Alberta Innovates Bio Solutions

Listing of Nano-related Research and Innovation Projects*

Project Name	Project Number**	Start Date	End Date	AI Bio Funding	Project Cost	Project Lead Name	Stage	Industry Sector	AI Bio Funding Stream
AGRICULTURE PROJECTS:									
Nanotechnology-based Novel Tools to Treat Animal Diseases	AARI2006F112R	1-May-06	30-Jun-08	$69,575	$194,550	Singh, Balgit - University of Saskatchewan	Basic	Agriculture	AARI - Sustainable Production Livestock
Quest for a Novel Vaccine Delivery Tool and Enhancement of Immune Response Using Carbon Nano Tubes	AARI2007F012R	1-Apr-07	31-Mar-09	$85,800	$90,300	Aich, Palok - University of Saskatchewan	Applied	Agriculture	AARI - Sustainable Production Livestock
Nanotechnology-Based Novel Tools to Treat Animal Diseases	AARI2008A107R	15-Mar-09	30-Sep-10	$69,500	$69,500	Singh, Balgit - University of Saskatchewan	Basic	Agriculture	AARI - Sustainable Production Livestock
Application of Nanotechnology for Plant Biotechnology: Carbon Nanotubes for Transformation	AARI2008F009R	15-Mar-08	31-Mar-11	$224,250	$449,250	Kav, Nat - University of Alberta	Basic	Agriculture	AARI - BioProducts
Micro/Nano Encapsulated Delivery Systems for Flax-Based Nutraceuticals Using Supercritical CO2 Technology	AARI2007F037R	1-Apr-07	31-Mar-11	$267,375	$379,875	Temelli, Feral - University of Alberta	Basic	Agriculture	AARI - Food for Health
Innovative Ultrasound and Magnetic Nanoparticle-Mediated Gene Transformation for Agricultural Products	BIO2010F091R	1-Jul-10	30-Jun-11	$190,000	$640,000	Chen, Jie - University of Alberta	Basic	Agriculture	AI-BIO - Sustainable Production
An Integrated Approach to Characterize the Structure and Dynamics of Prions – Phase II	APRI200800745	1-Jan-09	31-Dec-11	$1,770,000	$1,770,000	Wishart, David - University of Alberta	Basic	Agriculture	AI-BIO Prion - Core Funding Programs
Testing Potential Chemical Chaperones for Prions with Single-Molecule Spectroscopies.	APRI200800794	1-Jul-09	31-Mar-12	$1,125,000	$12,780,158	Woodside, Michael - University of Alberta	Basic	Agriculture	AI-BIO Prion - Industry Programs - Ideal/Bootstraps
Intelligent Fertilizers: Phase 1, Root exudates, model nano-biosensors and polymers for synchronizing the release of nitrogen from fertilizer with its uptake by wheat and canola	AARI2007A205R	8-Jul-08	31-May-12	$800,000	$3,233,800	Monreal, Carlos - Agriculture and Agri-Food Canada	Basic	Agriculture	AARI - Sustainable Production Crops
Barley Protein Based Nano/Micro Particles as Nutraceutical Delivery Systems: From Bioactive Ingredients to Consumable Healthier Functional Foods	AARI2009F103R	1-Jul-09	30-Jun-12	$349,312	$570,372	Chen, Lingyun - University of Alberta	Basic	Agriculture	AARI - Food for Health

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Understanding Mechanism of Enhanced Immunity and Growth in Chickens Using Nanotechnology Based Immune Modulators	AARI2009F013R	1-Aug-09	31-Jul-12	$73,000	$298,300	Allan, Brenda - University of Saskatchewan	Basic	Agriculture	AARI - Sustainable Production Livestock
Natural Nanofibers Based on Crop Resources For New Generation of Bio-Products	BIO2010F034R	1-Sep-10	20-Oct-12	$51,600	$223,250	Chen, Lingyun - University of Alberta	Basic	Agriculture	AI-BIO - Advancing the Bio Economy
Plant Protein Nanoparticles to Improve Oral Bioavailability of Bioactive Compounds - Ex-vivo Test Using Animal Intestine	BIO2010F067R	1-Sep-10	20-Oct-12	$97,215	$318,928	Chen, Lingyun - University of Alberta	Basic	Agriculture	AI-BIO - Food/Health
TBI - Future Competitiveness of Triticale Crop Production and Enabling Technology	AARI2006A100R	1-Feb-07	31-Dec-12	$3,000,126	$6,840,126	Eudes, Francois - Agriculture and Agri-Food Canada	Basic	Agriculture	AARI - BioProducts
Nanostructured plant globular protein microcapsules for controlled delivery of bioactive compounds	QFH-11-033	1-Jan-12	28-Feb-15	$149,500	$607,726	Chen, Lingyun - University of Alberta	Applied	Agriculture	AI-BIO - Food/Health
Development of bioactive Oils and Nano-transformation Technologies for High-Value Oilseeds	BIO-12-004	1-Sep-12	31-Aug-15	$554,773	$702,112	Weselake, Randall - University of Alberta	Multi	Agriculture	AI-BIO - Sustainable Production
Nitrogen Fixation in Triticale	2014F020R	1-Apr-14	31-Mar-16	$200,000	$450,000	Eudes, Francois - Agriculture and Agri-Food Canada	Basic	Agriculture	AI-BIO - Sustainable Production
Increasing the activity and yields of bacteriocins for use in the food and animal industries	FSC-12-014	1-May-13	30-Apr-16	$495,000	$949,500	Kaur, Kamaljit - University of Alberta	Basic	Agriculture	AI-BIO - Food/Health
Abrasion resistant, anti-corrosion pipeline coatings from nano cellulose reinforced polyurethane.	2014F135R	1-Jun-14	31-May-16	$318,000	$484,000	Curtis, Jonathan - University of Alberta	Basic	Agriculture	AI-BIO - Advancing the Bio Economy
Intelligent NanoFertilizers – Phase II: enhancing nitrogen use efficiency by barley via root chemical signals and nanotechnology	BIO2013F014R	1-Aug-13	31-Jul-16	$420,000	$1,076,000	Monreal, Carlos - Agriculture and Agri-Food Canada	Applied	Agriculture	AI-BIO - Sustainable Production
Beta-glucan impregnated with CoQ10: A novel ingredient for functional beverages	AFI-14-011	5-Jan-15	30-Dec-16	$198,000	$400,150	Moquin, Paul - Ceapro Inc.	Basic	Agriculture	AI-BIO - Food/Health

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A hybrid approach towards the structure of BSE prions	APRI201300012	1-Mar-13	31-Dec-16	$750,000	$750,000	Wille, Holger - University of Alberta	Basic	Agriculture	AI-BIO Prion - Research Teams
Nanodart Technology for Value-added Agricultural Products	BIO-15-004	1-Apr-15	31-Mar-17	$67,494	$182,494	Chen, Jie - University of Alberta	Applied	Agriculture	AI-BIO - Sustainable Production
Implementing pressurized gas expanded technology at a commercial and demonstration scale to generate novel bio-based products with improved purity and functionality	ABI-15-001	1-Apr-15	28-Apr-17	$800,000	$2,150,000	Seifried, Bernhard - Ceapro Inc.	Develope	Agriculture	AI-BIO - Advancing the Bio Economy
FOREST PROJECTS:									
Development of Nanocomposite Phenolic Resins for Composite Panel Manufacture	AFRI810G06	19-Jul-05	22-Mar-06	$150,000	$392,000	Wellwood, Rob - Alberta Research Council Inc.	Basic	Forestry	AFRI - Resource Management Centre
Proposal to prepare an NCC plant configuration evaluation matrix For an Alberta Nanocrystalline Cellulose (NCC) Cluster	AFRI-880G-10	15-Jun-09	31-Aug-09	$18,000	$18,000	Berry, Richard - FPInnovations	Develope	Forestry	AFRI - Fibre Conversion Technologies
R&D Program Related to Bioproducts, Value-Added Products and Nanotechnology.	AFRI866G10	1-Apr-07	15-Mar-10	$2,700,000	$6,155,000	Wellwood, Rob - Alberta Research Council Inc.	Applied	Forestry	AFRI - Resource Management Centre
A Science, Research and Utilization Roadmap for Nanocrystalline Cellulose	AFRI879G10	2-Feb-09	31-Mar-10	$50,000	$80,000	Petersen, Nils - National Institute For Nanotechnology	Basic	Forestry	AFRI - Fibre Conversion Technologies
Nanofibre Technology Chair	AFRI868G12	5-Mar-08	15-Mar-13	$1,000,000	$3,325,000	Cheng, Roger - University of Alberta	Applied	Forestry	AFRI - Resource Management Centre
Equipment Purchase for Nanocellulose Procssing and Applications	BIO-12-009	1-Sep-12	31-May-13	$50,000	$50,000	Boluk, Yaman - University of Alberta	Basic	Forestry	AI-BIO - Advancing the Bio Economy
ArboraNano - The Canadian Forest NanoProducts Network	AFRI-881G-13	31-Dec-09	31-Dec-13	$350,000	$7,540,000	Crotogino, Ron - ArboraNano	Basic	Forestry	AFRI - Resource Management Centre
Optimization of Alberta Innovates Technology Futures (AITF) Cellulose Nanocrystals (CNC) Pilot Plant Processes	ABI-14-006	3-Feb-15	31-Jul-15	$100,000	$190,000	Ahvazi, Behzad - Alberta Innovates - Technology Futures	Basic	Forestry	AI-BIO - Advancing the Bio Economy
Production of Carbon Nano-Fiber Using Lignin Precursor	ABI-14-001	1-May-14	30-Nov-15	$80,000	$138,000	Ayranci, Cagri - University of Alberta	Basic	Forestry	AI-BIO - Advancing the Bio Economy

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Cost-Effective Biochar Adsorbents for Naphthenic Acid and Total Organic Carbon Removal in Oilsands Tailings	BRI-13-050	1-Apr-13	15-Jan-16	$187,500	$372,500	Mitlin, David - University of Alberta	Develope	Forestry	AI-BIO - Advancing the Bio Economy
Preparation of Ziegler-Natta Catalysts on Nanocrystalline Cellulose (NCC) Surfaces and in Situ Polymerization of Polyolefin Nanocomposites	BRI-13-020	1-Apr-13	31-Mar-16	$216,000	$303,000	Boluk, Yaman - University of Alberta	Basic	Forestry	AI-BIO - Advancing the Bio Economy
Nanocrystalline Cellulose (NCC) reinforced foam-core sandwich composite structures	BRI-13-027	1-Jun-13	1-Jun-16	$240,000	$411,300	Ayranci, Cagri - University of Alberta	Applied	Forestry	AI-BIO - Advancing the Bio Economy
Fabrication of a 4.5V supercapacitor stack prototype with electrode-grade nanoporous carbon from biochar using CNC-based inkjet printing	ABI-14-002	9-Jun-14	8-Jun-17	$270,000	$1,009,800	Kovalenko, Andriy - University of Alberta	Basic	Forestry	AI-BIO - Advancing the Bio Economy
TOTAL				**$17,537,021**	**$55,594,991**				

* Projects were funded by Alberta Innovates Bio Solutions over the period 2010-2015, or by its former research institutes, AARI, AFRI, ALSI, over the period 2005-2010
AI-BIO=Alberta Innovates Bio Solutions AARI=Alberta Agricultural Research Institute AFRI=Alberta Forest Research Institute ALSI=Alberta Life Sciences Institute
APRI=Alberta Prion Research Institute (a business line within AI Bio)

** For more information on each project, read the abstract by searching for the project number on www.BioLINK.albertainnovates.ca.
To download the final project report, register for free BioLINK login credentials.

Alberta Innovates Bio Solutions (www.bio.albertainnovates.ca) is a funding agency of the Government of Alberta that is helping to advance economic growth in the province's agriculture, food and forest sectors through research and innovation. We offer grant funding, advice, connections, and knowledge to companies and researchers for the development of new technologies, products, services or industry practices. The areas of research we support are sustainable agriculture and forest production, bioindustrial innovation, food innovation, ecosystem services and biodiversity, biological greenhouse gas management, and the Alberta Prion Research Institute.