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CHOI et al.(10) **Pub. No.: US 2023/0231113 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **CATHODE ACTIVE MATERIAL
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BATTERY, CATHODE ACTIVE MATERIAL
FOR LITHIUM SECONDARY BATTERY AND
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(57)

ABSTRACT

A cathode active material precursor for a lithium secondary battery is provided according to embodiments of the present invention. The cathode active material precursor for a lithium secondary battery includes a core including a first transition metal composite hydroxide, and a shell which is formed on the core and includes a second transition metal composite hydroxide in which the first transition metal composite hydroxide is doped with a doping metal including at least one of Group 4 to Group 12 metals, wherein the cathode active material precursor has a particle size distribution degree of 0.8 to 1.6 defined by Equation 1. Thereby, it is possible to suppress capacity degradation of the secondary battery due to doping while improving the structural stability of the cathode active material precursor.

