CLAIMS

1 . Solar cell (1) comprising at least a first layer (3, 4', 4", 5, 6) made of a semiconductor material for absorbing photons from light radiation and releasing charge carriers, and at least one conductive layer (2), deposited directly onto said first layer (3, 4', 4", 5, 6), adapted to allow said light radiation to enter into said solar cell (1) towards said first layer (3, 4', 4", 5, 6) and to collect the charge carriers released by said first layer (3, 4', 4", 5, 6), said conductive layer (2) consisting of three overlapped layers (21 , 22, 23), which are:

- a transparent intermediate metal layer (23), made of metal, and
- two oxide layers (21 , 22), made of a transparent conductive oxide, said two oxide layers (21 , 22) being respectively an inner oxide layer (21) and an outer oxide layer (22) surrounding said transparent intermediate metal layer (23) so as to provide a low resistance path for the electrical charges and to maximize the amount of light radiation entering the solar cell (1),

wherein said solar cell is a heterojunction bifacial solar cell (1) comprising a front side (11) and a rear side (10), said at least one first layer (3, 4', 4", 5, 6) comprising a first layer (3) made of crystalline silicon, preferably n-type crystalline silicon, a second layer (4') and a third layer (4"), said second and third layers (4', 4") being made of hydrogenated amorphous silicon, and overlapping said first layer (3), surrounding it, said second layer (4') being arranged in correspondence of said front side (11), said third layer (4") being arranged in correspondence of said rear side (10), said solar cell (1) further comprising a fourth layer (5) made of n-type doped hydrogenated amorphous silicon, overlapping said second layer (4'), a fifth layer (6) made of p-type doped hydrogenated amorphous silicon, overlapping said third layer (4"), and two conductive layers (2) of said at least one conductive layer (2), respectively overlapping said fourth layer (5) and said fifth layer (6);

said outer oxide layer (22) of said at least one conductive layer (2) is an outermost layer of the solar cell (1);

wherein said transparent intermediate metal layer (23) has a thickness between 5 nm and 7nm, said inner oxide layer (21) has a thickness of 50 nm and said outer oxide layer (22) has a thickness between 50 nm and 60 nm.

2. Solar cell (1) according to claim 1 wherein said transparent intermediate metal layer (23) has a thickness of 5 nm, said inner oxide layer (21) has a thickness of 50 nm and said outer oxide layer (22) has a thickness of 50 nm.

3. Solar cell (1) according to any one of the preceding claims, characterised in that at least one of said oxide layers (21 , 22) is made of indium trioxide In_2O_3 doped with stannic oxide SnO_2 or is made of aluminum doped zinc oxide.

4. Solar cell (1) according to any one of the preceding claims,
characterised in that said transparent intermediate metal layer (23) has the shape of a continuous layer.

5. Solar cell (1) according to any one of claims 1 - 3, characterised in that said transparent intermediate metal layer (23) is arranged as a mesh network.

6. Solar cell (1) according to claim 1, wherein the said two conductive layers (2) are made by depositing their inner oxide layers (21) respectively over said fourth layer (5) and said fifth layer (6).

7. Solar cell (1) according to any one of the preceding claims, characterised in that it does not comprise a metallization grid or in that it comprises a metallization grid made only by parallel or substantially parallel conductors.

8. Solar cells module characterised in that it comprises a first solar cell (1) and a second solar cell (1) according to any one of the preceding claims, and connectors (100) for electrically connecting a conductive layer (2) of said first solar cell (1) to a conductive layer (2) of said second solar cell (1), said connectors (100) being directly attached to said outer oxide layer (22) of said conductive layer (2) of said first solar cell (1) and to said outer oxide layer (22) of said conductive layer (2) of said second solar cell (1); or
to said parallel or substantially parallel conductors on said conductive layer (2) of said first solar cell (1) and/or on said conductive layer (2) of said second solar cell (1).