

Having described the Invention, that which is claimed is:

**1.** A bimorph actuator that is operational up to temperatures of about 150° C., comprising:

- a top active layer;
- a substrate; and
- a bottom active layer.

**2.** The bimorph actuator of claim **1** wherein the top and bottom active layers are comprised of piezoelectric materials.

**3.** The bimorph actuator of claim **1** wherein the top active layer and the bottom active layer are subjected to positive electric fields.

**4.** The bimorph actuator of claim **3** wherein the top active layer is polarized along the plane of the material, parallel to the substrate.

**5.** The bimorph actuator of claim **3** wherein the bottom active layer is polarized through the thickness of the active material, perpendicular to the substrate.

**6.** The bimorph actuator of claim **1** that is comprised of macro fiber composites.

**7.** The bimorph actuator of claim **1** that further comprises a power source.

**8.** The power source of claim **7** that is comprised of a 3 volt battery.

**9.** The power source of claim **7**, wherein the 3 volt batter is connected to a circuit comprising two channels, each of which provides 750 volts, for a total of 1500 volts.

**10.** A bimorph actuator that is operational up to temperatures of about 150° C., comprising:

- a top active layer that is polarized along the plane of the material, parallel to the substrate; and

- a bottom active layer that is polarized through the thickness of the layer, perpendicular to the substrate.

**11.** The bimorph actuator of claim **10** wherein the top active layer and the bottom active layer are comprised of piezoelectric materials.

**12.** The bimorph actuator of claim **10** wherein the top active layer and the bottom active layer are subject to positive electric fields.

**13.** The bimorph actuator of claim **10** that further comprises a power source.

**14.** The power source of claim **13** that is a 3 volt battery.

**15.** The bimorph actuator of claim **12** wherein the electric fields are not equal.

**16.** The bimorph actuator of claim **10** that further comprises a substrate.

**17.** The bimorph actuator of claim **10** that operates in small spaces.

**18.** A bimorph actuator that is operational up to temperatures of about 150° C., comprising:

- a top active layer; and
- a bottom active layer.

**19.** The bimorph actuator of claim **18**, wherein the top active layer is connected to the bottom active layer with an adhesive.

**20.** A bimorph actuator that is operational up to about 50% of Curie temperature, comprising:

- a top active layer; and
- a bottom active layer.

**21.** The bimorph actuator of claim **19** that is operational in small spaces.

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