




STRENGTH FROM WOOD

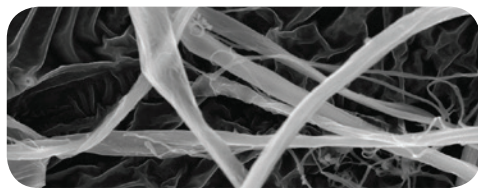
Kruger Biomaterials has built the world's first commercial-scale facility producing cellulose filaments — a biomaterial with exceptional strengthening properties.

- FiloCell® cellulose filaments have a wide range of potential applications to reinforce many materials such as thermoplastics, concrete, adhesives, non-woven fabrics, and coatings
- Kruger's collaboration with FPInnovations in creating this innovative, clean technology is helping to tackle Canada's sustainability challenges and is a leading edge technology in the Canadian forest sector bio-economy

UTILIZING CANADA'S FORESTS: RESULTS EXPECTED



**5 TONNES
PER DAY OF
FILOCELL®**



**80 TO 300 NANOMETRES WIDE
UP TO 2 MILLIMETRES LONG**

**ESTIMATED
NORTH AMERICAN
MARKET POTENTIAL
120,000
TONNES PER YEAR**



INNOVATING WITH WOOD

- FPInnovations developed the leading-edge and patented method for the production of cellulose filaments
- FiloCell® is obtained by peeling wood fibres into very thin and long strands using a mechanical process
- the flexible, ultra-lightweight material with unique bonding capacities makes it an exceptional reinforcement additive
- high degree of replicability at other Canadian pulp mills

POTENTIAL OPPORTUNITIES

ECONOMIC: INCREASED MILL PROFITABILITY THROUGH ENHANCED PRODUCTIVITY, PRODUCT DIVERSIFICATION, AND SALES

ENVIRONMENT: NO CHEMICALS OR ENZYMES USED IN PRODUCTION

MARKET: COMMERCIALIZATION WILL ENABLE THE CANADIAN PULP AND PAPER INDUSTRY TO REMAIN A GLOBAL LEADER IN THE DEVELOPMENT OF INNOVATIVE WOOD FIBRE PRODUCTS



KRUGER BIOMATERIALS IS OWNED BY KRUGER, A MAJOR CANADIAN PRODUCER OF TISSUE PRODUCTS, PUBLICATION PAPERS, PACKAGING PRODUCTS AND BIOMATERIALS

PROJECT LOCATION: TROIS-RIVIÈRES, QUÉBEC

The unique potential of cellulose filaments, combined with our R&D efforts, will help the Canadian forest industry progress and have a bright future.

— Daniel Archambault
Executive Vice President
Kruger Biomaterials

Investments in Forest Transformation Program: In 2010, Natural Resources Canada's Canadian Forest Service created the Investments in Forest Industry Transformation Program (IFIT) to support Canadian companies to develop and grow markets for new and innovative high-value products using Canada's forest resources. *For more information www.nrcan.gc.ca/forests/federal-programs/13139*

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