

Program Guidelines for

CNC Challenge 3.0 Program

December 15, 2017

1.0 Purpose and Objectives

1.1 Purpose

Alberta Innovates, Bio Sector (AI), continues to build upon the successful completion of previous CNC Challenge programs with a new **CNC Challenge 3.0** program. The CNC Challenge series serves as a pipeline for the development of applications for cellulose nanocrystals (CNC) and opportunities for deployment. This program supports early-stage work to demonstrate technical feasibility of CNC in high-value applications with potential for commercialization.

In line with Government of Alberta and Alberta Innovates priorities, CNC Challenge 3.0 aims to increase the knowledge, capacity and value of CNC through research, application development and innovation.

Investments in CNC technology and application development have grown out of other initiatives including:

- The current [Alberta Bio Future \(ABF\) program](#), administered by AI. ABF is designed to encourage and support collaborations and partnerships between industry, academia, research organizations and government. It focuses on new and improved bioindustrial products and bioindustrial technologies.
- Commissioning of the [CNC pilot-scale facility at InnoTech Alberta](#) (2013) and related applied research activities.
- [Recommendations to Build Alberta's Bioeconomy \(BioE Initiative\)](#) (2013).
- [Alberta Forest Products Roadmap](#) (2011).
- [Getting Value from Every Fibre \(Fibre Roadmap\)](#) (2007).

CNC consists of nano-scale crystals extracted from cellulose, the major component of plant cell walls and the most abundant polymer on earth. These bio-based nanoparticles are rod-shaped, ranging in size from five to 10 nm in diameter and 100 to 200 nm in length.

CNC is produced from biomass subjected to acid hydrolysis. CNC is a biodegradable, non-toxic, high-strength and high-surface-area material that offers opportunities for a wide range of applications. Current research in Alberta includes applications in the fields of energy, health, industrial coatings, electronics and composites.

CNC Challenge 3.0 will provide each successful applicant with:

- Up to \$25,000 in funding for their CNC project research.
- Up to one kilogram of CNC from the InnoTech Alberta pilot plant, and
- Access to InnoTech Alberta's researchers, capacity and facilities to assist in the successful delivery of their project.
- This is a one-stage process.

Successful projects have the potential for ongoing, future support toward commercialization.

1.2 Objectives

- To demonstrate technical feasibility of CNC in high-value applications with commercialization potential.
- To advance the state of the art for the application of CNC.

1.3 Guiding Principles

- **Value:** Projects must bring demonstrated value to Alberta and Albertans.
- **Rigour and Excellence:** Projects will be subject to rigorous evaluation.
- **Due Diligence:** AI Bio will only invest in high-quality projects supported by a good business case.
- **Leveraging, Collaborations and Partnerships:** Applicants are encouraged to identify opportunities to maximize project financing, resources and use of highly qualified personnel and infrastructure, through leveraging, partnerships and collaborations amongst government, academic and/or private-sector organizations.
- **Multi-Sector Participation:** AI Bio encourages cross-sector participation in the development of innovations. For example, projects involving agriculture, forestry, the oil and gas sectors, as well as downstream users of products, are encouraged.
- **Alignment:** Projects must be aligned with Government of Alberta priorities and the Alberta Innovates Business Plan (<http://albertainnovates.ca/publications/>).

1.4 Eligibility

Projects must:

- Be completed within **one year**.
- Be submitted by researchers at Canadian institutions, companies or other organizations.
- Focus on CNC application developments leading to potential commercialization opportunities in Alberta, and
- Engage a project team with demonstrated competence, experience and the organizational capacity to successfully complete the project.

2.0 Guidelines for Project Submission

2.1 Process and Deadlines

Proposals are invited from eligible applicants wishing to participate in **CNC Challenge 3.0**. Applications for this program will follow a single-stage process. Each proposal must be submitted in the form of a Letter of Intent (LOI) through the online application system (<https://www.fundingconsortium.gov.ab.ca/aibio/Account>).

Proposals will be reviewed and assessed by the Alberta Innovates Selection Committee (which

may include external reviewers) for alignment with program purpose and objectives and the evaluation criteria identified in Section 4.0.

Timelines	Date and time
CNC Challenge 3.0 opens to submission of LOIs.	December 15, 2017
Deadline for submission of proposals.	February 1, 2018, 4 p.m. MST
Proposal review.	February 5 – March 26, 2018
Communication to all applicants about status of proposals.	March 27, 2018
Agreements developed with successful applicants.	After April 1, 2018

2.2 Submission of Proposal

- **Application:** The proposal form can be found in the AI Bio [online application system](#), under **CNC Challenge 3.0**. This is a one- stage process.

3.0 Project Information

3.1 Eligible Expenses

Eligible expenses are those costs associated with the development of new and innovative, proof-of-concept projects involving CNC.

Category	Eligible Expenses
Personnel – Project Team	<ul style="list-style-type: none"> • Time for specific activities on the project, prorated at usual annual salary rates. • Time for specific activities for project team members may be acceptable as in-kind contribution.
Travel	<ul style="list-style-type: none"> • Travel to give presentations to, or discuss project with stakeholders.
Equipment	<ul style="list-style-type: none"> • Equipment directly required for the project, as specified in the program description documents and approved by AI Bio.
Supplies	<ul style="list-style-type: none"> • Cost of supplies directly required for the project.
Supplemental costs	<ul style="list-style-type: none"> • Supplemental costs required to deliver the project are eligible. Overhead costs are not eligible.

3.2 Funding Sources

Applicants are encouraged to leverage additional funding for their project. Public and private sources may contribute to the project costs in cash or auditable in-kind.

3.3 Progress Reports and Financial Reporting

Successful project proponents will be required to submit a final progress report and also a final

financial report **within three months** of project completion. The applicant must provide confirmation of receipt of partner contributions/support, including details of the contribution at the agreement stage

3.4 Intellectual Property Principles

Intellectual property owned by the applicant must be managed by the applicant or the applicant’s organization. Applicants must ensure that they have sufficient right to intellectual property to be able to implement the project. Ownership of intellectual property arising from projects will be vested with the project applicant.

3.5 Confidentiality

AI Bio is committed to protecting the confidentiality of application details. External experts who act as reviewers must sign a confidentiality agreement.

As a provincial corporation, Alberta Innovates is subject to the protection and disclosure provisions of the Freedom of Information and Protection of Privacy (FOIP) Act. Personal information is collected pursuant to Section 33(c) of the Freedom of Information and Protection of Privacy Act as it relates to and is necessary for the program. Should you have any questions about the collection of this information, you may contact Ms. Joan Unger, AI, Director of Operations, at 780-450-5081.

4.0 Evaluation Criteria

Each LOI will be evaluated using the following mandatory administrative criteria. If it does not meet all the following criteria, no further evaluation will be conducted.

Mandatory Administrative Criteria	Yes	No
LOI is received on time.		
LOI is complete as per the online template.		
LOI is submitted by an eligible applicant.		
Project fits within program objectives as outlined in these guidelines.		
The project utilizes CNC as outlined in these guidelines.		

Proposals meeting all the mandatory criteria will then be evaluated in the following categories:

No.	Desired Criteria
1	Project Overview
2	Objectives, Milestone and Deliverables
3	Benefits
4	Budget
5	Project Team
	Total Score (Maximum 100)

To inquire about the CNC Challenge 3.0 program, please contact:

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