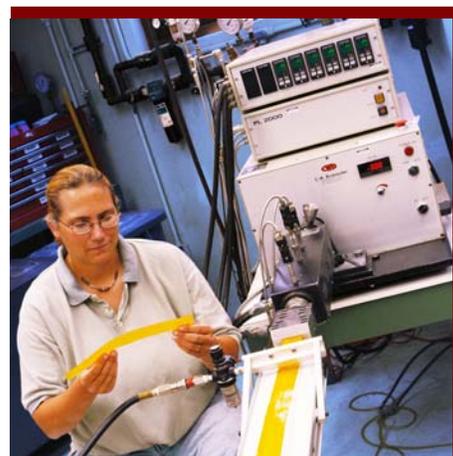


# Electroactive BioPolymers

## What is this technology?

Electroactive biomaterials are a new class of materials representing conductivity in plastic (long considered insulative) at levels comparable to conventional metals; these materials are produced using only natural polymers.



## What problem does it address?

Synthetic electroactive polymers (EAPs) have desirable levels of conductivity, however they are controlled by their processing conditions. Once formed, their physical properties limit their use. For example, they are:

- Intractable -- difficult to mold or manipulate
- Insoluble – difficult or impossible to dissolve
- Disordered – their structure lacks a regular, predictable arrangement

**Natural polymers are not subject to these limitations.**

## Who could use this technology?

Electroactive biomaterials could be used for applications such as:

- Biosensors and environmentally sensitive membranes
- Actuators and artificial muscles
- Corrosion protection
- Electronic shielding
- Environmentally sensitive membranes
- Visual displays
- Energetic materials such as solar materials and components in high energy batteries

## How is this technology unique?

Natural polymers:

- Are more easily manipulated
- Display more versatility in their physical properties than most synthetic EAPs
- Are inherently more environmentally friendly than synthetics
- Are derived from inexpensive, renewable resources

## Breakthrough Technology

This technology needs partners to evaluate prototypes or provide material specifications for specific applications. There are major opportunities for the development of electroactive biomaterials using integrated biological, chemical and engineering approaches.

## Stage of Development

- Prototypes to demonstrate the applications of biobased electroactive biomaterials are being developed.
- A collaboration to develop anti-corrosion technology is underway.

## IP Status

No disclosure to date

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