, a second portion of identification information by erasing the second portion of the identification information.

26. The method of claim 22, wherein in an event that a second portion of the identification information includes a unique serial number of the device, the electric energy storage device is authorized to be charged in the energy-storage-exchange station when the energy-storage-exchange station is operating under the first operational mode.

27. The method of claim 22, wherein in an event that a second portion of the identification information includes a universal identifier of the electric vehicle, the electric energy storage device is not authorized to be charged in the energy-storage-exchange station when the energy-storage-exchange station is operating under the first operational mode.

28. A method for managing an energy-storage-exchange station, comprising:
receiving a request for exchanging a first energy storage device in an electric vehicle;
receiving a vehicle identification of the electric vehicle;
identifying an energy-storage-exchange station based on the request; and
authorizing the energy-storage-exchange station to prepare a second energy storage device by:
storing part of the vehicle identification in a first portion of identification information of the second energy storage device in a data storage attached to the second energy storage device; and
storing a universal identifier corresponds to the vehicle identification of the electric vehicle in a second portion of the identification information of the second energy storage device in the data storage attached to the second energy storage device.

29. The method of claim 28, further comprising receiving a signal to confirm that a unique serial number of the electric vehicle has been stored in the second portion

of the identification information of the second energy storage device in the data storage attached to the second energy storage device.