CLAIMS

1. An apparatus for processing a sample, the apparatus being provided with a circuit board and being provided with, in use, a sample cartridge, the circuit board interfacing with a sample cartridge in use, wherein the sample cartridge comprises a working surface defining a plurality of sections for processing a sample; wherein the circuit board is configured to be adjacent the working surface in use and comprises:

a plurality of elements, each of the plurality of elements is associated with one of the plurality of sections and is arranged to be positioned adjacent the associated one of the plurality of sections in use; and

wherein the circuit board further delimits at least one alignment feature for engaging a corresponding alignment feature on the cartridge and ensuring that the plurality of elements are positioned adjacent the associated one of the plurality of sections in use.

2. Apparatus according to claim 1, in which one or more elements are provided and the elements are selected from the group including: a heater for heating the sample cartridge, an electrical contact for powering features on the sample cartridge, an electrical contact for powering a pump on the sample cartridge.

3. Apparatus according to claim 1, in which the sample cartridge provides a plurality of sections and the circuit board enables these sections to be activated as required for processing the sample by the at least one alignment feature ensuring that the features on the circuit board are aligned correctly with the corresponding features on the sample cartridge in the plurality of sections.

4. Apparatus according to claim 1, in which the circuit board further comprises an edge delimiting an opening corresponding, in use, to a sample processing chamber on the sample cartridge.

5. Apparatus according to claim 4, in which the processing in the sample processing chamber is provided by features separate from the circuit board and the opening allows access to the sample processing chamber by additional components provided separately from the circuit board.

6. Apparatus according to claim 1, in which the circuit board further defines a window allowing, in use, a feature of the working surface to be visually inspected through the circuit board.

7. Apparatus according to claim 1, in which the circuit board further comprises projections extending from its surface in a direction such that, in use, they are directed towards the cartridge, the projections being conductive to allow an electrical current to be supplied to the sample cartridge through the projections.

8. Apparatus according to claim 7, in which the projections are resiliently mounted, so that when a sample cartridge is installed in the apparatus a force is applies to the projections to bias them towards the sample cartridge and improve the electrical contact.

9. Apparatus according to claim 1, in which at least part of a section of the apparatus for receiving the sample cartridge is be mounted with a resilient element for providing a force to press the circuit board and the working surface of the sample cartridge together in use.

10. Apparatus according to claim 1, in which a platen is provided by the apparatus, the platen acting against a non-working surface of the sample cartridge and the platen being moved to press the working surface of the sample cartridge against the circuit board.

11. Apparatus according to claim 1, in which the sample cartridge is placed in a holder before being inserted into the apparatus provided with the circuit board.

12. A circuit board for interfacing with a sample cartridge in use, wherein the sample cartridge comprises a working surface defining a plurality of sections for processing a sample; wherein the circuit board is configured to be adjacent the working surface in use and comprises:

a plurality of elements, each of the plurality of elements is associated with one of the plurality of sections and is arranged to be positioned adjacent the associated one of the plurality of sections in use; and

wherein the circuit board further delimits at least one alignment feature for engaging a corresponding alignment feature on the cartridge and ensuring that the plurality of elements are positioned adjacent the associated one of the plurality of sections in use.

13. A circuit board according to claim 12, in which one or more elements are provided and the elements are selected from the group including: a heater for heating the sample cartridge, an electrical contact for powering features on the sample cartridge, an electrical contact for powering a pump on the sample cartridge.

14. A circuit board according to claim 12, in which the sample cartridge provides a plurality of sections and the circuit board enables these sections to be activated as required for processing the sample by the at least one alignment feature ensuring that the features on the circuit board are aligned correctly with the corresponding features on the sample cartridge in the plurality of sections.

15. A circuit board according to claim 12, in which the circuit board further comprises an edge delimiting an opening corresponding, in use, to a sample processing chamber on the sample cartridge.

16. A circuit board according to claim 15, in which the processing in the sample processing chamber is provided by features separate from the circuit board and the opening allows access to the sample processing chamber by additional components provided separately from the circuit board.

17. A circuit board according to claim 12, in which the circuit board further defines a window allowing, in use, a feature of the working surface to be visually inspected through the circuit board.

18. A circuit board according to claim 12, in which the circuit board further comprises projections extending from its surface in a direction such that, in use, they are directed towards the cartridge, the projections being conductive to allow an electrical current to be supplied to the sample cartridge through the projections.

19. A circuit board according to claim 18, in which the projections are resiliently mounted, so that when a sample cartridge is installed in the apparatus a force is applies to the projections to bias them towards the sample cartridge and improve the electrical contact.

20. A circuit board according to claim 12, in which at least part of a section for receiving the sample cartridge is mounted with a resilient element for providing a force to press the circuit board and the working surface of the sample cartridge together in use.

21. A circuit board according to claim 12, in which a platen is provided, the platen acting against a non-working surface of the sample cartridge and the platen being moved to press the working surface of the sample cartridge against the circuit board.

22. A circuit board according to claim 12, in which the sample cartridge is placed in a holder before being inserted to the apparatus provided with the circuit board.

CLAIMS

1. An apparatus for processing a sample, the apparatus being provided with a circuit board and being provided with, in use, a sample cartridge, the circuit board interfacing with a sample cartridge in use, wherein the sample cartridge comprises a working surface defining a plurality of sections for processing a sample; wherein the circuit board is configured to be adjacent the working surface in use and comprises:

a plurality of elements, each of the plurality of elements is associated with one of the plurality of sections and is arranged to be positioned adjacent the associated one of the plurality of sections in use; and

wherein the circuit board further delimits at least one alignment feature for engaging a corresponding alignment feature on the cartridge and ensuring that the plurality of elements are positioned adjacent the associated one of the plurality of sections in use; and

wherein the circuit board further comprises an edge delimiting an opening corresponding, in use, to a sample processing chamber on the sample cartridge, the processing in the sample processing chamber being provided by features separate from the circuit board and the opening allowing access to the sample processing chamber by additional components provided separately from the circuit board.

2. Apparatus according to claim 1, in which one or more elements are provided and the elements are selected from the group including: a heater for heating the sample cartridge, an electrical contact for powering features on the sample cartridge, an electrical contact for powering a pump on the sample cartridge.

3. Apparatus according to claim 1, in which the sample cartridge provides a plurality of sections and the circuit board enables these sections to be activated as required for processing the sample by the at least one alignment feature ensuring that the features on the circuit board are aligned correctly with the corresponding features on the sample cartridge in the plurality of sections.

4. Apparatus according to claim 1, in which the circuit board further defines a window allowing, in use, a feature of the working surface to be visually inspected through the circuit board.

5. Apparatus according to claim 1, in which the circuit board further comprises projections extending from its surface in a direction such that, in use, they are directed towards the cartridge, the projections being conductive to allow an electrical current to be supplied to the sample cartridge through the projections.

6. Apparatus according to claim 5, in which the projections are resiliently mounted, so that when a sample cartridge is installed in the apparatus a force is applies to the projections to bias them towards the sample cartridge and improve the electrical contact.

7. Apparatus according to claim 1, in which at least part of a section of the apparatus for receiving the sample cartridge is be mounted with a resilient element for providing a force to press the circuit board and the working surface of the sample cartridge together in use.

8. Apparatus according to claim 1, in which a platen is provided by the apparatus, the platen acting against a non-working surface of the sample cartridge and the platen being moved to press the working surface of the sample cartridge against the circuit board.

9. Apparatus according to claim 1, in which the sample cartridge is placed in a holder before being inserted into the apparatus provided with the circuit board.

10. A circuit board for interfacing with a sample cartridge in use, wherein the sample cartridge comprises a working surface defining a plurality of sections for processing a sample; wherein the circuit board is configured to be adjacent the working surface in use and comprises:

a plurality of elements, each of the plurality of elements is associated with one of the plurality of sections and is arranged to be positioned adjacent the associated one of the plurality of sections in use; and

wherein the circuit board further delimits at least one alignment feature for engaging a corresponding alignment feature on the cartridge and ensuring that the plurality of elements are positioned adjacent the associated one of the plurality of sections in use; and

wherein the circuit board further comprises an edge delimiting an opening corresponding, in use, to a sample processing chamber on the sample cartridge, the processing in the sample processing chamber being provided by features separate from the

circuit board and the opening allowing access to the sample processing chamber by additional components provided separately from the circuit board.

11. A circuit board according to claim 10, in which one or more elements are provided and the elements are selected from the group including: a heater for heating the sample cartridge, an electrical contact for powering features on the sample cartridge, an electrical contact for powering a pump on the sample cartridge.

12. A circuit board according to claim 10, in which the sample cartridge provides a plurality of sections and the circuit board enables these sections to be activated as required for processing the sample by the at least one alignment feature ensuring that the features on the circuit board are aligned correctly with the corresponding features on the sample cartridge in the plurality of sections.

13. A circuit board according to claim 10, in which the circuit board further defines a window allowing, in use, a feature of the working surface to be visually inspected through the circuit board.

14. A circuit board according to claim 10, in which the circuit board further comprises projections extending from its surface in a direction such that, in use, they are directed towards the cartridge, the projections being conductive to allow an electrical current to be supplied to the sample cartridge through the projections.

15. A circuit board according to claim 14, in which the projections are resiliently mounted, so that when a sample cartridge is installed in the apparatus a force is applies to the projections to bias them towards the sample cartridge and improve the electrical contact.

16. A circuit board according to claim 10, in which at least part of a section for receiving the sample cartridge is mounted with a resilient element for providing a force to press the circuit board and the working surface of the sample cartridge together in use.

17. A circuit board according to claim 10, in which a platen is provided, the platen acting against a non-working surface of the sample cartridge and the platen being moved to press the working surface of the sample cartridge against the circuit board.

18. A circuit board according to claim 10, in which the sample cartridge is placed in a holder before being inserted to the apparatus provided with the circuit board.