

July 17, 2023

## **NEx Request for Proposals Notice**

NEx encourages you to submit proposals focused on the research topic described below:

**Project ID: RD24.07.**

**Project Title: Development of design and utilization guidelines of Carbon-Textile Reinforced Concrete (C-TRC).**

### **Background**

Textile Reinforced Concrete (TRC) is an innovative material that combines the advantages of both concrete and textiles to create high-performance and lightweight structural elements. While TRC has gained recognition and acceptance in the construction industry, there is a need for comprehensive research and guidelines specifically focusing on the use of carbon textile reinforcement in TRC. This research aims to support the development of a design guideline for the effective utilization of Carbon Textile Reinforced Concrete (C-TRC) and promote its widespread adoption and realization of its full potential in the construction industry.

### **Proposal Request**

We invite proposals from qualified researchers, institutions, or experts in the field of concrete materials and structural engineering to undertake a research project focused on supporting the development of a design guideline for Carbon Textile Reinforced Concrete (CTRC). The objective of this project is to conduct in-depth research and analysis of the Textile Reinforced Concrete (TRC) made with carbon fibers. Among other topics, the research should cover:

- a. History of development and use
- b. Design and construction methodology and issues
- c. Mechanical behaviour
- d. Reasons for limited use, driving factors, and opportunities for improvement
- e. Future opportunities

The final outcome of the project is to develop a comprehensive and practical guideline that will facilitate the effective and efficient use of CTRC in construction applications.

### **NEx Mission Statement**

Collaborate globally to expand and accelerate the use of nonmetallics in the built environment to drive innovation, research, education, awareness, adoption, and deployment.

Research and Development within NEx are among its core missions, and it supports and facilitates the development of new nonmetallic technologies to address challenges with effective solutions.

### **Funding Policy**

NEx will impose a limit of 15% on indirect costs (overhead) by research organizations for any research it funds. The organization must waive the remainder of the indirect costs.

### **Award Amount**

NEx does not impose any limit on the overall funding request; however, the anticipated budget for this project is \$75,000. Proposals with higher budget estimate will be accepted with information on budget spending relevant to the value added to the project scope. Co-funding and co-sponsoring proposals with other organizations are welcomed.

### **Proposal Evaluation**

NEx research proposals will be evaluated by the NEx Steering Committee. A winning proposal will be forwarded to the NEx Board of Directors with recommendations for funding.

Proposal evaluation criteria will include technical content, methodology, PI's relevant experience, potential impact/ industry adoption, budget and time, proposed deliverables, and outcome. NEx anticipates the completion of this project within 24 months duration.

### **Awarded Proposals**

- The awarded proposal is expected to commence within the first quarter of 2024.
- NEx will enter into a contract with the researching entity. As part of the contract, it is mandated that the overhead or indirect return be set at no more than 15% of the direct cost of the research funding requested from NEx. Any overhead over the maximum allowed 15% that is waived by the researching entity shall be considered as cost sharing and shall be indicated on the budget table as waived overhead, separate from other co-funding. Non-compliant proposals in this regard shall be returned without review.
- The schedule of payments contingent upon milestone deliverables will be contained in the contract and will include, at a minimum, a final report deliverable to NEx. Progress reports, if required, will be identified in the final contract.
- If principal investigators (PI) from two organizations are collaborating on the research, the award must be to a single organization, which will then subcontract with the second organization.
- NEx will only consider funding research that involves the use of proprietary products if the goal of the research is to advance knowledge in a particular area of study and not solely on a proprietary product.
- In case of any co-funding arrangement with other organization(s), commitment letter(s) from co-funding organization(s) is required before funds are dispersed from NEx.
- The results of NEx-funded research will be owned by NEx, and possibly by other co-founding organization(s). PI should obtain approval from NEx before publishing any results.

### **Where and How to Submit Proposals**

Submitted proposals will be evaluated by the NEx Steering Committee and the NEx Staff. Anyone who evaluates a proposal is required to agree and abide by NEx policies on confidentiality and conflict of interest.

Please email the proposal and supporting information to [info@nonmetallic.org](mailto:info@nonmetallic.org), by end of the day, **September 5, 2023**. The subject line and file name shall include project ID (see top of page 1) and the name

of the proposing organization (For example: "RD24.xx University of xyz").

If you have any questions regarding the proposal requirements or process, please contact NEx Technical Director, Aparna Deshmukh (aparna.deshmukh@nonmetallic.org).

### **Required Proposal Content**

Proposals submitted to the NEx shall be provided in one unprotected pdf file and shall contain:

#### **1. Section 1: Executive summary (maximum 2 pages)**

- 1.1. NEx RFP ID:
- 1.2. Proposal Title:
- 1.3. Principal Investigator (name, affiliation, address, phone, email):
- 1.4. Objective of the proposal (300 words or less)
- 1.5. Description of significance/impact of the project (300 words or less)

#### **2. Section 2: Main body (maximum 5 pages)**

- 2.1. Background
- 2.2. Project description (include enough detail to understand how the project will be performed)
- 2.3. Schedule (include matrix of tasks and schedule of completion, including quarterly progress and final reports, and semi-monthly teleconference updates)
- 2.4. List of deliverables/anticipated products, such as new material specifications, new documents, published papers, presentations, NEx/ACI University Webinar, or conference proceedings.
- 2.5. Budget (table of funding that includes all support such as):
  - Total budget
  - Any co-funding from organizations other than NEx (monetary, in-kind)
  - Net value of waived institution overhead or planned co-funding

#### **3. Section 3: Supporting Documents (maximum 2 pages each)**

- 3.1. Qualifications of the investigator, co-investigator(s), if any, and/or institutions.