

## A SUCCESS STORY

### ECO-FRIENDLY AND LIGHTER CAR PARTS

Researcher **Mihaela Mihai** of the **National Research Council's** (NRC) Centre for Automotive and Surface Transportation Research, in collaboration with four industrial partners, has developed new eco-friendly materials based on ultra-lightweight biocomposites. These innovative materials will be used to create automotive components like instrument panels, ceiling lights, door panels, etc. The parts incorporate Canadian cellulose fibres, recycled carbon fibres and recycled polypropylene (PP). Made from 100% renewable and recycled resources, these materials are up to 60% lighter, 10% less expensive and offer performance that is equal to or better than current parts.


**International Automotive Components** (IAC Group), a major North American automotive parts manufacturer, sought to differentiate itself from competitors by offering automakers lighter and more cost-competitive products with fewer environmental impacts made from North American raw materials.

Two Canadian SMEs collaborated with the NRC and the IAC Group to develop the new ecomaterials required to manufacture these products:


- Gatineau's **Papier Masson Ltd** (PML) was looking to convert its surplus thermomechanical pulp into industrial biomaterials. This project helped diversify its revenues and open the door to other markets; trials are currently underway to develop other products.
- Vancouver's **Performance Biofilaments Inc.** (PBI) sought to add value to its cellulosic fibres and fibrils. The project enabled the company to integrate its cellulosic materials into nonwoven, thermally consolidated products for use in the manufacturing of specific automotive components.

The collaboration between both companies and the NRC team continues to actively pursue other environmentally friendly products for the Canadian and Quebec industry.

The formulations and processes developed by the NRC at Boucherville's polymer formulation laboratory have been scaled to industrial standards with help from the IAC Group. Prototypes were then manufactured at the IAC Group's facility in Troy, Michigan, in the United States. The partners were able to develop new skills that will be useful in the development of new products. This project also served to build a North American supply chain. In addition to the economic and environmental benefits of the new markets, the project created new jobs at PBI, while Papier Masson hopes to create new positions over the next two years as the market for environmentally friendly materials continues to grow.

 *This project helped us confirm our fibre's role in the manufacturing of high-performance and economical composite polymers, crowning many years of effort.*

*The outstanding work of the team dedicated to this project helped us orient our technical development and discover new applications, giving us access to a wide range of new markets.*

*It's a great demonstration of applied science.* 

- **Sylvain Bussière Eng., M.Sc.A.**,  
Technical Director, S.E.C.  
Papier Masson WB



#### SECTORS

Biosourced materials  
Polymers  
Composites



#### APPLICATIONS

Transport  
Automotive industry



#### TRL

4-6



#### DURATION

24 months  
(2017-2018)