CLAIMS

1. A cathode mixture for use in a biocompatible battery wherein the biocompatible battery comprises:

   a first and second current collector;

   an anode; and

   a laminar structure;

   wherein at least one layer of the laminar structure has a volume removed to form a cavity, wherein the cavity is filled with a cathode mixture, wherein the cathode mixture comprises:

   manganese dioxide;

   graphite;

   polyisobutylene (PIB);

   toluene;

   wherein the cathode mixture is capable of filling the cavity, based on its rheology, while maintaining electroconductivity through a filled cathode structure in the cavity.

2. The cathode mixture of claim 1 wherein the cathode mixture further comprises a hydrophilic binder.

3. The cathode mixture of claim 1 wherein the cathode mixture further comprises a hydrophobic binder.

4. The cathode mixture of claim 3 wherein the hydrophobic binder comprises a fluorocarbon solid.

5. The cathode mixture of claim 4 wherein the fluorocarbon solid comprises polytetrafluoroethylene (PTFE).

6. The cathode mixture of claim 1 wherein the milling of said component comprises jet milling.

7. The cathode mixture of claim 1 wherein the cavity is first lined with a hydrogel separator.

8. A biomedical device apparatus comprising:
    an insert device comprising:
        an electroactive element responsive to a controlling voltage signal;
        a biocompatible battery
            wherein the biocompatible battery comprises:
            a first and second current collector;
            an anode;
            a separator;
            a laminar structure, wherein at least one layer of the laminar structure has a volume removed to form a cavity; and
            a cathode mixture, wherein the cathode mixture comprises:
                manganese dioxide;
                graphite;
                polyisobutylene (PIB);
                toluene;
            wherein at least an average particle size of one component of the cathode mixture is reduced in particle size by milling said component; and
            wherein the cathode mixture is capable of filling the cavity, based on its rheology, while maintaining electroconductivity through a filled cathode structure in the cavity; and
        a circuit electrically connected to the biocompatible battery, wherein the circuit provides the controlling voltage signal.

9. The apparatus of Claim 8 wherein the biomedical device is a contact lens.

10. A cathode mixture for use in a biocompatible battery wherein the biocompatible battery comprises:

a first and second current collector;

an anode; and

a means for storing the cathode mixture;

wherein the cathode mixture is capable for storage within the biocompatible battery, based on its rheology, while maintaining electroconductivity and biocompatibility;

wherein the cathode mixture comprises:

manganese dioxide;

graphite;

polyisobutylene (PIB);

toluene.

11. A biomedical device apparatus comprising:

an insert device comprising:

an electroactive element responsive to a controlling voltage signal;

a biocompatible battery,

wherein the biocompatible battery comprises:

a first and second current collector;

an anode;

a separator; and

a means for storing a cathode mixture;

wherein the cathode mixture is capable for storage within the biocompatible battery, based on its rheology, while maintaining electroconductivity and biocompatibility;

wherein the cathode mixture comprises:

manganese dioxide;

graphite;

polyisobutylene (PIB);

toluene; and

a circuit electrically connected to the biocompatible battery, wherein the circuit provides the controlling voltage signal.

12. A biomedical device apparatus comprising:

an insert device comprising:

an electroactive element responsive to a controlling voltage signal;

a biocompatible battery,

wherein the biocompatible battery comprises:

a first and second current collector;

an anode;

a separator; and

a means for storing a cathode mixture;

wherein the cathode mixture is capable for storage, based on its rheology, while maintaining electroconductivity and biocompatibility;

wherein the cathode mixture comprises:

manganese dioxide;

graphite;

polyisobutylene (PIB);

toluene; and

wherein at least an average particle size of one component of the cathode mixture is reduced in particle size by milling said component; and

a circuit electrically connected to the biocompatible battery, wherein the circuit provides the controlling voltage signal.