Title (en)

COMPOSITE CONNECTION OF TWO COMPONENTS

Title (de)

KOMPOSITVERBINDUNG ZWEIER BAUTEILE

Title (fr)

ASSEMBLAGE COMPOSITE DE DEUX COMPOSANTS

Publication

EP 4122009 A1 20230125 (DE)

Application

EP 21711205 A 20210308

Priority

- DE 102020107240 A 20200317
- EP 2021055801 W 20210308

Abstract (en)

[origin: WO2021185617A1] The invention relates to a method for connecting a first component (2) to a second component (3), having the steps of: a) providing a plurality of nanowires (1) on a contact surface (4) of the first component (2), b) applying an adhesive (6) onto the contact surface (4) of the first component (2) and/or a contact surface (5) of the second component (3), and c) bringing together the first component (2) and the second component (3) such that the plurality of nanowires (1) are brought into contact with the contact surface (5) of the second component (3) and the contact surfaces (4, 5) are connected together by the adhesive (6). At least some of the nanowires (1) can be in contact with the adhesive (6) after forming the connection. Intermediate spaces between the nanowires (1) can be filled with the adhesive (6). Alternatively, the nanowires (1) are arranged in a first region, and the adhesive (6) can be arranged in a second region adjoining the first region or at a distance from the first region, wherein the second region can surround the first region. The adhesive (6) can be liquid upon being applied in step b). In step a), a plurality of nanowires (1) can additionally be provided on the contact surface (5) of the second component (3), said components (2, 3) being brought together in step c) such that the nanowires (1) on the contact surface (5) of the second component (3) are brought into contact with the contact surface (4) of the first component (2). In step c), at least the contact surface (5) of the second component (3) can be heated to a temperature of at least 90 °C and/or maximally 270 °C and/or the first component (2) and the second component (3) are pressed against each other with a pressure of at least 2 MPa and/or maximally 200 MPa. The contact surfaces (4, 5) can be connected together in an electrically and/or thermally conductive manner by means of the nanowires (1). The first component (2) and the second component (3) can be electronic components, such as semiconductor components, computer chips, microprocessors, or printed circuit boards for example. It is also possible to install a component such as a sensor (as the first component (2)) on a wall or mounting (as the second component (3)).

IPC 8 full level

H01L 23/488 (2006.01); **B23K 35/02** (2006.01); **H01L 21/56** (2006.01); **H01L 21/58** (2006.01); **H01L 21/60** (2006.01); **H01L 21/603** (2006.01); **H01L 23/367** (2006.01); **H01L 23/373** (2006.01)

CPC (source: EP KR)

B23K 35/02 (2013.01 - EP); **H01L 23/3733** (2013.01 - EP); **H01L 23/3737** (2013.01 - EP); **H01L 24/29** (2013.01 - EP KR); **H01L 24/30** (2013.01 - EP); **H01L 24/32** (2013.01 - EP KR); **H01L 24/33** (2013.01 - EP); **H01L 24/83** (2013.01 - EP KR); H01L 24/05 (2013.01 - EP); H01L 24/27 (2013.01 - EP); H01L 2224/04026 (2013.01 - EP); H01L 2224/05647 (2013.01 - EP); H01L 2224/27462 (2013.01 - EP); H01L 2224/29005 (2013.01 - KR); H01L 2224/29011 (2013.01 - EP); H01L 2224/29012 (2013.01 - EP); H01L 2224/29014 (2013.01 - EP); H01L 2224/29016 (2013.01 - KR); H01L 2224/29076 (2013.01 - EP); H01L 2224/29078 (2013.01 - EP KR); H01L 2224/29147 (2013.01 - EP); H01L 2224/2919 (2013.01 - EP); H01L 2224/2969 (2013.01 - KR); H01L 2224/30051 (2013.01 - EP); H01L 2224/301 (2013.01 - EP); H01L 2224/30505 (2013.01 - EP); H01L 2224/30517 (2013.01 - EP); H01L 2224/30519 (2013.01 - EP); H01L 2224/3201 (2013.01 - EP); H01L 2224/32106 (2013.01 - EP); H01L 2224/32145 (2013.01 - KR); H01L 2224/33051 (2013.01 - EP); H01L 2224/331 (2013.01 - EP); H01L 2224/33505 (2013.01 - EP); H01L 2224/33517 (2013.01 - EP); H01L 2224/33519 (2013.01 - EP); H01L 2224/83191 (2013.01 - EP); H01L 2224/83193 (2013.01 - EP); H01L 2224/832 (2013.01 - KR); H01L 2224/83203 (2013.01 - EP); H01L 2224/8321 (2013.01 - EP); H01L 2224/8334 (2013.01 - KR); H01L 2224/83447 (2013.01 - EP); H01L 2224/83862 (2013.01 - EP KR)

C-Set (source: EP)

1. H01L 2224/3201 + H01L 2924/00012
2. H01L 2224/29147 + H01L 2924/00014
3. H01L 2224/05647 + H01L 2924/00014
4. H01L 2224/83447 + H01L 2924/00014
5. H01L 2224/8321 + H01L 2924/00014
6. H01L 2224/83203 + H01L 2924/00012
7. H01L 2224/27462 + H01L 2924/00014
8. H01L 2224/331 + H01L 2924/00012
9. H01L 2224/301 + H01L 2924/00012
10. H01L 2224/29012 + H01L 2924/00012

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

DE 102020107240 A1 20210923; EP 4122009 A1 20230125; JP 2023518075 A 20230427; JP 7496886 B2 20240607; KR 20230020944 A 20230213; TW 202229000 A 20220801; WO 2021185617 A1 20210923

DOCDB simple family (application)

DE 102020107240 A 20200317; EP 2021055801 W 20210308; EP 21711205 A 20210308; JP 2022556495 A 20210308; KR 20227035336 A 20210308; TW 110108369 A 20210309