What is claimed is:

1. A preparation method for a lithium iron phosphate precursor, wherein the preparation method comprises the following steps:

S1. reacting a mixture of an iron source and a phosphoric acid solution, and grinding after the reaction is completed to obtain a product A, and

reacting a mixture of an organic acid solution, a lithium source and a carbon source, and obtaining a product B after the reaction is completed, wherein the preparation order of the product A and the product B is not limited; the mass percentage concentration of phosphoric acid in the phosphoric acid solution is 20% to 85%; the mass percentage concentration of an organic acid in the organic acid solution is 55% to 72%; the organic acid in the organic acid solution is one of a carboxylic acid compound and/or ascorbic acid, the carboxylic acid compound is one or more of formic acid, acetic acid, oxalic acid, citric acid, tartaric acid and malic acid;

S2. grinding a mixture of the product A and the product B to obtain a lithium iron phosphate precursor, the lithium iron phosphate precursor has a solid content of 50% or more; the lithium iron phosphate precursor has a particle size of 170 to 250 nm.

2. The preparation method for a lithium iron phosphate precursor according to claim 1, wherein the preparation method satisfies one or more of the following conditions:

(1) the iron source is a compound containing an iron element and an oxygen element;

(2) the iron source has a mesh number of 200 to 1000 mesh.

3. The preparation method for a lithium iron phosphate precursor according to claim 2, wherein the iron source is a compound containing an iron element and an oxygen element;

and/or, the iron source has a mesh number of 200 to 500 mesh.

4. The preparation method for a lithium iron phosphate precursor according to claim 2, wherein the iron source is one or more of an iron powder, ferric oxide, ferriferrous oxide and ferric nitrate;

and/or, the iron source has a mesh number of 250 mesh or 300 mesh.

5. The preparation method for a lithium iron phosphate precursor according to claims 3 or 4, wherein the iron powder has an iron content of 95 wt% or more;

and/or, the iron powder is one or more of a primary reduced iron powder, a secondary reduced iron powder, a carbonyl reduced iron powder and an electrolytic iron powder;

and/or, the ferric oxide has a purity of 95 wt% or more;

and/or, the ferriferrous oxide has a purity of 95 wt% or more.

6. The preparation method for a lithium iron phosphate precursor according to claims 3 or 4, wherein the iron powder has an iron content of 99 wt% or more;

and/or, the ferric oxide has a purity of 99 wt% or more;

and/or, the ferriferrous oxide has a purity of 99 wt% or more.

7. The preparation method for a lithium iron phosphate precursor according to claims 3 or 4, wherein the iron powder has an iron content of 99.5 wt% or more;

and/or, the ferric oxide has a purity of 99.5 wt% or more;

and/or, the ferriferrous oxide has a purity of 99.5 wt% or more.

8. The preparation method for a lithium iron phosphate precursor according to claims 3 or 4, wherein the iron powder has an iron content of 99.7 wt% or more.

9. The preparation method for a lithium iron phosphate precursor according to claim 1, wherein the preparation method satisfies one or more of the following conditions:

(1) the mass percentage concentration of phosphoric acid in the phosphoric acid solution is 49%, 59% or 62%;

(2) the phosphoric acid in the phosphoric acid solution is a technical grade phosphoric acid, a food grade phosphoric acid, an electric grade phosphoric acid or an electronic grade phosphoric acid;

(3) a reaction temperature for the mixture of an iron source and a phosphoric acid solution is 20 to 95℃;

(4) in the mixture of an iron source and a phosphoric acid solution, a molar ratio of the iron element to the phosphoric acid is (0.94 - 1.05) : 1.

10. The preparation method for a lithium iron phosphate precursor according to claim 1, wherein a reaction temperature for the mixture of an iron source and a phosphoric acid solution is 30 to 90℃;

and/or, in the mixture of an iron source and a phosphoric acid solution, a molar ratio of the iron element to the phosphoric acid is (0.96 - 1.0) : 1.

11. The preparation method for a lithium iron phosphate precursor according to claim 1, wherein a reaction temperature for the mixture of an iron source and a phosphoric acid solution is 35℃, 45℃ or 55℃;

and/or, in the mixture of an iron source and a phosphoric acid solution, a molar ratio of the iron element to the phosphoric acid is 0.98 : 1.

12. The preparation method for a lithium iron phosphate precursor according to claim 1, wherein the preparation method satisfies one or more of the following conditions:

(1) the grinding is performed by means of a sand mill;

(2) the product A has a viscosity of 8,000 to 20,000 cps;

(3) the mass percentage concentration of an organic acid in the organic acid solution is 62%;

(4) the organic acid is citric acid and/or oxalic acid, or malic acid and/or tartaric acid.

13. The preparation method for a lithium iron phosphate precursor according to claim 12, wherein the sand mill is a vertical sand mill, a horizontal sand mill, a basket sand mill or a double-cone rod sand mill;

and/or, the grinding beads used in the sand mill have a particle size of 0.1 to 3.0 mm;

and/or, the grinding beads used in the sand mill are zirconium oxide beads;

and/or, the product A has a viscosity of 10,000 to 20,000 cps.

14. The preparation method for a lithium iron phosphate precursor according to claim 12, wherein the grinding beads used in the sand mill have a particle size of 0.3 mm or 0.4 mm;

and/or, the product A has a viscosity off 15,000 cps.

15. The preparation method for a lithium iron phosphate precursor according to claim 1, wherein the preparation method satisfies one or more of the following conditions:

(1) the lithium source is one or more of lithium hydroxide monohydrate, lithium carbonate, lithium dihydrogen phosphate, lithium phosphate and lithium acetate;

(2) the molar ratio of lithium element in the lithium source to phosphoric acid in the phosphoric acid solution is 0.98 to 1.05;

(3) the carbon source comprises one or more of glucose, sucrose, starch, phenolic resin, cyclodextrin, polyethylene, polyethylene glycol and polyvinyl alcohol;

(4) the addition amount of the carbon source is 1% to 60% by mass of the iron source;

(5) a reaction temperature for the mixture of an organic acid, a lithium source and a carbon source is 20 to 95℃;

(6) the lithium iron phosphate precursor has a particle size of 200 nm or 220 nm.

16. The preparation method for a lithium iron phosphate precursor according to claim 1, wherein the lithium source is lithium hydroxide monohydrate and/or lithium acetate;

and/or, the molar ratio of lithium element in the lithium source to phosphoric acid in the phosphoric acid solution is 1.02, 1.03 or 1.04;

and/or, the carbon source is a mixture of polyvinyl alcohol, cyclodextrin and polyethylene glycol;

and/or, the addition amount of the carbon source is 5% to 50% by mass of the iron source;

and/or, reaction temperature for the mixture of an organic acid, a lithium source and a carbon source is 30 to 90℃.

17. The preparation method for a lithium iron phosphate precursor according to claim 1, wherein the addition amount of the carbon source is 10% to 40% by mass of the iron source;

and/or, reaction temperature for the mixture of an organic acid, a lithium source and a carbon source is 35℃, 40℃ or 45℃.

18. The preparation method for a lithium iron phosphate precursor according to claim 15, wherein the lithium carbonate is a technical grade lithium carbonate or a battery grade lithium carbonate.

19. A lithium iron phosphate precursor, wherein the lithium iron phosphate precursor is prepared by a preparation method for a lithium iron phosphate precursor according to any one of claims 1 to 18.

20. A preparation method for lithium iron phosphate, wherein the preparation method comprises the following step: subjecting the lithium iron phosphate precursor according to claim 19 to spray drying, calcinating and crushing.

21. A lithium iron phosphate, wherein the lithium iron phosphate is prepared by a preparation method for lithium iron phosphate according to claim 20.

22. Use of a lithium iron phosphate according to claim 21 in the preparation of a positive electrode material for a lithium ion battery.