nector **145**) may be incorporated within and on spring membrane **125**. That is, drive traces **140** could be laid down or etched on a surface of flexible membrane **125**. Similarly, drive traces **535** could be incorporated into and as part of flexible membrane **525** (see FIG. **5**).

[**0037**] One of ordinary skill in the art will also recognize that beads in accordance with FIGS. **8** and **9** (see FIGS. **8** and **9**) could also be used in place of raised structures **130**, **530** and **655** (see FIGS. **1**, **2**A, **2**B, **5** and **6**). Similarly, spring mechanisms **1005** (see FIG. **10**) and **1105** (see FIG. **11**) could be used in place of beads **805** (see FIG. **8**), deformable beads **805** and **905** (see FIGS. **8** and **9**) or raised structures **130**, **530** and **655** (see FIGS. **1**, **5** and **6**).

[**0038**] Referring to FIG. **12**A, in another embodiment force detection in accordance with the invention may be incorporated within a display unit rather than a touchpad. For example, system **1200** includes processor **1205**, standard input-output ("I/O" devices **1210** (e.g., keyboard, mouse, touch pad, joy stick and voice input) and display **1215** incorporating force detection capability in accordance with the invention. Referring to FIG. **12**B, in this embodiment, display **1215** includes display element **1220**, display element electronics **1225**, force element **1230** and force electronics **1235**. In this manner, user **1240** views display element **1220** of display **1200** through force element **1230**. By way of example, display element **1220** and electronics **125** may comprise a conventional liquid crystal display ("LCD" display. Force element **1230** may comprise a force-only sensor (e.g., similar to the embodiments of FIGS. **1** and **2**) or a force and location sensor (e.g., similar to the embodiments of FIGS. **5**-**11**). Force electronics **1235** may comprise processing circuitry as described in FIG. **4**. That is, force electronics **1235** is capable of driving and sensing mutual capacitance signals as described in connection with a touch pad in accordance with the invention.

[**0039**] It will be recognized by those of ordinary skill in the art that use of the described force detection technology should, when applied to display **1215**, utilize transparent or substantially transparent drive and sense traces such as that provided by ITO (i.e., rather than copper which is opaque). Similarly, the gap between the first layer of traces (e.g., drive traces) and a second layer of traces (e.g., sense traces) used to detect an applied force (see discussion above) should be transparent or substantially transparent. For example, compressible transparent spacers could be used to embody offset raised structures **130**, support structures **655**, deformable beads **805**, **905** or spring membranes **1005**, **1105**.

1. A force imaging touch pad, comprising:

a first layer having a first plurality of conductive traces oriented in a first direction on a first surface thereof;

a second layer having a second plurality of conductive traces oriented in a second direction on a first surface thereof; and

a deformable dielectric membrane juxtaposed between the first and second layers,

wherein the first and second plurality of conductive traces are adapted to create a capacitance image when a force is applied to the first layer, the capacitance image indicative of an intensity of the applied force.

2. The force imaging touch pad of claim 1, wherein the first plurality of conductive traces and the second plurality of conductive traces are substantially orthogonal.

3. The force imaging touch pad of claim 1, wherein the deformable dielectric membrane comprises:

a substantially flat membrane having a first surface oriented toward the first layer and a second surface oriented toward the second layer;

a first plurality of raised structures coupled to the first surface of the substantially flat membrane; and

a second plurality of raised structures coupled to the second surface of the substantially flat membrane, wherein the second plurality of raised structures are substantially offset from the first plurality of raised structures.

4. The force imaging touch pad of claim 1, wherein the deformable dielectric membrane comprises:

a substantially flat membrane; and

a plurality of deformable beads affixed to one surface of the substantially flat membrane, wherein the deformable beads are adapted to compress when a force is applied to the first layer toward the second layer.

5. The force imaging touch pad of claim 1, wherein the deformable dielectric membrane comprises one or more thermoplastic springs.

6. The force imaging touch pad of claim 1, wherein the deformable dielectric membrane comprises a dimpled deformable membrane.

7. The force imaging touch pad of claim 5, wherein the thermoplastic springs comprise Polyethylene terephthalate.

8. The force imaging touch pad of claim 1, further comprising a mutual capacitance measurement circuit electrically coupled to the first and second plurality of conductive traces.

9. A force and location imaging touch pad, comprising:

a first layer having a first plurality of conductive traces oriented in a first direction on a first surface thereof and a second plurality of conductive traces oriented in a second direction on a second surface thereof;

a second layer having a third plurality of conductive traces oriented in substantially the first direction;

a base layer;

a first deformable membrane juxtaposed between the first and second layers; and

a second deformable membrane juxtaposed between the second layer and the base layer,

wherein the first and second plurality of conductive traces are adapted to create a first capacitance image when one or more objects come into close proximity to the first surface, the first capacitance image indicative of where the one or more objects are located relative to the first surface,

wherein the second and third plurality of conductive traces are adapted to create a second capacitance image when a force is applied to the first layer, the second capacitance image indicative of an intensity of the applied force.