deflection for the polymer, the desired deflection corresponding to a structural state of the device that results in the desired stiffness for the device, wherein the polymer has an elastic modulus at most about 100 MPa.

68. The system of claim **67** wherein the desired deflection for the polymer corresponds to a polymer shape that results in the desired stiffness of the device.

69. The system of claim **67** wherein the polymer shape comprises a bent portion.

70. The system of claim **67** wherein the electroactive polymer is a dielectric elastomer.

71. The system of claim **67** wherein the device comprises two rigid members whose position relative to each other changes with polymer deflection.

72. The system of claim **67** wherein the desired deflection results from actuation using the electrodes.

73. The system of claim **67** wherein the control electronics comprise a high voltage source in electrical communication with the at least two electrodes that supplies a voltage greater than 200 Volts.

74. A system for providing damping using an electroactive polymer transducer, the system comprising:

a device comprising

a mechanical interface capable of displacement,

a transducer comprising at least two electrodes, and an electroactive polymer in electrical communication with the at least two electrodes and coupled to the mechanical interface, the polymer arranged in a manner that allows deflection of the polymer corresponding to displacement of the mechanical interface wherein the polymer has an elastic modulus at most about 100 MPa;

an open loop control source in electrical communication with the at least two electrodes and designed or configured to set or change an electrical state that results in a desired damping for the device; and

dissipative electronics in electrical communication with the at least two electrodes and designed or configured to dump electrical energy in response to a change in the electrical state.

75. The system of claim **74** wherein the open loop control is further designed or configured to set or change an electrical state that results in a desired stiffness for the device.

76. The system of claim **74** wherein the dissipative electronics comprise a resistor.

77. The system of claim **76** wherein the resistor has a resistance that produces an RC time constant for the resistor and the transducer in the range of about 0.1 to about 4 times a frequency of interest.

78. A system for providing damping using an electroactive polymer transducer, the system comprising:

a device comprising

a mechanical interface capable of displacement,

a transducer comprising at least two electrodes, and an electroactive polymer in electrical communication with the at least two electrodes and coupled to the mechanical interface, the polymer arranged in a manner that allows deflection of the polymer corresponding to displacement of the mechanical interface wherein the polymer has an elastic modulus at most about 100 MPa;

dissipative electronics in electrical communication with the at least two electrodes and designed or configured to dump electrical energy in response to a change in the electrical state;

control electronics in electrical communication with the at least two electrodes and designed or configured to set or change an electrical state that results in a desired damping for the device; and

a sensor configured to detect a parameter related to the desired damping and provide feedback to the control electronics.

79. The system of claim **78** wherein the control electronics are further designed or configured to set or change an electrical state that results in a desired stiffness for the device.

80. The system of claim **78** wherein the control electronics further comprise a logic device configured to set or change the electrical state.

81. The system of claim **78** wherein the dissipative electronics comprise a resistor.

82. The system of claim **81** wherein the resistor is a variable resistor controlled by the logic device.

83. A method for providing a desired stiffness using an electroactive polymer transducer, the transducer comprising at least two electrodes and an electroactive polymer in electrical communication with the at least two electrodes, the method comprising applying a substantially constant voltage to the at least two electrodes using control electronics in electrical communication with the at least two electrodes wherein the polymer has an elastic modulus at most about 100 MPa.

84. The method of claim **83** wherein the substantially constant voltage is applied by a buffer capacitor and an open loop control in electrical communication with the at least two electrodes.

85. A method for providing a desired stiffness using an electroactive polymer transducer, the transducer comprising at least two electrodes and an electroactive polymer in electrical communication with the at least two electrodes, the method comprising applying a substantially constant charge to the transducer using control electronics in electrical communication with the at least two electrodes wherein the polymer has an elastic modulus at most about 100 MPa.

86. A method for providing a desired stiffness using an electroactive polymer transducer, the transducer comprising at least two electrodes and an electroactive polymer in electrical communication with the at least two electrodes, the method comprising applying an electrical state to the transducer, using control electronics in electrical communication with the at least two electrodes, that that places the polymer in a stiffness regime that provides the desired stiffness wherein the polymer has an elastic modulus at most about 100 MPa.

87. The method of claim **86** wherein the stiffness regime corresponds to a non-linear stiffness response of the polymer.

88. The method of claim **86** further comprising actuating the polymer to achieve the desired stiffness.

89. A system for providing a desired stiffness for a portion of footwear, the system comprising:

footwear designed or configured for human usage, the footwear comprising

a portion of the footwear capable of displacement,

a transducer comprising at least two electrodes, and an electroactive polymer in electrical communication with the at least two electrodes and coupled to the portion, the polymer arranged in a manner that allows deflection of the polymer corresponding to displacement of the portion wherein the polymer has an elastic modulus at most about 100 MPa; and

control electronics in electrical communication with the at least two electrodes and designed or configured to set or change an electrical state of the transducer in order