Biofelt®

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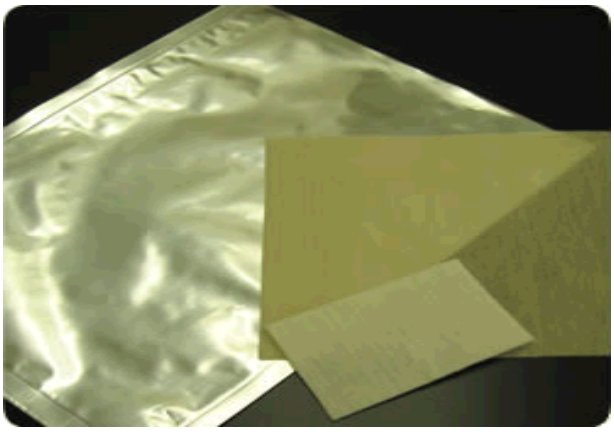
Polymer technology is fueling a new wave of technological medical marvels. This is not a new science, but one that is advancing at a speed that will soon lessen the use of metals and hard plastic used in medical devices. For years, they have been the dominant choice because of their strength and longevity of life, but science is developing a better answer, an answer that may rewrite the book on building, supporting, and treating the tissue systems of the body.

According to designnews.com, "The next big thing in medical design is implanted devices made of biodegradable (also called bio-absorbable or re-absorbable) plastic compounds."[1] These polymers are being made worldwide and locally there is a dominant player in the game, Concordia Fibers.

Concordia, located in Coventry, RI was originally founded in 1920 and began as a pillar in the early Berkshire Hathaway textile empire. It has used its textile expertise in fields ranging from the traditional production of synthetic yarns, to producing advanced composites for aerospace, and more recently channeled their expertise toward the development of a new-generation fabric known as Biofelt®.

A non-woven 3D felt has successfully demonstrated the ability to rapidly grow cells and form an organized tissue structure. Its distinguished, enabling factor, is it's ability, through the non-woven felt process, to develop a high porosity (>97%) along with excellent flexibility an softness. It is produced from polyglycolic acid (PGA) in 20 cm x 30 cm felts, and it thickness can range from .5 to 7mm and density from 30 to 300 mg/cc.

The main advantage of this polymer felt is that it degrades. Biodegradables are becoming more and more popular in areas such as orthopedics because they require no follow-up surgery to remove hardware, are compatible with Magnetic resonance imagine, and avoid corrosion seen in some of the metals implanted into the body. [1]



Through manipulating these felts, there are numerous possibilities for their use. Some such uses include; ligament replacement, vessel replacement, localized radiation and common tissue repair. They are designed to support the growth of stem cells teased out of fat cells and once implanted into the body; they degrade, leaving behind new, individually engineered tissue. All of these applications are currently, through the support of Concordia fabrics, working in collaboration with some of the best doctors in the world, well into their respective trial phases.

[1]http://www.designnews.com/article/CA6330957.htm
http://www.concordiafibers.com/about/history.html
http://www.designnews.com/article/CA6330957.html
Burghouwt, Art. Exec. Vice President Medical. Concordia Fiber