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(54) **COMPOSITE CATHODE ACTIVE MATERIAL, CATHODE AND LITHIUM BATTERY CONTAINING COMPOSITE CATHODE ACTIVE MATERIAL AND PREPARATION METHOD THEREOF**

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**ABSTRACT**

A composite cathode active material, a method of preparing the composite cathode active material, and a cathode and a lithium battery each including the composite cathode active material are provided. The composite cathode active material includes a core including a lithium transition metal oxide and a shell on the surface of the core, wherein the shell comprises a conductive carbon-based composite including a first metal oxide represented by formula  $M_aO_b$  ( $0 \leq a \leq 3$ ,  $0 < b < 4$ , wherein  $a$  is 1, 2, or 3, and  $b$  is not an integer) and a carbonaceous material, and a lithium fluoride-based compound, wherein the first metal oxide is within a matrix of the carbonaceous material, and  $M$  is one or more metals selected from among Group 2 to Group 13, Group 15, and Group 16 of the Periodic Table.

