Claims:

1. A process for producing a $LnM_{2-y}X_yCu_3O_x$ and/or $Ln_2M_{2-y}X_yCuO_x$ high-temperature superconductive powder, the process comprising:

i) providing an aqueous solution of Ln, M, X and Cu and at least one mineral acid;

ii) adding at least one sequestrating agent and, optionally, at least one dispersant to the solution to form a precipitate;

iii) recovering the precipitate from the solution; and

iv) heating the precipitate in a flow of oxygen to form the $LnM_{2-y}X_yCu_3O_x$ and/or $Ln_2M_{2-y}X_yCuO_x$ powder,

wherein X is selected from the group consisting of Mg, Se, Sr, Ca and mixtures of two or more thereof,

wherein Ln is a rare earth element, preferably Y, Ce, Dy, Er, Gd, La, Nd, Pr, Sm, Sc, Yb, or a mixture of two or more thereof,

wherein M is selected from Ca, Sr, and Ba; and

wherein y is from 0.1 to 0.8.

2. The process according to claim 1, wherein the powder has a morphology selected from the group consisting of cigars, spiral, spires, rods, tubes, cylinders, agglomerates and flat “cracker” shaped crystalline agglomerates.

3. The process according to claim 2, wherein the process further comprises:

v) sintering the powder at a temperature of from 930 °C to 1010°C to form a sintered high-temperature superconductive material.

4. The process according to claim 1, wherein X is Mg.

5. The process according to claim 1, wherein Ln is Y and/or M is Ba.