

## ABSTRACT

### EXTERNAL COOLING SYSTEM AND METHOD FOR SEGMENTED BATTERY MODULES MOUNTED WITHIN AN ELECTRIC VEHICLE

5 A system or method for individualized coolant flow to each of a plurality of energy storage devices **10** housed in an electric vehicle. Each energy storage device **10** includes a heat exchanger **11** coupled in thermal conductivity with a segmented battery module **13**. The segmented battery module **13** includes battery cells **13B** and sensors (**13C**, **13D**, and **13E**). The heat exchanger **11** includes an HE flow controller **11C**. Individual sensor information for each energy storage device **10** is collected via the BMU **13A** of each segmented battery module **13**. The charging SCC **22** uses this individual sensor information to calculate the HE flow rate of coolant pumped through each energy storage device's **10** heat exchanger **11** to cool the battery cells **13B** of the energy storage device **10**. Coolant delivered to the heat exchangers **11** is cooled by an external cooling unit **21** of a power source **20** during each charging session.

FIG. 4