WHAT IS CLAIMED IS:

1. An apparatus for controlling an ammonia fuel cell vehicle, the apparatus comprising:

an ammonia tank configured to store ammonia;

a cracker configured to decomposes the ammonia transferred from the ammonia tank into hydrogen; and

an apparatus controller configured to control at least one of an ammonia supply amount to be supplied to the cracker and conditions of the cracker,

wherein the apparatus controller is configured to:

calculate a predicted hydrogen consumption amount based on driving information and battery information; and

control at least one of the ammonia supply amount and the conditions of the cracker based on the predicted hydrogen consumption amount,

wherein the battery information includes information about battery charge level,

wherein the apparatus controller is configured to:

calculate a temporary predicted hydrogen consumption amount based on the driving information;

when the battery charge level is greater than or equal to an overcharge threshold value, reduce the temporary predicted hydrogen consumption amount by a first predetermined amount and output the reduced temporary predicted hydrogen consumption amount as the predicted hydrogen consumption amount; and

when the battery charge level is less than or equal to a discharge threshold value, increase the temporary predicted hydrogen consumption amount by a second predetermined amount and output the increased temporary predicted hydrogen consumption amount as the predicted hydrogen consumption amount.

2. The apparatus according to claim 1, wherein the apparatus controller comprises a predicted hydrogen consumption amount calculation processor, an ammonia supply amount control processor, and a cracker condition control processor.

3. The apparatus according to claim 2, wherein the driving information comprises city driving section information, highway driving section information and traffic congestion information, and

the predicted hydrogen consumption amount calculation processor calculates the predicted hydrogen consumption amount based on at least one of the city driving section information, the highway driving section information and the traffic congestion information.

4. The apparatus according to claim 2, wherein the ammonia supply amount control processor is configured to:

calculate an ammonia supply amount required to secure the calculated predicted hydrogen consumption amount; and

control at least one of a pipe flow and a valve opening between

the ammonia supply and the cracker so as to supply the calculated ammonia supply amount to the cracker.

5. The apparatus according to claim 2, wherein the cracker condition control processor controls internal conditions of the cracker so that an amount of ammonia decomposed into hydrogen in the cracker does not exceed the predicted hydrogen consumption amount.

6. The apparatus according to claim 2, wherein the predicted hydrogen consumption amount calculation processor is configured to:

confirm at least one of the driving information and the battery information at a predetermined periodic interval, and

update the predicted hydrogen consumption amount based on at least one of the driving information and the battery information.

7. The apparatus according to claim 1, further comprising a display configured to display a graphic image,

wherein the apparatus controller is configured to:

display icons to select automatic control or manual control of the ammonia supply amount by a user on the display;

when receiving an automatic control input, automatically control the ammonia supply amount to provide sufficient ammonia to the cracker to make the predicted hydrogen consumption amount; and

when receiving a manual control input, control the ammonia

supply amount according to an input from the user.

8. The apparatus according to claim 1, further comprising an input device configured to sense internal status information of the ammonia tank,

wherein the apparatus controller calculates the predicted hydrogen consumption amount based on at least one of the driving information, the battery information, and the sensed internal status information.

9. The apparatus according to claim 8, wherein the internal status information comprises at least one of temperature, pressure, and humidity inside the ammonia tank.

10. A method for controlling an ammonia fuel cell vehicle which is performed by an apparatus for controlling an ammonia fuel cell vehicle, the method comprising:

storing ammonia in an ammonia tank;

decomposing the ammonia transferred from the ammonia tank to a cracker into hydrogen;

controlling at least one of an ammonia supply amount to be supplied to the cracker and conditions of the cracker;

calculating a predicted hydrogen consumption amount based on driving information and battery information; and

controlling at least one of the ammonia supply amount and

the conditions of the cracker based on the calculated predicted hydrogen consumption amount,

wherein the battery information includes information about battery charge level,

wherein the calculating of the predicted hydrogen consumption amount includes:

calculating a temporary predicted hydrogen consumption amount based on the driving information;

when the battery charge level is greater than or equal to an overcharge threshold value, reducing the temporary predicted hydrogen consumption amount by a first predetermined amount and outputting the reduced temporary predicted hydrogen consumption amount as the predicted hydrogen consumption amount; and

when the battery charge level is less than or equal to a discharge threshold value, increasing the temporary predicted hydrogen consumption amount by a second predetermined amount and outputting the increased temporary predicted hydrogen consumption amount as the predicted hydrogen consumption amount.

11. The method according to claim 10, wherein the predicted hydrogen consumption amount stabilizes an ammonia decomposition rate.

12. The method according to claim 10, wherein the predicted hydrogen consumption amount is calculated based on producing

hydrogen for only what the vehicle needs during driving.

13. The method according to claim 10, wherein the predicted hydrogen consumption amount prevents a battery from being overcharged.

14. The method according to claim 10, wherein the predicted hydrogen consumption amount prevents unnecessary ammonia decomposition by the cracker.

15. The method according to claim 10, wherein the predicted hydrogen consumption amount is calculated based on at least one of city driving section information, highway driving section information and traffic congestion information.

16. The method according to claim 10, further comprising:

calculating an ammonia supply amount required to secure the calculated predicted hydrogen supply amount; and

controlling at least one of a pipe flow and a valve opening between the ammonia supply and the cracker so as to supply the calculated ammonia supply amount to the cracker.

17. The method according to claim 10, further comprising:

controlling internal conditions of the cracker so that an amount of ammonia decomposed into hydrogen in the cracker does not

exceed the predicted hydrogen consumption amount.

18. The method according to claim 10, further comprising:

displaying icons to a user for selection of automatic control or manual control of the ammonia supply amount;

when receiving an automatic control input, automatically controlling the ammonia supply amount to provide sufficient ammonia to the cracker to make the predicted hydrogen consumption amount; and

when receiving a manual control input, controlling the ammonia supply amount according to an input from the user.

19. The method according to claim 10, further comprising:

sensing internal status information of the ammonia tank; and

calculating the predicted hydrogen consumption amount based on the sensed internal status information.

20. An ammonia fuel cell vehicle, comprising:

an ammonia tank;

a cracker for decomposing the ammonia; and

a fuel cell for producing electricity from hydrogen supplied from the cracker;

a battery receiving charge from the fuel cell; and

a control configured to:

calculate a predicted hydrogen consumption amount based on driving information and battery information;

monitor a charge amount of the battery; and

control at least one of the ammonia supply amount based on the calculated predicted hydrogen consumption amount and the charge amount of the battery,

wherein the battery information includes information about battery charge level,

wherein the control is configured to:

calculate a temporary predicted hydrogen consumption amount based on the driving information;

when the battery charge level is greater than or equal to an overcharge threshold value, reduce the temporary predicted hydrogen consumption amount by a first predetermined amount and output the reduced temporary predicted hydrogen consumption amount as the predicted hydrogen consumption amount; and

when the battery charge level is less than or equal to a discharge threshold value, increase the temporary predicted hydrogen consumption amount by a second predetermined amount and output the increased temporary predicted hydrogen consumption amount as the predicted hydrogen consumption amount.