

CLAIMS:

1. A method of producing a printhead for an inkjet printer with a print engine controller for controlling the printhead operation, the method comprising the steps of:

5 providing a printhead integrated circuit (74) having an array of ink ejection nozzles (73) formed on a substrate;

providing circuitry for electrical connection to the print engine controller;

providing a support member (65) for supporting the printhead integrated circuit and the circuitry within the printer;

10 providing a laminate polymer film (71) comprising an adhesive layer on both sides of a central film (222), wherein a first adhesive layer (224) on one side of the central film has a lower curing temperature than a second adhesive layer (220) on an opposite side of the central film;

securing the first adhesive layer (224) of the polymer film to a surface of the support member (65) by applying heat and pressure for a predetermined time;

15 mounting the printhead integrated circuit (74) and the circuitry to the second adhesive layer (220) of the polymer film; and,

electrically connecting the circuitry to the printhead integrated circuit (74).

2. A method according to claim 1 wherein the circuitry is a flex PCB (79) with
20 tracks of conductive material in layers of polyimide film, and the printhead integrated circuit (74) and the flex PCB (79) are simultaneously attached to the support member via the polymer film (71).

3. A method according to claim 1 wherein the circuitry is a flex PCB (79) with
25 tracks of conductive material in layers of polyimide film, and the flex PCB is attached to the polymer film (71) after the printhead integrated circuit (74) is attached.

4. A method according to claim 3 wherein the flex PCB (79) has an adhesive area for attachment to the polymer film (71) once the polymer film has cooled and hardened after the
30 printhead integrated circuit attachment process.

5. A method according to claim 1 wherein the circuitry is tracks of conductive material laid within the polymer film (71).

6. A method according to any one of claims 1 to 5 wherein the support member (65) has a plurality of ink feed conduits (70) for establishing fluid communication with at least one ink storage compartment; and,

the polymer film (71) is attached to the support member (65) between the ink feed conduits and the printhead integrated circuits, the polymer film having an array of apertures (72) such that the ejection nozzles (73) are in fluid communication with the ink feed conduits (70).

7. A method according to any one of claims 1 to 5 wherein the polymer film (71) is more than 25 micrometers thick.

8. A method according to claim 7 wherein the polymer film (71) is about 50 micrometers thick.

9. A method according to claim 6 wherein the array of apertures (72) is an array of laser drilled holes in registration with respective ends of the ink feed conduits (70).

10. An inkjet printhead obtainable by a method according to any one of the preceding claims.

11. An inkjet printhead comprising:

a printhead integrated circuit (74) having an array of ink ejection nozzles (73) formed on a substrate;

circuitry electrically connected to the printhead integrated circuit (74);

a support member (65) for supporting the printhead integrated circuit and the circuitry within a printer; and

a laminate polymer film (71) sandwiched between the support member and the printhead integrated circuit,

wherein the laminate polymer film (71) comprises an adhesive layer on both sides of a central film (222), and wherein a first adhesive layer (224) on one side of the central film has a lower curing temperature than a second adhesive layer (220) on an opposite side of the central film.

5 12. The inkjet printhead according to claim 11 wherein the circuitry is a flex PCB (79) with tracks of conductive material in layers of polyimide film.

 13. The inkjet printhead according to claim 11 or 12 wherein the support member (65) has a plurality of ink feed conduits (70); and,

10 the polymer film (71) is attached to the support member (65) between the ink feed conduits and the printhead integrated circuits, the polymer film having an array of apertures (72) such that the ejection nozzles (73) are in fluid communication with the ink feed conduits (70).

 14. The inkjet printhead according to any one of claims 11 to 13 wherein the polymer
15 film (71) is more than 25 micrometers thick.

 15. The inkjet printhead according to claim 14 wherein the polymer film (71) is about 50 micrometers thick.

20 16. The inkjet printhead according to claim 13 wherein the array of apertures (72) is
an array of laser drilled holes in registration with respective ends of the ink feed conduits (70).

CLAIMS:

1. A method of producing a printhead for an inkjet printer with a print engine controller for controlling the printhead operation, the method comprising the steps of:
- 5 providing a printhead integrated circuit having an array of ink ejection nozzles formed on a substrate;
- providing circuitry for electrical connection to the print engine controller;
- providing a support member for supporting the printhead integrated circuit and the circuitry within
- 10 the printer;
- providing a laminate polymer film comprising an adhesive layer on both sides of a central film, wherein a first adhesive layer on one side of the central film has a lower curing temperature than a second adhesive layer on an opposite side of the central film;
- securing the first adhesive layer of the polymer film to a surface of the support member by
- 15 applying heat and pressure for a predetermined time;
- mounting the printhead integrated circuit and the circuitry to the second adhesive layer of the polymer film; and,
- electrically connecting the circuitry to the printhead integrated circuit.
- 20 2. A method according to claim 1 wherein the circuitry is a flex printed circuit board (PCB) with tracks of conductive material in layers of polyimide film, and the printhead integrated circuit and the flex PCB are simultaneously attached to the support member via the polymer film.
3. A method according to claim 1 wherein the circuitry is a flex PCB with tracks of conductive
- 25 material in layers of polyimide film, and the flex PCB is attached to the polymer film after the printhead integrated circuit is attached.
4. A method according to claim 3 wherein the flex PCB has an adhesive area for attachment to the polymer film once the polymer film has cooled and hardened after the printhead integrated circuit
- 30 attachment process.
5. A method according to claim 1 wherein the circuitry is tracks of conductive material laid within the polymer film.

6. A method according to claim 1 wherein the support member has a plurality of ink feed conduits for establishing fluid communication with at least one ink storage compartment; and, the polymer film is attached to the support member between the ink feed conduits and the printhead integrated circuits, the polymer film having an array of apertures such that the ejection nozzles are in fluid communication with the ink feed conduits.

7. A method according to claim 1 wherein the polymer film is more than 25 micrometers thick.

8. A method according to claim 7 wherein the polymer film is about 50 micrometers thick.

9. A method according to claim 6 wherein the array of apertures is an array of laser drilled holes in registration with respective ends of the ink feed conduits.