

Fiber modification

Modify cellulose fibers and surfaces to obtain desired properties.

The fiber modification area is based on several patented technologies that modify the functionality of cellulose fibers or surfaces. One of the technologies we use is based on the plant enzyme XET to modify the properties of wood fibers in vitro. Other technologies include super hydrophobic surfaces, magnetic cellulose, super strong papers based on nano-fibers and cellulose spheres.

The XET technology enables modification of cellulose by facilitating the attachment of a large variety of functional groups, resulting in new valuable properties of cellulose based material. This broadens the market for the use of wood fibers and cellulose by providing the chemical tools to make them more attractive as polymers in many applications.

The super hydrophobic surface technology is a technology that produces surfaces which mimics super hydrophobic surfaces in nature, e.g. lotus plants. This makes it possible to readily make surfaces which withstands water.

The magnetic cellulose technology is a technology that can make cellulose magnetic based on a treatment of nano-cellulose. This technology has potential for applications in the electronic and separations fields.

The super strong paper is also based on a treatment of nano-cellulose for the purpose to make it very strong. This technology has potential in many areas where the use of paper could be expanded in present applications or new applications could be enabled.

The cellulose sphere technology is a method to make small cellulosic spheres containing in principle any liquid. The sphere can also by chemical means be induced to pump out the liquid it contains.

The use of our technologies result in:

- Increased strength of fiber products
- New surface properties of fiber products
- Improvements in existing fiber processes, such as in present day pulp and paper making

These improved and new properties have a wide range of applications. Examples include:

Barriers in packaging material

Increased strength of paper, packaging and composite materials

Increased adsorption in hygiene products

Binding of proteins or peptides in biotechnology or diagnostic applications

Completely new applications of cellulose based products

By adding value to the final product our technology brings benefits to for example the pulp and paper, textile, packaging, hygiene, medical and filter and bio-separation industries.