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(54) **UNIFORMLY MODIFIED CATHODE MATERIAL FOR SILICON-BASED LITHIUM ION BATTERY, PREPARATION METHOD THEREFOR AND APPLICATION THEREOF**

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(57) **ABSTRACT**

The structure of cathode material for a silicon-based lithium ion battery is that carbon atoms are uniformly dispersed and distributed in a silicon (II) oxide matrix on an atomic scale. The average particle diameter D50 of the particles in the cathode material for the silicon-based lithium ion battery is 1 nm to 100 μm, and the specific surface area is 0.5 m^2/g to 40 m^2/g; and the mass of the carbon atoms accounts for 0.1% to 40% of the mass of the silicon (II) oxide matrix. In the disclosure, a carbon-containing gas source is introduced during the preparation process of silicon (II) oxide, and the distribution of carbon atoms in the silicon (II) oxide is bulk phase distribution, the cathode material has carbon bulk phase doping, which improves the electrical conductivity of the material and the cycling stability of lithium ion batteries.