CLAIMS:

1. An integrated circuit (IC) assembly comprising:

an IC substrate having one or more micro-devices;

at least one dielectric matrix element placed on said IC substrate over at least one of its one or more micro-devices; and

an encapsulation element applied over said IC substrate and said at least one dielectric matrix element placed thereon to enclose and seal said IC; and

comprising at least one spacer element placed on the at least one dielectric matrix element, the at least one spacer element partitioning between the at least one dielectric matrix element and the encapsulation element, and

wherein the at least one spacer element is a detached portion removed from an aligning element configured to accurately place the at least one dielectric matrix element on the IC substrate; and

wherein the at least one dielectric matrix element comprises a plurality of loop, hook, and/or bristle elements.

2. The assembly of claim 1 wherein the at least one spacer element is a sheet of electrically insulating material having thickness in a range of 0.1 to 0.3 millimeters.

3. The assembly of any one of the preceding claims wherein the at least one dielectric matrix element is made of a thin film or foil.

4. The assembly of any one of the preceding claims wherein the at least one dielectric matrix element is made from a breathable material.

5. The assembly of any one of the preceding claims wherein the at least one dielectric matrix element is made from a permeable material.

6. The assembly of any one of the preceding claims wherein the at least one dielectric matrix element is made of a cellular material.

7. The assembly of any one of the preceding claims wherein the at least one dielectric matrix element is made of a fibrous material.

8. The assembly of any one of the preceding claims wherein the encapsulation element comprises plastic or resin mold.

9. The assembly of any one of the preceding claims comprising a circuit board electrically coupled to the IC substrate and its one or more micro-devices.

10. The assembly of claim 9, further comprising one or more electrical conductors electrically coupled to the circuit board and extending through the encapsulation element to provide electrical connectivity to said circuit board.

11. A multilayered circuit structure comprising at least one integrated circuit (IC) assembly and at least one additional circuit board having one or more devices and/or ICs attached thereto,

the at least one IC assembly comprising:

an IC substrate having one or more micro-devices;

a circuit board electrically coupled to the IC substrate and its one or more micro-devices;

at least one dielectric matrix element placed on said IC substrate over at least one of its one or more micro-devices; and

an encapsulation element applied over said IC substrate and said at least one dielectric matrix element placed thereon to enclose and seal said IC substrate;

wherein said at least one additional circuit board is attached and electrically coupled to said at least one IC assembly to form a stack structure.

12. The multilayered circuit structure of claim 11, further comprising one or more electrical conductors electrically extending through the encapsulation element to provide electrical connectivity between the at least one IC assembly and the at least one additional circuit board.

13. The multilayered circuit structure of claim 12, further comprising at least one via formed in the at least one additional circuit board for establishing electrical connectivity with at least one of the one or more electrical conductors.

14. A method of encapsulating an integrated circuit comprising one or more micro-devices, the method comprising placing at least one dielectric matrix element on said IC substrate over at least one of its one or more micro-devices and applying an encapsulation mold over said IC substrate and said at least one dielectric matrix element placed thereon to enclose and seal said IC substrate; wherein the placing of the at least one dielectric matrix element comprises attaching the at least one dielectric matrix

element to a carrier element configured to facilitate accurate placement of the at least one dielectric matrix element on the IC substrate.

15. The method of claim 14, further comprising placing the at least one dielectric matrix element with a spacer element thereon.

16. The method of claim 14 comprising removing the carrier element before applying the encapsulation coat.

17. The method of claim 16 wherein the removing of the carrier element comprises detaching at least one portion of the carrier element located on said at least one dielectric matrix element.

18. A method of constructing a multilayered circuit structure comprising attaching at least one circuit board on top of the IC encapsulated using the method of any one of claims 14 to 17, and electrically coupling said at least one circuit board and said encapsulated IC.

19. The method of claim 18 wherein the electrically coupling comprises forming one or more vias in said at least one circuit board.