

WHAT IS CLAIMED IS:

1. A metal trap comprising pre-formed microspheres impregnated with an organic acid salt of a rare earth element.
2. The metal trap of Claim 1, wherein the pre-formed microspheres comprise kaolinite, montmorillonite, bentonite, attapulgite, kaolin, amorphous kaolin, metakaolin, mullite, spinel, hydrous kaolin, calcined hydrous kaolin, clay, or a mixture of any two or more thereof.
3. The metal trap of Claim 2, wherein the pre-formed microspheres comprise calcined hydrous kaolin.
4. The metal trap of any one of Claims 1-3, comprising at least 1 wt. % of the rare earth element, on an oxide basis.
5. The metal trap of any one of Claims 1-4, wherein the rare earth element is lanthanum, cerium, ytterbium, gadolinium, yttrium, neodymium, or a mixture of any two or more thereof.
6. The metal trap of any one of Claims 1-5, wherein the rare earth element is lanthanum, cerium, or a mixture thereof.
7. The metal trap of any one of Claims 1-6, wherein the organic acid salt is a formate, acetate, a propionate salt, or a mixture thereof.
8. The metal trap of Claim 7, wherein the organic acid salt is a formate salt.
9. The metal trap of Claim 7, wherein the organic acid salt of the rare earth element is lanthanum formate, lanthanum acetate, cerium formate, cerium acetate, or a mixture of any two or more thereof.
10. The metal trap of any one of the preceding Claims, formed by contacting the pre-formed microspheres with the reaction product of an alkaline salt of the rare earth element and an organic acid.

11. The metal trap of any one of Claims 1-10, wherein the pre-formed microspheres have a particle size of from about 40-150 microns.
12. The metal trap of any one of Claims 1-10, wherein the pre-formed microspheres have a particle size of from about 60-100 microns.
13. The metal trap of any one of Claims 1-12, wherein the pre-formed microspheres have a pore volume of at least about 0.10 cm³/gram.
14. A fluid catalytic cracking (FCC) catalyst composition comprising:
 - a zeolite component comprising a first microsphere; and
 - a non-zeolitic component comprising pre-formed second microspheres, separate from the first microsphere, and impregnated with an organic acid salt of a rare earth element.
15. The FCC catalyst composition of Claim 14, wherein the pre-formed second microspheres comprise kaolinite, montmorillonite, bentonite, attapulgite, kaolin, amorphous kaolin, metakaolin, mullite, spinel, hydrous kaolin, calcined hydrous kaolin, clay, or a mixture of any two or more thereof.
16. The FCC catalyst composition of any one of Claims 14 or 15 wherein the rare earth element is lanthanum, cerium, ytterbium, gadolinium, yttrium, neodymium, or a mixture of any two or more thereof.
17. The FCC catalyst composition of any one of Claims 14-16, wherein the rare earth element is lanthanum, cerium, or a mixture thereof.
18. The FCC composition of any one of Claims 14-17, wherein the organic acid salt is a formate, an acetate, or a propionate salt, or a mixture of any two or more thereof.
19. The FCC composition of Claim 18, wherein the organic acid salt is a formate salt.
20. The FCC composition of Claim 18, wherein the organic acid salt of the rare earth element is lanthanum formate, lanthanum acetate, cerium formate, cerium acetate, or a mixture of any two or more thereof.

21. The FCC catalyst composition of any one Claims 14-20, wherein the rare earth element is present in a range of 0.1 wt% to about 20.0 wt% on an oxide basis.
22. A method of preparing a metal trap, the method comprising contacting pre-formed second microspheres with an organic acid salt of a rare earth element.
23. The method of Claim 22, wherein the contacting pre-formed second microspheres with the organic acid salt of a rare earth element is selected from the group consisting of coating, spray drying, and impregnating.
24. The method of Claim 22, wherein the organic acid salt of the rare earth element is comprised in an aqueous medium comprising the organic acid.
25. The method of any one of Claims 22-24, further comprising preparing the organic salt of the rare earth element by reacting an alkaline salt of the rare earth element with the organic acid.
26. The method of Claim 25, wherein the alkaline salt of the rare earth element is a carbonate salt.
27. The method of any one of Claims 22-26, wherein the rare earth element is lanthanum, cerium, ytterbium, gadolinium, yttrium, neodymium, or a mixture of any two or more thereof.
28. The method of Claim 27, wherein the rare earth element is lanthanum, cerium, or a mixture thereof.
29. The method of Claim 25, wherein the organic acid is formic acid, acetic acid, propionic acid, or a mixture of any two or more thereof.
30. The method of Claim 29, wherein the organic acid is formic acid.
31. The method of Claim 29, wherein the organic acid salt of the rare earth element is lanthanum formate, lanthanum acetate, cerium formate, cerium acetate, or a mixture of any two or more thereof.

32. A method of preparing a FCC catalyst composition according to Claim 14, comprising blending the zeolite component and the non-zeolitic component.
33. The method of Claim 32, wherein the zeolite component is prepared by a method comprising:
pre-forming a precursor first microsphere comprising a non-zeolitic material and alumina; and
in situ crystallizing a zeolite on the pre-formed first microsphere to provide the zeolite component.
34. A method of cracking a hydrocarbon feed under fluid catalytic cracking conditions, the method comprising contacting the hydrocarbon feed with the FCC catalyst composition of Claim 14.
35. A method of passivating and/or trapping at least one metal contaminant from a hydrocarbon oil feed in an FCC unit bed, the method comprising contacting the hydrocarbon oil feed with the FCC catalyst composition of Claim 14.
36. The method according to Claim 34, wherein the at least one metal contaminant is vanadium.
37. A fluid catalytic cracking (FCC) catalyst composition comprising:
a non-cracking component comprising a first microsphere; and
a non-zeolitic component comprising pre-formed second microspheres, separate from the first microsphere, and impregnated with an organic acid salt of a rare earth element.
38. The FCC catalyst composition of Claim 37, wherein the pre-formed second microspheres comprise kaolinite, montmorillonite, bentonite, attapulgite, kaolin, amorphous kaolin, metakaolin, mullite, spinel, hydrous kaolin, calcined hydrous kaolin, clay, or a mixture of any two or more thereof.

39. The FCC catalyst composition of any one of Claims 37 or 38 wherein the rare earth element is lanthanum, cerium, ytterbium, gadolinium, yttrium, neodymium, or a mixture of any two or more thereof.
40. The FCC catalyst composition of any one of Claims 37-39, wherein the rare earth element is lanthanum, cerium, or a mixture thereof.
41. The FCC composition of any one of Claims 37-40, wherein the organic acid salt is a formate, an acetate, or a propionate salt, or a mixture of any two or more thereof.
42. The FCC composition of Claim 41, wherein the organic acid salt is a formate salt.
43. The FCC composition of Claim 41, wherein the organic acid salt of the rare earth element is lanthanum formate, lanthanum acetate, cerium formate, cerium acetate, or a mixture of any two or more thereof.
44. The FCC catalyst composition of any one Claims 37-43, wherein the rare earth element is present in a range of 0.1 wt% to about 20.0 wt% on an oxide basis.
45. A method of preparing a FCC catalyst composition according to Claim 37, comprising blending the non-cracking component and the non-zeolitic component.