Claims

1. A method for producing solar modules (2), wherein photovoltaic cells (3) are assembled into lines (4) and wherein the solar modules (2) are constructed from electrically interconnected lines (4), **characterized in that** at least two lines (4) are built up and in that the at least two lines (4) are co-fed to a cell-fitting operation for the solar module (2).

2. The method as claimed in claim 1, characterized in that the at least two lines (4) are co-fed to the cell-fitting operation for the solar module (2) by means of a motorized transfer unit (5), in particular by means of a tray and/or table and/or by means of a belt conveyor and/or by means of a vacuum table.

3. The method as claimed in one of the preceding claims, characterized in that a relative alignment of the photovoltaic cells (3) within one line (4) and/or two different lines (4) is maintained during the feeding.

4. The method as claimed in one of the preceding claims, characterized in that a number of co-fed lines (4) is adapted to an application rate of an electrically conductive adhesive and/or in that an application rate of an electrically conductive adhesive is adapted to a number of co-fed lines.

5. A method for producing solar modules (2), in particular as claimed in one of the preceding claims, wherein photovoltaic cells (3) are assembled into lines (4) and wherein the solar modules (2) are constructed from electrically interconnected lines (4), characterized in that that offsetting elements (12) are used during the building up of the lines (4) to form an offset of adjacent lines (4) in relation to one

another.

6. The method as claimed in one of the preceding claims, characterized in that at least two lines (4) offset in relation to one another are co-fed to the cell-fitting operation.

7. The method as claimed in one of the preceding claims, characterized in that groups of at least two lines (4) are built up in parallel in time and these are fed to a common cell-fitting operation.

8. A device (1) for producing solar modules (2), wherein the device (1) comprises means by which the device (1) is set up for carrying out a method as claimed in one of the preceding claims.

9. The device (1) as claimed in the preceding claim, wherein the device has a motorized transfer unit (5), in particular a tray and/or a table and/or a belt conveyor and/or a vacuum table, with which at least two lines (4) of photovoltaic cells (3) can be fed to a cell-fitting operation for a solar module (2) to be produced, in particular wherein the motorized transfer unit (5) is set up to move the photovoltaic cells (3) of the lines (4) from a loading point (8) to an unloading point (9).

10. The device (1) as claimed in the preceding claim, wherein the transfer unit (5) has at least two support positions (11) for lines (4) of photovoltaic cells (3), preferably wherein the transfer unit has at least one line (24) of suction openings (23) for each support position (11).

11. The device (1) as claimed in one of the preceding claims, wherein the device (1) has a vacuum generating unit (6),

with which lines (4) of photovoltaic cells (3) can be fixed on the transfer unit (5) by a vacuum, in particular wherein the vacuum generating unit (6) is connected to suction openings (23) of the transfer unit (5).

12. The device (1) as claimed in one of the preceding claims, wherein the device (1) has a dispensing unit (7) for dispensing electrically conductive adhesive onto lines (4) of photovoltaic cells (3), in particular those that are arranged on the transfer unit (5), preferably wherein the dispensing unit (7) is arranged between a loading point (8) and an unloading point (9) of the device (1) for lines (4).

13. The device (1) as claimed in the preceding claim, wherein the dispensing unit (7) has a number of dispensing nozzles (10) which corresponds to a number of support positions (11) for lines (4) of photovoltaic cells (3) of the transfer unit (5), and/or wherein the dispensing unit (7), in particular dispensing nozzles (10) of the dispensing unit (7), is movable in the longitudinal direction of lines (4) arranged on the transfer unit (5).

14. The device (1) as claimed in one of the preceding claims, wherein the device (1) has a magazine (13) for providing photovoltaic cells (3) and/or a transfer unit (14), in particular with a handling robot (15), with which photovoltaic cells (4) can be removed from a or the magazine (13) and/or arranged in lines (3) on the transfer unit (5).

15. The device (1) as claimed in one of the preceding claims, wherein, for monitoring photovoltaic cells (3), the device (1) has a monitoring unit (17), in particular wherein the monitoring unit (17) comprises at least one optical monitoring means, for example a camera (18).

16. The device (1) as claimed in one of the preceding claims, wherein the device (1) has a cell-fitting unit (19), in particular with at least one gripper (20), preferably with at least one suction gripper, wherein the cell-fitting unit (19) is set up to receive at least one or more or all of the lines (4) of photovoltaic cells (3) which are provided by the transfer unit (5) at a unloading point (9) and/or to transfer them a downstream processing step and/or handling step, in particular to a downstream transporting unit (21).

17. The device (1) as claimed in one of the preceding claims, wherein the device (1) has a transporting unit (21) downstream of the transfer unit (5), with which at least one solar module (2) fitted with lines (4) of photovoltaic cells (3, 12) can be fed to a downstream processing station.

18. The device (1) as claimed in one of the preceding claims, wherein a transfer movement of the transfer unit (5) is aligned transversely, in particular at right angles, to a longitudinal direction of support positions (11) for lines (4) on the transfer unit (5) or in the longitudinal direction of support positions (11) for lines (4) on the transfer unit (5).

19. The device (1) as claimed in one of the preceding claims, wherein a transfer movement of the transfer unit (5) is aligned transversely, in particular at right angles, to a transporting movement of the transporting unit (21) or in the direction of a transporting movement of the transporting unit (21).

20. The device (1) as claimed in one of the preceding claims with a control unit (22), by which the device (1) is set up for carrying out the method as claimed in one of the preceding claims.

/ Abstract