CLAIMS

1. A system for charging an electric vehicle, the system comprising:

a first charging device and at least one second charging device, each of the first charging device and the at least one second charging device is operable to establish communication with the electric vehicle by exchanging handshake signals therewith via a respective charging port of the electric vehicle; wherein

each of the at least one second charging device is further operable to indicate that it is available for charging the electric vehicle after it unsuccessfully exchanges handshake signals with the electric vehicle; and

the first charging device is further operable to receive charging requirements of the electric vehicle after it successfully exchanges handshake signals with the electric vehicle and allocate the charging requirements among the first charging device and the at least one second charging device.

2. The system for charging an electric vehicle according to Claim 1, wherein each of the at least one second charging device is operable to indicate it is available for charging the electric vehicle by sending a message including its charging device identity (ID) to the first charging device, and wherein the first charging device is operable to maintain a record of charging device IDs that it receives.

3. The system for charging an electric vehicle according to Claim 1 or Claim 2, wherein each of the at least one second charging device is operable to indicate it is available for charging after it further passes an insulation detection test.

4. The system for charging an electric vehicle according to Claim 3, wherein the first charging device is further operable to instruct the at least one second charging device to perform the insulation detection test.

5. The system for charging an electric vehicle according to any one of Claims 1 to 4, wherein each of the at least one second charging device is operable to indicate it is available for charging if it is further ready for charging.

6. The system for charging an electric vehicle according to any one of Claims 1 to 5, wherein the first charging device is further operable to determine average charging requirements for each of the at least one second charging device that is available for charging.

7. The system for charging an electric vehicle according to Claim 6, wherein charging requirements for each of the at least one second charging device is set to a maximum charging capacity associated with the charging device if the average charging requirements exceeds the maximum charging capacity.

8. The system for charging an electric vehicle according to Claim 7, wherein each of the at least one second charging device is further operable to determine it is no longer available for charging the electric vehicle if the average charging requirements is lower than a minimum charging capacity associated with the charging device, and wherein the first charging device is further operable to determine a new average charging requirements for each of the at least one second charging device that is still available for charging if any one of the at least one second charging device is determined to be no longer available for charging.

9. A method for charging an electric vehicle via a plurality of charging devices, the method comprising:

each of the plurality of charging devices establishing communication with the electric vehicle via a respective charging port of the electric vehicle;

identifying, by the plurality of charging devices, a first charging device among the plurality of charging devices that successfully establishes communication with the electric vehicle for receiving charging requirements of the electric vehicle;

receiving charging requirements of the electric vehicle via the first charging device;

allocating the charging requirements among charging devices that are available for charging; and

charging the electric vehicle via the charging devices that are available for charging based on respective allocated charging requirements;

wherein each charging device that unsuccessfully establishes communication with the electric vehicle indicates that it is available for charging the electric vehicle.

10. The method for charging an electric vehicle according to Claim 9, wherein establishing communication comprises exchanging handshake signals.

11. The method for charging an electric vehicle according to Claim 9, wherein the charging devices that are available for charging includes charging devices that further pass an insulation detection test.

12. The method for charging an electric vehicle according to Claim 9 or Claim 11, wherein the charging devices that are available for charging includes charging devices that are further ready for charging.

13. The method for charging an electric vehicle according to any one of Claims 9 to 12, wherein allocating the charging requirements among the plurality of charging devices that are available for charging includes:

determining average charging requirements for each charging device that is available for charging.

14. The method for charging an electric vehicle according to Claim 13, wherein charging requirements for a charging device is set to a maximum charging capacity associated with the charging device if the average charging requirements exceeds the maximum charging capacity.

15. The method for charging an electric vehicle according to Claim 14, wherein a charging device is determined to be no longer available for charging the electric vehicle if the average charging requirements is lower than a minimum charging capacity associated with the charging device, and the method further including determining new average charging requirements for charging devices that are still

available for charging if any one charging device is determined to be no longer available for charging.

16. An electric vehicle comprising:

a battery; and

a plurality of charging ports for charging the battery, at least one of which does not include a communication module associated therewith for exchanging handshake signals with a charging device.

17. The electric vehicle according to Claim 16, wherein only one of the plurality of charging ports has a communication module associated therewith.

18. The electric vehicle according to Claim 17, wherein the electric vehicle is configured to send charging requirements of the battery to a charging device via the charging port having a communication module associated therewith.

19. The electric vehicle according to Claim 18, wherein the battery is configured to be chargeable with each of the charging ports receiving a fraction of the charging requirements.

20. The electric vehicle according to any one of Claims 16 to 19, wherein the communication module is a power line communication (PLC) communication module.