We claim:

1. A process for reducing the amount of nitrogen oxides (NO_x) discharged to atmosphere from a fluid catalytic cracking unit comprising a regenerator and a collecting means for collecting and supporting catalyst particles, wherein a flue gas containing NO_x is discharged from the regenerator and is then passed to the collecting means, said process comprising:

(a) adding a catalyst to the flue gas prior to entering the collecting means;

(b) precipitating the catalyst in the collecting means to form a catalyst bed in the collecting means;

(c) adding ammonia or an ammonia precursor to the flue gas prior to entering the collecting means, to the flue gas within the collecting means, or both;

(d) reacting NO_x in the flue gas with the ammonia or ammonia precursor at a temperature ranging from 200°C to 800°C in the presence of the catalyst bed to reduce the amount of NO_x in the flue gas; and

(e) discharging the flue gas containing a reduced amount of NO_x to atmosphere,

wherein the catalyst is one or more supported transition or lanthanide metal catalysts.

2. The process of claim **1** wherein the flue gas is cooled prior to entering the collecting means.

3. The process of claim **1** wherein the collecting means is an electrostatic precipitator.

4. The process of claim **1** wherein the collecting means is a bag filter.

5. The process of claim **1** wherein the collecting means is a sintered metal filter.

6. The process of claim **1** wherein the collecting means is a combination of a fast fluidized bed and a cyclone.

7. The process of claim **1** wherein the supported transition or lanthanide metal catalyst is a supported platinum catalyst.

8. The process of claim **7** wherein the supported platinum catalyst comprises platinum and an inorganic oxide.

9. The process of claim **8** wherein the supported platinum catalyst comprises platinum on alumina.

10. The process of claim **1** wherein the supported transition or lanthanide metal catalyst comprises (a) vanadium, tungsten, copper, iron, cerium, or mixtures thereof, and (b) a hydrotalcite, a clay, or a zeolite.

11. The process of claim **10** wherein the supported transition or lanthanide metal catalyst comprises copper and a hydrotalcite.

12. The process of claim **1** wherein NO_x in the flue gas is reacted with the ammonia at a temperature ranging from 200°C to 500°C.

13. The process of claim **1** wherein the catalyst has a mean particle size of 10 μm to 100 μm.

14. A process for reducing the amount of nitrogen oxides (NO_x) discharged to atmosphere from a combustion process comprising a combustion unit and a collecting means for collecting and supporting catalyst particles, wherein a flue gas containing NO_x is discharged from the combustion unit and is then passed to the collecting means, said process comprising:

(a) adding a catalyst to the flue gas prior to entering the collecting means;

(b) precipitating the catalyst in the collecting means to form a catalyst bed in the collecting means;

(c) adding ammonia or an ammonia precursor to the flue gas prior to entering the collecting means, to the flue gas within the collecting means, or both;

(d) reacting NO_x in the flue gas with the ammonia or ammonia precursor at a temperature ranging from 200°C to 800°C in the presence of the catalyst bed to reduce the amount of NO_x in the flue gas; and

(e) discharging the flue gas containing a reduced amount of NO_x to atmosphere,

wherein the catalyst is one or more supported transition or lanthanide metal catalysts.

15. The process of claim **14** wherein the combustion unit is a coal combustion unit, a fuel oil combustion unit, a wood product combustion unit, a fluid catalytic cracking unit, a fired heater, an ethylene heater, or a hydrogen heater.

We claim:

1. A process for reducing the amount of nitrogen oxides (NO_x) discharged to atmosphere from a fluid catalytic cracking unit comprising a regenerator and a collecting means for collecting and supporting catalyst particles, wherein a flue gas containing NO_x is discharged from the regenerator and is then passed to the collecting means, said process comprising:

(a) adding a catalyst to the flue gas prior to entering the collecting means;

(b) precipitating the catalyst in the collecting means to form a catalyst bed in the collecting means;

(c) adding ammonia or an ammonia precursor to the flue gas prior to entering the collecting means, to the flue gas within the collecting means, or both;

(d) reacting NO_x in the flue gas with the ammonia or ammonia precursor at a temperature ranging from 200° C. to 800° C. in the presence of the catalyst bed to reduce the amount of NO_x in the flue gas; and

(e) discharging the flue gas containing a reduced amount of NO_x to atmosphere,

wherein the catalyst is one or more supported transition or lanthanide metal catalysts and the collecting means is an electrostatic recipitator or a combination of a fast fluidized bed and a cyclone.

2. The process of claim 1 wherein the flue gas is cooled prior to entering the collecting means.

3. The process of claim 1 wherein the supported transition or lanthanide metal catalyst is a supported platinum catalyst.

4. The process of claim 3 wherein the supported platinum catalyst comprises platinum and an inorganic oxide.

5. The process of claim 4 wherein the supported platinum catalyst comprises platinum on alumina.

6. The process of claim 1 wherein the supported transition or lanthanide metal catalyst comprises (a) vanadium, tungsten, copper, iron, cerium, or mixtures thereof, and (b) a hydrotalcite, a clay, or a zeolite.

7. The process of claim 6 wherein the supported transition or lanthanide metal catalyst comprises copper and a hydrotalcite.

8. The process of claim 1 wherein NO_x in the flue gas is reacted with the ammonia at a temperature ranging from 200° C. to 500° C.

9. The process of claim 1 wherein the catalyst has a mean particle size of 10 μm to 100 μm.

10. A process for reducing the amount of nitrogen oxides (NO_x) discharged to atmosphere from a fluid catalytic cracking unit comprising a regenerator and a collecting means for collecting and supporting catalyst particles, wherein a flue gas containing NO_x is discharged from the regenerator and is then passed to the collecting means, said process comprising:

(a) adding a catalyst to the flue gas prior to entering the collecting means;

(b) precipitating the catalyst in the collecting means to form a catalyst bed in the collecting means;

(c) adding ammonia or an ammonia precursor to the flue gas prior to entering the collecting means, to the flue gas within the collecting means, or both;

(d) reacting NO_x in the flue gas with the ammonia or ammonia precursor at a temperature ranging from 200° C. to 800° C. in the presence of the catalyst bed to reduce the amount of NO_x in the flue gas; and

(e) discharging the flue gas containing a reduced amount of NO_x to atmosphere,

wherein the catalyst comprises copper and a hydrotalcite or the catalyst is a supported platinum catalyst.

11. The process of claim 10 wherein the flue gas is cooled prior to entering the collecting means.

12. The process of claim 10 wherein the collecting means is an electrostatic precipitator, a bag filter, a sintered metal filter, or a combination of a fast fluidized bed and a cyclone.

13. The process of claim 10 wherein the supported platinum catalyst comprises platinum and an inorganic oxide.

14. The process of claim 13 wherein the supported platinum catalyst comprises platinum on alumina.

15. The process of claim 10 wherein NO_x in the flue gas is reacted with the ammonia at a temperature ranging from 200° C. to 500° C.

16. The process of claim 10 wherein the catalyst has a mean particle size of 10 μm to 100 μm.

17. A process for reducing the amount of nitrogen oxides (NO_x) discharged to atmosphere from a fluid catalytic cracking unit comprising a regenerator and a collecting means for collecting and supporting catalyst particles, wherein a flue gas containing NO_x is discharged from the regenerator and is then passed to the collecting means, said process comprising:

(a) adding a catalyst to the flue gas prior to entering the collecting means;

(b) precipitating the catalyst in the collecting means to form a catalyst bed in the collecting means;

(c) adding ammonia or an ammonia precursor to the flue gas prior to entering the collecting means, to the flue gas within the collecting means, or both;

(d) reacting NO_x in the flue gas with the ammonia or ammonia precursor at a temperature ranging from 200° C. to 800° C. in the presence of the catalyst bed to reduce the amount of NO_x in the flue gas; and

(e) discharging the flue gas containing a reduced amount of NO_x to atmosphere,

wherein the catalyst is one or more supported transition or lanthanide metal catalysts and the flue gas is cooled prior to entering the collecting means.

18. The process of claim 17 wherein the collecting means is an electrostatic precipitator, a bag filter, a sintered metal filter, or a combination of a fast fluidized bed and a cyclone.

19. The process of claim 17 wherein the supported transition or lanthanide metal catalyst comprises (a) vanadium, tungsten, copper, iron, cerium, or mixtures thereof, and (b) a hydrotalcite, a clay, or a zeolite.

20. The process of claim 17 wherein the catalyst has a mean particle size of 10 μm to 100 μm.