

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 on the identification information at least partially based on a device identification of the device, wherein analyzing the first portion of the identification information comprises: comparing the first portion of the identification information with the device identification; 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, wherein updating the second portion of the identification information comprises: updating the second portion of the identification information to include a unique serial number corresponding to the device identification of the device when the first portion of the identification information matches a first portion of the device identification.
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 storage 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 an 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 the 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 the second portion of the identification information is updated, by the electric vehicle.

12. The method of claim 1, wherein the second portion of the identification information includes a universal identifier or the 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 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 12, wherein in an event that the second portion of the identification information includes the universal identifier, the energy storage device is not authorized to be charged in an energy-storage-exchange station when the energy-storage-exchange station is operating under a 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 the 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 an energy storage device to include a unique serial number corresponding to the vehicle identification in an event that the first portion of the identification information matches a first portion of the vehicle identification; and
enabling, by the processor of the electric vehicle, the energy storage device to power the electric vehicle in the event that the first portion of the identification information matches the first portion of the vehicle identification.

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 first portion of 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 first portion of the identification information includes a prefix, and wherein the prefix corresponds to a group of electric vehicles which the electric vehicle belongs to.