What is claimed is:

1. An oxynitride luminescent material, wherein said oxynitride luminescent material has a chemical composition of: $M1_aM2_bSi_cO_dN_e:xEu^{2+}$, M1 being one or two or a combination of more than two of elements: Mg, Ca, Sr, Ba, and Zn; M2 being one or a combination of two of elements: Tb and Tm; a, b, c, d, e and x being molar coefficients of atoms, and $1\leq a\leq 4$, $0.001\leq b\leq 0.6$, $0.8\leq c\leq 1.2$, $0<d\leq 6$, $0<e<2$, $0.001\leq x\leq 0.3$.

2. The oxynitride luminescent material according to claim 1, wherein $1.1\leq a<2.3$, $0.001\leq b\leq 0.3$, $0.8\leq c\leq 1.2$, $1\leq d\leq 5$, $0.02\leq e\leq 1.6$, $0.005\leq x\leq 0.2$.

3. The oxynitride luminescent material according to claim 1, wherein $2.3\leq a\leq 3.5$, $0.001\leq b\leq 0.3$, $0.8\leq c\leq 1.2$, $1\leq d\leq 6$, $0.02\leq e\leq 1.6$, $0.005\leq x\leq 0.2$.

4. The oxynitride luminescent material according to any one of claims 1 to 3, wherein said element M1 comprises Sr.

5. The oxynitride luminescent material according to claim 4, wherein the molar percentage of Sr is 50 to 100% relative to said element M1.

6. The oxynitride luminescent material according to claim 4, wherein the molar percentage of Sr is 70 to 100% relative to said element M1.

7. The oxynitride luminescent material according to claim 4, wherein said element M1 is Sr.

8. A method of preparing said oxynitride luminescent material according to any one of claims 1 to 7, comprising the process of high-temperature solid phase synthesis where raw materials are subjected to high-temperature calcination under a reducing atmosphere to produce said luminescent material, said raw materials comprising at least elements of M1, M2, Si, O, N and Eu; said M1 being one or two or a combination of more than two of elements: Mg, Ca, Sr, Ba, and Zn; said M2 being one or a combination of two of elements: Tb and Tm.

9. The method according to claim 8, wherein said method further comprises process steps of crushing, grin ding, washing, grading and/or drying after said high-temperature calcination.

10. The method according to claim 8, wherein said elements M1 and M2 are present in the form of any one or two or a combination of more than two of carbonates, oxides, hydroxides, nitrates and oxalates.

11. The method according to any one of claims 8 to 10, wherein said element Si is present in the form of any one or two or a combination of more than two of SiO_2, H_2SiO_3, Si_2N_2O, Si_3N_4 and $Si(NH_2)_2$, and at least one of said material comprises both elements of Si and N.

12. The method according to any one of claims 8 to 10, wherein Eu is present in the form of any one or two or a combination of more than two of europium carbonate, europium oxide, europium hydroxide and europium nitrate.

13. The method according to claim 11, wherein said Si_3N_4 is any one or two or a combination of more than two of α-Si_3N_4, β-Si_3N_4 and amorphous silicon nitride.

14. The method according to any one of claims 8 to 10, wherein the calcination temperature of said high-temperature calcination is 1100 to 1600 ℃, calcination time is 2 to 9h.

15. The method according to any one of claims 8 to 10, wherein said reducing atmosphere is atmosphere of any one of a mixed gas of nitrogen and hydrogen, carbon monoxide, ammonia and methane, or a combination thereof.

16. The method according to claim 8, wherein said process of high-temperature solid phase synthesis is conducted with the use of a fluxing agent.

17. The method according to any one of claims 8 to 10, wherein said fluxing agent is selected from any one or two or a combination of more than two of alkaline earth metal halides, alkali metal halides, ammonium fluoride and ammonium chloride.

18. The method according to claim 17, wherein said fluxing agent has a weight no more than 10% of the total weight of said raw materials.

19. A phosphor, comprising said oxynitride luminescent material according to any one of claims 1 to 7 or an oxynitride luminescent material prepared from said method according to any

one of claim 18.

20. An LED light source, wherein said light source employs said phosphor according to claim 19.

21. The LED light source according to claim 20, wherein the LED chip of said LED light source is any one of ultraviolet light LED chip, near ultraviolet light LED chip and blue light LED chip.

22. A use of said oxynitride luminescent material according to any one of claims 1 to 7 or an oxynitride luminescent material prepared from said method according to any one of claims 8 to 18 in the preparation of a light source.

23. The use according to claim 22, wherein said phosphor is used in an LED light source.