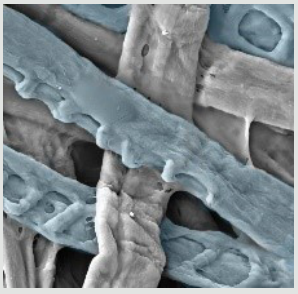
Cascades | CS+

Cascades Research and Development Centre boasts state-of-the-art microscopy services

The microscopy specialists at the Cascades CS+ Research and Development Centre have over 45 years of expertise in the pulp and paper sector, as well as in the broader materials sector (e.g. metal, wood and plastic). They offer services that are tailored to customers' specific needs.

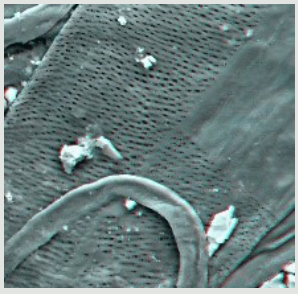
Since the creation of the microscopy team (which goes almost as far back as the inception of the Cascades Research and Development Centre in 1985!), it has completed more than 5,000 microscopy projects for customers in a wide range of industries, such as packaging, pulp and paper, agri-food, aerospace and the auto industry.

The team has a solid reputation, and it has even more expanded its portfolio of services in recent years. The entire team is dedicated to delivering operational solutions while respecting deadlines and the unique situation of each client.



Southern yellow pine

Sulphur on fibre

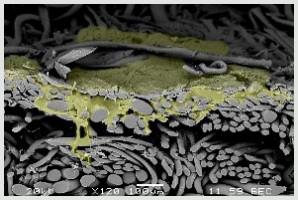


Paper birch

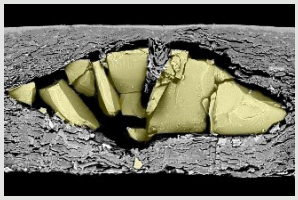
Fibre analysis

The services offered by the microscopy team include analyzing the fibres that make up our products and those of our competitors. Using optical microscopes, they can determine which type of fibre (e.g. softwood, hardwood, tree species, chemical or mechanical treatments, alternative fibre) is present and in what proportion. These analyses are very useful for understanding the behaviours of physical properties.

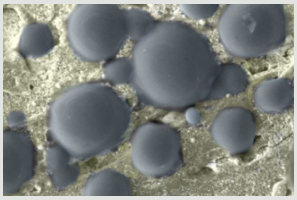
For example, a hardwood fibre (e.g. eucalyptus) is shorter and more flexible, which makes it softer. On the other hand, a softwood fibre (e.g. southern yellow pine) is longer, which makes the material stronger.



Wax in a felt



Glass on cardboard



Adhesive on a Post-it note

Contaminant analysis
Another highly sought-after service offered by the microscopy team is the analysis of contaminants such as fibres, contaminants that clog felt, waxes, oils, various coloured stains, sclerites, bark, insect particles and metals. The analysis is quick (usually takes less than a day) and often allows them to understand the source of the contamination, make the necessary corrections to the process and quickly get back to client, if the product is the source of a complaint, for example. The results, which are presented as a technical report, are given to the client and explained so that they have a thorough understanding of the information contained in it.

The team also helps optimize existing products and develop new ones, particularly when the innovation or product quality teams encounter problems, such as:

- Contaminants on a paper machine or metal alloys
- Structural defects
- Corrosion problems
- Carbon on packaging materials after a fire
- Problems with adhesive or printing on boxes
- Presence of mushrooms on a packaging

In short, microscopy is a versatile and powerful tool that allows us to better understand our products and those of our competitors. Through its multidisciplinary expertise, the microscopy team helps solve very concrete operational issues in our Cascades plants.