

July 27, 2016

Project Funding – Alberta Bio Future

The Alberta Bio Future (ABF) program is managed and funded by Alberta Innovates Bio Solutions (AI Bio), with additional funding from the Alberta Ministry of Economic Development and Trade.

Of 61 projects approved for funding by AI Bio, the following 47 have signed grant agreements in place. The remaining agreements are in the process of being finalized. This list will be updated as more grants are finalized.

The grants are going toward a diverse range of projects by researchers and/or companies developing bio-based products and/or bioindustrial technologies. The projects must utilize biomass that can be found in Alberta. Funding amounts were determined on a case-by-case basis according to program criteria. Length of projects vary.

For more information about individual projects, please contact:

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Project Name	Funding Amount Committed by AI Bio	Total Project Cost (includes cash and in-kind contributions from other sources)	Total Amount From Other Contributors (includes cash and in-kind)	Funding Recipient
Development of a Technical Guide for the Evaluation of Oriented Strand Board Structural Insulated Panels (SIPs) for National Building Code Compliance	\$180,000.00	\$1,587,000.00	\$1,407,000.00	National Research Council Canada
Nanocrystalline Cellulose (NCC) reinforced foam-core sandwich composite structures	\$240,000.00	\$411,300.00	\$171,300.00	Ayranci, Cagri - University of Alberta
Production of Carbon Fiber Using Lignin Precursor	\$140,000.00	\$198,000.00	\$58,000.00	Ayranci, Cagri - University of Alberta
Monomers and biopolymers from renewable plant oil for various industrial applications	\$194,400.00	\$391,540.00	\$197,140.00	Ullah, Aman - University of Alberta

Bio-based laundry and household cleaning surfactants from Alberta beet sugar; value realization from biodiesel winterization	\$27,200.00	\$37,700.00	\$10,500.00	Tiege, Paul - Olds College
Abrasion resistant, anti-corrosion pipeline coatings from nano cellulose reinforced polyurethane.	\$387,000.00	\$553,000.00	\$166,000.00	Curtis, Jonathan - University of Alberta
Fast Growing Wood Biomass in the Energy Production Chain	\$53,000.00	\$94,700.00	\$41,700.00	Alberta Innovates - Technology Futures
Fabrication of a 4.5V supercapacitor stack prototype with electrode-grade nanoporous carbon from biochar using CNC-based inkjet printing	\$270,000.00	\$1,009,800.00	\$739,800.00	Kovalenko, Andriy - University of Alberta
Algae-based Biomass for Production of Fuels and Chemicals	\$100,000.00	\$320,000.00	\$220,000.00	Kumar, Amit - University of Alberta
Bioindustrial Innovation Canada Project: Cellulosic Sugar Producers Cooperative	\$50,000.00	\$185,000.00	\$135,000.00	Bioindustrial Innovation Canada
Optimization of Alberta Innovates Technology Futures (AITF) Cellulose Nanocrystals (CNC) Pilot Plant Processes	\$100,000.00	\$190,000.00	\$90,000.00	Alberta Innovates - Technology Futures
BRIMS PHASE 3	\$1,999,600.00	\$6,489,600.00	\$4,490,000.00	The Silvacom Group
Economy Wide Impacts of Second Generation Biofuels: A General Equilibrium Approach	\$22,500.00	\$154,000.00	\$131,500.00	Rude, James - University of Alberta
Economic availability of cellulosic ethanol feedstocks from private land: A land use change model	\$22,500.00	\$161,120.00	\$138,620.00	Luckert, Martin - University of Alberta
Bio-resource Assessment for Olds College	\$25,000.00	\$50,000.00	\$25,000.00	Thompson, Debbie - Olds College

Development of Nanocellulose Based Novel Smart Window	\$100,000.00	\$125,000.00	\$25,000.00	All Weather Windows Ltd.
Biomass Mapping/Community Investment Attraction Project and Alberta Biomass Mapping Project Agreement	\$75,000.00	\$112,500.00	\$37,500.00	The Silvacom Group
Isothermal Plug Flow CNC Reactor (IPFCNCR) for Alberta Innovates - Technology Futures' (AITF) Cellulose Nanocrystal (CNC) Pilot Plant	\$150,000.00	\$374,000.00	\$224,000.00	Alberta Innovates - Technology Futures
**Development of Value-Added CNC for Application as Electronic Component in Sustainable Batteries	\$25,000.00	\$25,000.00	\$0.00	Baumgartner, Thomas - University of Calgary
**Realizing potential benefits of CNC for the rapidly developing additive manufacturing market	\$25,000.00	\$25,000.00	\$0.00	Ayranci, Cagri - University of Alberta
**Removal of trace pharmaceuticals and endocrine-disrupting chemicals from water using filtering systems based on modified cellulose nanocrystals	\$25,000.00	\$25,000.00	\$0.00	Burt, Helen - University of British Columbia
**Does CNC incorporation enhance the properties of UV-cured polyurethane coatings?	\$25,000.00	\$25,000.00	\$0.00	Curtis, Jonathan - University of Alberta
**Novel nanocrystalline cellulose hydrogel for 3D bioprinting of organs on chip	\$25,000.00	\$25,000.00	\$0.00	Sanati-Nezhad, Amir - University of Calgary
Reducing CNC production cost by reusing the spent sulfuric acid in bleach plant	\$50,000.00	\$100,000.00	\$50,000.00	Alberta-Pacific Forest Industries Inc.

Research and Development of Hemp Fibre Based Mat Products	\$100,000.00	\$168,000.00	\$68,000.00	BioComposites Group Inc.
Development of nutrient enriched granular biochar for applications in reclamation of industrially disturbed lands.	\$37,125.00	\$120,797.00	\$83,672.00	Soil Savvy Inc.
Pilot Facility for the Production of Natural/Industrial Reinforcing Fibre	\$580,000.00	\$1,059,800.00	\$479,800.00	Canadian Greenfield Technologies Corporation
Novel process enhancements for advancing Cellulose Nanocrystal production for high end applications and improved economics	\$450,000.00	\$690,000.00	\$240,000.00	Alberta-Pacific Forest Industries Inc.
Commercialization of Bio-polyol and Bio-based Spray Foam	\$850,000.00	\$1,337,500.00	\$487,500.00	BioFoam Inc.
Pre-commercial Pilot Plant Optimization of the Lipid to Hydrocarbons (LTH) Operation	\$500,000.00	\$1,262,656.00	\$762,656.00	FORGE Hydrocarbons Corp.
Development of a liquid-applied moisture vapor permeable air barrier and fire retardant nano-composite emulsion	\$308,869.00	\$411,825.00	\$102,956.00	BarrierTEK Inc.
Optimization of Cellulose NanoCrystal Hydrogel for Inhibition of Biofilm Formation on Medical Devices	\$190,000.00	\$240,000.00	\$50,000.00	Liu, Yang - University of Alberta
Development of modified cellulose nanofibrils (M-CNF) for controlled atmosphere (CA) food packaging films	\$213,750.00	\$300,000.00	\$86,250.00	Boluk, Yaman - University of Alberta

Cellulose Nanocrystalline based antimicrobial coatings for biofilm prevention	\$403,750.00	\$403,750.00	\$0.00	Heyne, Belinda - University of Calgary
Development of Biobased Resins for Industrial Use in Fibre-mat Based Composite Biomaterials	\$392,825.00	\$676,925.00	\$284,100.00	Curtis, Jonathan - University of Alberta
Catalytic deoxygenative depolymerization of lignin under mild conditions. Production of "petrochemicals" from waste biomass	\$353,400.00	\$712,400.00	\$359,000.00	Stryker, Jeffrey - University of Alberta
Engineering lignin as a precursor for carbon fiber using novel biodegradation and purification techniques	\$306,375.00	\$417,375.00	\$111,000.00	Ayranci, Cagri - University of Alberta
Fabrication of CNC based bio-nanocomposite for bone tissue repair	\$172,188.00	\$232,188.00	\$60,000.00	Vakili, Mohammad Reza - University of Alberta
Cellulose nanocrystal (CNC) materials for novel applications in electronics and optoelectronics	\$167,200.00	\$249,900.00	\$82,700.00	Wang, Xihua - University of Alberta
Co-conversion of C1 wastes from the Albertan energy and pulp and paper sectors by methylotrophic bacteria	\$348,650.00	\$468,650.00	\$120,000.00	Sauvageau, Dominic - University of Alberta
Design and Application of a High Pressure Microwave Drop-In Biofuel Reactor System	\$362,900.00	\$748,400.00	\$385,500.00	Bressler, David - University of Alberta
Utilization of Boiler Fly Ash from Alberta Pulp and Paper Mills for the Removal of Hydrogen Sulfide from Industrial Gas Streams	\$128,060.00	\$163,060.00	\$35,000.00	Mussone, Paolo - NAIT

Converting Nanocellulose into High-value 1-Dementional Nanocarbons for Energy Storage	\$123,500.00	\$153,500.00	\$30,000.00	Thudat, Thomas G. - University of Alberta
Engineered microbial cells for the biosynthesis of industrial oleochemicals	\$291,573.00	\$442,794.00	\$151,221.00	Stuart, David - University of Alberta
NSERC Industrial Research Chair Agreement	\$80,000.00	\$1,490,000.00	\$1,410,000.00	Cheng, Roger - University of Alberta
Development and Characterization of Nano-Engineered Cement Based Composites for Sustainable Construction	\$150,000.00	\$483,000.00	\$333,000.00	Bindiganavile, Vivek - University of Alberta
IRSI Ulysses Demonstration Project	\$70,000.00	\$160,500.00	\$90,500.00	Innovative Reduction Strategies Inc.
Totals	\$10,891,365.00	\$25,062,280.00	\$14,170,915.00	

**Granted under CNC Challenge 2.0, a program co-funded by Alberta Innovates Technology Futures and Alberta Innovates Bio Solutions