WHAT IS CLAIMED IS:

1. A white LED lighting device, characterized in that the white LED lighting device comprises internally packed blue, violet or ultraviolet LED chips, and a luminescence coating made of a combination of blue afterglow luminescence material A and yellow luminescence material B, a weight ratio between the blue afterglow luminescence material A and the yellow luminescence material B being 10~70wt%: 30~90wt%.

2. The white LED lighting device according to claim 1, wherein a weight ratio between the blue afterglow luminescence material A and the yellow luminescence material B is 20~50wt%: 50~80wt%.

3. The white LED lighting device according to claim 1 or 2, wherein the blue afterglow luminescence material A has a peak light-emitting wavelength of 440~490 nm.

4. The white LED lighting device according to claim 3, wherein the blue afterglow luminescence material A is at least one of $Sr_4Al_{14}O_{25}:Eu^{2+},Dy^{3+}$, $Sr_2MgSi_2O_7:Eu^{2+},Dy^{3+}$, $CaS:Bi^{3+},Na^{+}$, $CaS:Cu^{+},Na^{+}$ and $CaSrS:Bi^{3+}$.

5. The white LED lighting device according to claim 1 or 2, wherein the yellow luminescence material B has a peak light-emitting wavelength of 520~580 nm.

6. The white LED lighting device according to claim 5, wherein the yellow luminescence material B is a yellow luminescence material with or without an afterglow phenomenon, or a combination thereof.

7. The white LED lighting device according to claim 5, wherein the yellow luminescence material B is at least one of $Y_2O_3{\bullet}Al_2O_3{\bullet}SiO_2$: Ce•B•Na•P, $Y_2O_2S:Mg,Ti$, $Sr_3SiO_5:Eu^{2+},Dy^{3+}$, $Ca_2MgSi_2O_7:Eu^{2+},Dy^{3+}$, $CaS:Sm^{3+}$, YAG:Ce and TAG: Ce.

8. The white LED lighting device according to any of claims 1 to 7, wherein the luminescence coating is formed by mixing the blue afterglow luminescence material A and the yellow luminescence material B.

9. The white LED lighting device according to any of claims 1 to 7, wherein the luminescence coating is a coating of the blue afterglow luminescence material A , a coating of the yellow luminescence material B.

10. The white LED lighting device according to any of claims 1 to 9, wherein the power frequency of the white LED lighting device is not less than 50 Hz.

CLAIMS

1. A white LED lighting device, characterized in that

the white LED lighting device comprises blue, violet or ultraviolet LED chips and luminescence material, the luminescence material being a combination of blue afterglow luminescence material A and yellow luminescence material B, the yellow luminescence material B being able to emit light under excitation of the blue, violet or ultraviolet LED chips and/or excitation of the blue afterglow luminescence material A,

a weight ratio (A:B) between the blue afterglow luminescence material A and the yellow luminescence material B being 10~70wt%: 30~90wt%,

the white LED lighting device being driven with an alternating current having a power frequency of not less than 50 Hz.

2. The white LED lighting device according to Claim 1, wherein a weight ratio (A:B) between the blue afterglow luminescence material A and the yellow luminescence material B is 20~50wt%: 50~80wt%.

3. The white LED lighting device according to Claim 1, wherein the blue, violet or ultraviolet LED chips are internally packed chips in the white LED lighting device.

4. The white LED lighting device according to Claim 1, wherein the device has a luminescence coating employing the luminescence material.

5. The white LED lighting device according to Claim 1, wherein the blue afterglow luminescence material A has a peak light-emitting wavelength of 440~490 nm.

6. The white LED lighting device according to Claim 1, wherein the blue afterglow luminescence material A is at least one of $Sr_4Al_{14}O_{25}:Eu^{2+},Dy^{3+}$, $Sr_2MgSi_2O_7:Eu^{2+},Dy^{3+}$, $CaS:Bi^{3+},Na^{+}$, $CaS:Cu^{+},Na^{+}$ and $CaSrS:Bi^{3+}$.

7. The white LED lighting device according to Claim 1, wherein the yellow luminescence material B has a peak light-emitting wavelength of 520~580 nm.

8. The white LED lighting device according to Claim 1, wherein the yellow luminescence material B is a yellow luminescence material with or without an afterglow phenomenon, or a combination thereof.

9. The white LED lighting device according to Claim 1, wherein the yellow luminescence material B is at least one of $Y_2O_3.Al_2O_3.SiO_2$: Ce.B.Na.P, Y_2O_2S:Mg,Ti, $Sr_3SiO_5:Eu^{2+},Dy^{3+}$, $Ca_2MgSi_2O_7:Eu^{2+},Dy^{3+}$, $CaS:Sm^{3+}$, YAG:Ce and TAG: Ce.

10. The white LED lighting device according Claim 1, wherein the luminescence coating is formed by mixing the blue afterglow luminescence material A and the yellow luminescence material B.

11. The white LED lighting device according to Claim 1, wherein the luminescence coating consists of a coating of the blue afterglow luminescence material A and a coating of the yellow luminescence material B.

12. The white LED lighting device according to Claim 1, wherein the alternating current is an alternating current used in houses, industries, commerce and public facilities.

13. The white LED lighting device according to Claim 2, wherein a weight ratio (A:B) between the blue afterglow luminescence material A and the yellow luminescence material B is 35~50wt%:50~65wt%.

14. The white LED lighting device according to Claim 13, wherein a weight ratio (A:B) between the blue afterglow luminescence material A and the yellow luminescence material B is 40~50wt%:50~60wt%.

15. The white LED lighting device according to Claim 14, wherein a weight ratio (A:B) between the blue afterglow luminescence material A and the yellow luminescence material B is 40wt%:60wt%.

16. The white LED lighting device according to Claim 6, wherein the yellow luminescence material B is at least one of $Y_2O_3.Al_2O_3.SiO_2$: Ce.B.Na.P, Y_2O_2S:Mg,Ti, $Sr_3SiO_5:Eu^{2+},Dy^{3+}$, $Ca_2MgSi_2O_7:Eu^{2+},Dy^{3+}$, $CaS:Sm^{3+}$, YAG:Ce and TAG: Ce.

17. The white LED lighting device according to Claim 10, wherein the blue afterglow luminescence material A has a peak light-emitting wavelength of 440~490 nm, and wherein the yellow luminescence material B has a peak light-emitting wavelength of 520~580 nm.

18. The white LED lighting device according to Claim 10, wherein the blue afterglow luminescence material A is at least one of $Sr_4Al_{14}O_{25}:Eu^{2+},Dy^{3+}$, $Sr_2MgSi_2O_7:Eu^{2+},Dy^{3+}$, $CaS:Bi^{3+},Na^{+}$, $CaS:Cu^{+},Na^{+}$ and $CaSrS:Bi^{3+}$, and wherein the yellow luminescence material B is at least one of $Y_2O_3.Al_2O_3.SiO_2$: Ce.B.Na.P, Y_2O_2S:Mg,Ti, $Sr_3SiO_5:Eu^{2+},Dy^{3+}$, $Ca_2MgSi_2O_7:Eu^{2+},Dy^{3+}$, $CaS:Sm^{3+}$, YAG:Ce and TAG: Ce.

19. The white LED lighting device according to Claim 11, wherein the blue afterglow luminescence material A has a peak light-emitting wavelength of 440~490 nm, and wherein the yellow luminescence material B has a peak light-emitting wavelength of 520~580 nm.

20. The white LED lighting device according to Claim 11, wherein the blue afterglow luminescence material A is at least one of $Sr_4Al_{14}O_{25}:Eu^{2+},Dy^{3+}$, $Sr_2MgSi_2O_7:Eu^{2+},Dy^{3+}$, $CaS:Bi^{3+},Na^{+}$, $CaS:Cu^{+},Na^{+}$ and $CaSrS:Bi^{3+}$, and wherein the yellow luminescence material B is at least one of $Y_2O_3.Al_2O_3.SiO_2$: Ce.B.Na.P, Y_2O_2S:Mg,Ti, $Sr_3SiO_5:Eu^{2+},Dy^{3+}$, $Ca_2MgSi_2O_7:Eu^{2+},Dy^{3+}$, $CaS:Sm^{3+}$, YAG:Ce and TAG: Ce.