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(19) **United States**(12) **Patent Application Publication****LEE et al.**(10) **Pub. No.: US 2024/0237309 A1**(43) **Pub. Date:****Jul. 11, 2024**(54) **AUTOMOTIVE LIQUID-COOLING COOLER STRUCTURE**(52) **U.S. Cl.**CPC **H05K 7/20872** (2013.01); **B23K 20/122** (2013.01); **B23K 2101/14** (2018.08)(71) Applicant: **AMULAIRE THERMAL TECHNOLOGY, INC.**, New Taipei City (TW)

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ABSTRACT(72) Inventors: **Kuo-Wei LEE**, New Taipei City (TW);
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An automotive liquid-cooling cooler structure is provided, which includes: a liquid-cooling cooler body, an outer frame, and a reserved structure. The liquid-cooling cooler body is located in a frame opening of the outer frame, the reserved structure is located at a gap between the liquid-cooling cooler body and the outer frame, and the reserved structure is configured for joining the liquid-cooling cooler body to the outer frame by friction stir welding.

