CLAIMS

1.- An electronic component (2) comprising at least two superposed conducting or semiconducting layers (4; 10; 12; 14, 16) and at least graphene layer (8) interposed between the conducting or semiconducting layers (4; 10; 12; 14, 16), characterized in that the conducting or semiconducting layers (4; 10; 12; 14, 16) are electronically coupled through the thickness of said or each graphene layer (8), so that the coupled layers may exchange electrons with each other through said or each graphene layer (8), and one of the coupled layers is amagnetic.

2.- The electronic component (2) according to claim 1, wherein the two coupled layers are two conducting layers.

3.- The electronic component (2) according to claim 2, wherein the two coupled conducting layers (4 ;10 ,12 ;14,16) are amagnetic.

4. The electronic component (2) according to claim 2, wherein the two coupled conducting layers (4 ; 10 ,12 ; 14, 16) are ferromagnetic or antiferromagnetic.

5.- The electronic component (2) according to claim 1, wherein the two coupled conducting layers (4 ; 10 ,12 ; 14, 16) are a conducting layer and a semiconducting layer.

6.- The electronic component (2) according to any of the preceding claims, wherein the two coupled layers (4 ;10 ,12 ;14,16) are each in contact with a respective face of the graphene layer (8).

7.- The electronic component (2) according to any of the preceding claims, further comprising at least one intermediate layer (6) interposed between the coupled layers (4 ;10 ,12 ;14,16).

8.- The electronic component (2) according to claim 7, wherein said or each are intermediate layer (6) is an electrically insulating or semiconducting layer.

9.- The electronic component (2) according to claim 7 or 8 comprising at least two intermediate layers (6).

10.- The electronic component (2) according to claim 9, comprising at least one graphene layer interposed between two intermediate layers (6).

11.- The electronic component (2) according to any of claims 7 to 10, wherein a coupled layer (4 ;10 ;12 ;14 ;16) and an intermediate layer (6) are each in contact with a respective face of a graphene layer (8).

12.- The electronic component (2) according to any of the preceding claims, wherein said or each graphene layer is formed of a single grapheme film.

13.- The electronic component (2) according to any of the preceding claims, wherein both couple layers are coupled magnetically.

14.- The electronic component (2) according to any of the preceding claims, defining a simple or magnetic tunnel junction, in particular a simple conductor/insulator/conductor tunnel junction, a magnetic conductor/insulator/conductor tunnel junction, or a conductor/conductor/conductor junction or a conductor/semiconductor/conductor junction or a spin valve or a light-emitting diode, in particular an organic light-emitting diode (OLED).

15.- A method for manufacturing an electronic component comprising a first conducting or semiconducting layer and a second conducting or semiconducting layer electronically coupled through the thickness of a graphene layer, comprising the steps:

- providing the first layer,
- depositing at least one graphene layer on the first layer, and
- depositing of the second layer over the graphene layer, so that said or each graphene layer separates the first layer and the second layer.

16.- The use of a graphene layer interposed between two electronically coupled conducting or semiconducting layers of an electronic component for preventing the diffusion of species between the conducting or semiconducting layers electronically coupled through the thickness of the graphene layer.

17. - An electronic component (2) comprising at least two superposed conducting or semiconducting layers (4 ;10,12 ;14,16) and at least graphene layer (8) interposed between the conducting or semiconducting layers (4 ;10 ,12 ;14,16), characterized in that the conducting or semiconducting layers (4; 10 ,12 ; 14, 16) are electronically coupled through the thickness of said or each graphene layer (8), so that the coupled layers may exchange electrons with each other through said or each graphene layer (8); further comprising at least one intermediate layer (6) interposed between the coupled layers (4 ;10 ,12 ;14,16).

CLAIMS

1.- An electronic component (2) comprising at least two superposed conducting or semiconducting layers (4 ;10 ,12 ;14,16) and at least graphene layer (8) interposed between the conducting or semiconducting layers (4 ;10 ,12 ;14,16), characterized in that the conducting or semiconducting layers (4 ;10 ,12 ;14,16) are electronically coupled through the thickness of said or each graphene layer (8), so that the coupled layers may exchange electrons with each other through said or each graphene layer (8), and one of the coupled layers is amagnetic, the graphene layer defining a barrier against diffusion of species.

2.- The electronic component (2) according to claim 1, wherein the two coupled layers are two conducting layers.

3.- The electronic component (2) according to claim 2, wherein the two coupled conducting layers (4 ;10 ,12 ;14,16) are amagnetic.

4. The electronic component (2) according to claim 2, wherein the graphene layer is interposed between two ferromagnetic or antiferromagnetic conducting layers (4 ;10 ,12 ;14,16) coupled electronically through the graphene layer.

5.- The electronic component (2) according to claim 1, wherein the two coupled conducting layers (4 ;10 ,12 ;14,16) are a conducting layer and a semiconducting layer.

6.- The electronic component (2) according to any of the preceding claims, wherein the two coupled layers (4 ;10 ,12 ;14,16) are each in contact with a respective face of the graphene layer (8).

7.- The electronic component (2) according to any of the preceding claims, further comprising at least one intermediate layer (6) interposed between the coupled layers (4 ;10 ,12 ;14,16).

8.- The electronic component (2) according to claim 7, wherein said or each are intermediate layer (6) is an electrically insulating or semiconducting layer.

9.- The electronic component (2) according to claim 7 or 8 comprising at least two intermediate layers (6).

10.- The electronic component (2) according to claim 9, comprising at least one graphene layer interposed between two intermediate layers (6).

11.- The electronic component (2) according to any of claims 7 to 10, wherein a coupled layer (4 ;10 ;12 ;14 ;16) and an intermediate layer (6) are each in contact with a respective face of a graphene layer (8).

12.- The electronic component (2) according to any of the preceding claims, wherein said or each graphene layer is formed of a single graphene film or a plurality of superposed graphene films.

13.- The electronic component (2) according claim 4, wherein the two ferromagnetic or antiferromagnetic conducting layers are coupled magnetically.

14.- The electronic component (2) according to any of the preceding claims, defining a simple or magnetic tunnel junction, in particular a simple conductor/insulator/conductor tunnel junction, a magnetic conductor/insulator/conductor tunnel junction, or a conductor/conductor/conductor junction or a conductor/semiconductor/conductor junction or a spin valve or a light-emitting diode, in particular an organic light-emitting diode (OLED).

15.- A method for manufacturing an electronic component comprising a first conducting or semiconducting layer and a second conducting or semiconducting layer electronically coupled through the thickness of a graphene layer, comprising the steps:

- providing the first layer,
- depositing at least one graphene layer on the first layer, and
- depositing of the second layer over the graphene layer, so that said or each graphene layer separates the first layer and the second layer.

16.- The use of a graphene layer interposed between two electronically coupled conducting or semiconducting layers of an electronic component for preventing the diffusion of species between the conducting or semiconducting layers electronically coupled through the thickness of the graphene layer.

17.- An electronic component (2) comprising at least two superposed conducting or semiconducting layers (4; 10; 12; 14, 16) and at least graphene layer (8) interposed between the conducting or semiconducting layers (4; 10; 12; 14, 16), characterized in that the conducting or semiconducting layers (4; 10; 12; 14, 16) are electronically coupled through the thickness of said or each graphene layer (8), so that the coupled layers may

exchange electrons with each other through said or each graphene layer (8), the graphene layer defining a barrier against diffusion of species, further comprising at least one intermediate layer (6) interposed between the coupled layers (4; 10; 12; 14, 16).