

ABSTRACT

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

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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
10 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 internal SCC **16** 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
15 by an internal cooling unit **14** during each charging session, and can also be cooled by the internal cooling unit **14** during motorized operation of the electric vehicle.

FIG. 1