

*InnoTech Alberta is a research and innovation organization, with a range of technologies available for licensing. Our focus is on the growth and development of technology-based sectors and the commercialization of technology in Alberta. We provide business and technical services, and initiatives that encourage a strong science, technology and entrepreneurial culture in Alberta.*

## LICENSING OPPORTUNITY

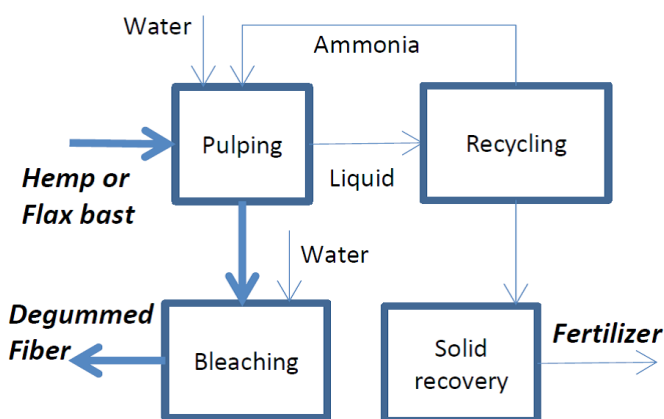
# Ammonia Peroxide Degumming Process

## LEVERAGE OUR TECHNOLOGY

InnoTech Alberta has a variety of technologies available for licensing. We will work with companies, from small to large, to set up mutually beneficial licensing deals. With more than 90 years in applied research and development, we are an experienced commercialization partner. InnoTech's licensing opportunities are the result of our world-renowned research programs. Contact us to explore these opportunities.

## TECHNOLOGY OVERVIEW

A process for producing dissolving pulp with a novel degumming step that uses hydrogen peroxide and ammonia, rather than alkaline. The invention comprises a method of forming dissolving pulp from bast fibre plants, comprising the steps of: (a) pulping the plant fibre with degumming liquor

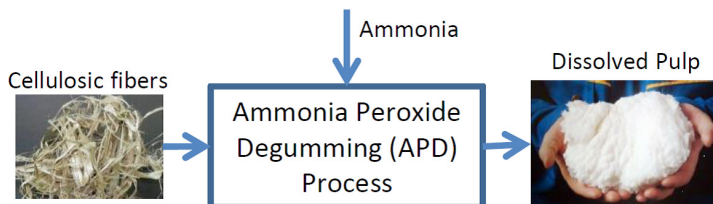


Process flow diagram for degumming of cellulosic fibers

comprising ammonia and hydrogen peroxide; (b) recovering and recycling an aqueous portion from step (a); (c) recovering the pulped fibres and bleaching to produce dissolving pulp.

## ADVANTAGES

- » Lower operating cost: Compared to alkaline degumming, ammonia peroxide degumming operates under lower pressure and demands less energy.
- » Environmentally friendly: Ammonia can be easily recycled and reused through this process, resulting in lower chemical consumption.
- » Value-added by-products: Dissolved lignin and hemicellulose with ammonia could be used as a fertilizer.
- » Smaller footprint: Compared to alkaline degumming technology, the size of an ammonia peroxide degumming plant may be smaller because the degumming and bleaching steps are combined into one.



Degumming cellulosic fibers and producing high quality dissolving pulp with ammonia

# Ammonia Peroxide Degumming Process

## COMMERCIAL APPLICATIONS

- » Manufacturing viscose fiber (rayon) or film
- » Producing cellulose derivatives such as cellulose acetate, ethyl cellulose, cellulose nitrate (nitrocellulose, guncotton), and carboxymethylcellulose (CMC)

## STATUS

Issued patents in various jurisdictions, including US patent:

- » US 7892397

This technology is available for licensing.

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## WANT TO EXPLORE THIS OPPORTUNITY?

*Licensing@albertainnovates.ca*

Our province is blessed with abundant natural resources, world-class infrastructure and research institutions, a highly skilled workforce, and a dynamic, entrepreneurial business community. Alberta Innovates harnesses these strengths by acting as the catalyst between government, industry and academia, to solve some of the biggest challenges facing our province.

### TECHNICAL SERVICES

Helping organizations develop their technologies faster and smarter through a subsidiary, InnoTech Alberta.

- » 100,000 m2 of product/process development and scale-up facilities in the areas of petroleum, environment and carbon management, bio and industrial technologies
- » 300 hectare research farm, three greenhouses, and 36 growth chambers

### FUNDING PROGRAMS

- » Fostering an entrepreneurial culture and increasing Alberta's critical mass of innovation talent
- » Post-secondary investment programs offer a broad range of support to researchers at all stages of their careers, from graduate students to the world's top researchers

- » Industry investment programs offer support to Alberta-based SMEs in a variety of ways to help accelerate their growth and success

### REGIONALLY ACCESSIBLE COMMERCIALIZATION SUPPORT

- » Making connections and pointing businesses and entrepreneurs in the right direction
- » Alberta Regional Innovation Network System - an integrated province-wide system ensuring SMEs and innovators have access to vital services and resources to help them succeed

### LICENSING SERVICES

- » Managing the translation of Alberta Innovates intellectual property into business solutions
- » Facilitating licensing deals with industry anywhere in the world