12. The multi-layer vertical comb-drive actuator of claim 11, further comprising a feedback mechanism coupled to the capacitance measuring means for controlling a position of the second comb structure.

13. The multi-layer vertical comb-drive actuator of claim 1 further comprising a rotating element mechanically coupled to the second comb structure.

14. The multi-layer vertical comb drive actuator of claim 13, wherein the rotatable element is mechanically coupled to a substrate by a flexure.

15. The multi-layer vertical comb-drive actuator of claim 13 further comprising:

a) a frame mechanically coupled to the rotatable flexure and hence the rotating element;

b) a second rotatable flexure disposed along a second axis and mechanically engaged with the frame;

c) a third comb structure having a one or more third comb fingers; and

d) a fourth comb structure having one or more fourth comb fingers, wherein the fourth comb structure is positioned such that the fourth comb fingers of the fourth comb structure are interdigitated with the third fingers of the third comb structure;

wherein one or more of the third and fourth comb structures have one or more comb fingers including at least one first and at least one second conductive layers, wherein the first and second conductive layers are electrically isolated from each other.

16. The multi-layer vertical comb-drive actuator of claim 15, wherein the first and second conductive layers are electrically isolated by an insulating layer.

17. The multi-layer vertical comb-drive actuator of claim 15, wherein the first and second conductive layers are electrically isolated by an air gap.

18. The multi-layer vertical comb drive actuator of claim 15, wherein the first, second, third and fourth comb structures are substantially co-planar.

19. The multi-layer vertical comb-drive actuator of claim 15, wherein the axis and the second axis are substantially orthogonal.

20. The multi-layer vertical comb-drive actuator of claim 15, wherein the second rotatable flexure is attached to a substrate.

21. The actuator of claim 15 wherein the first comb structure is mechanically coupled to the frame and wherein the fourth comb structure is mechanically coupled to the frame.

22. The multi-layer vertical comb-drive actuator of claim 15, wherein one or more of the third comb fingers include the first and second conductive layers.

23. The multi-layer vertical comb-drive actuator of claim 22, wherein one or more of the fourth comb fingers has at least one first conductive layer aligned with the first conductive layer one or more of the third comb fingers.

24. The multi-layer vertical comb-drive actuator of claim 23, wherein an application of a voltage between the second conductive layer of the third comb fingers of and the first conductive layer of fourth comb fingers causes the fourth comb structure to move relative to the third comb structure, thereby causing the rotating element to rotate about the second axis.

25. The multi-layer vertical comb-drive actuator of claim 24, wherein one or more of the fourth comb fingers includes a second conductive layer aligned with the second conductive layer of the third comb structure, wherein the first and second conductive layers of the fourth comb fingers are electrically isolated from each other.

26. The multi-layer vertical comb-drive actuator of claim 25, wherein the first and second conductive layers of the fourth comb fingers are electrically isolated by an insulating layer.

27. The multi-layer vertical comb-drive actuator of claim 25, wherein the first and second conductive layers of the fourth comb fingers are electrically isolated by an air gap.

28. The multi-layer vertical comb-drive actuator of claim 25, wherein an application of a voltage between the first conductive layers of the third comb fingers and the second conductive layer of the fourth comb fingers causes the fourth comb structure to move relative to the third comb structure, thereby causing the rotating element to rotate about the second axis.

29. The multi-layer vertical comb-drive actuator of claim 15, wherein the fourth comb structure has one or more fourth comb fingers comprising the first and the second conductive layers.

30. The multi-layer vertical comb-drive actuator of claim 29, wherein the third comb structure has one or more first comb fingers comprising at least one first conductive layer in aligned with the first conductive layers of the fourth comb fingers.

31. The multi-layer vertical comb-drive actuator of claim 30, wherein an application of a voltage between the first conductive layers of the third comb fingers and the second conductive layers of the fourth comb fingers causes the fourth comb structure to move relative to the third comb structure, thereby causing the rotating element to rotate about the second axis.

32. The multi-layer vertical comb-drive actuator of claim 15 further comprising a means for measuring a capacitance between the third comb fingers and the fourth comb fingers.

33. The multi-layer vertical comb-drive actuator of claim 32 further comprising a feedback mechanism coupled to the capacitance measuring means.

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