



MEMORANDUM OF UNDERSTANDING

(MoU)

Between

**International Advanced Research Centre for Powder Metallurgy and New Materials
(ARCI),**

Balapur P.O., Hyderabad - 500 005

and

**University of Ladakh (UOL)
Union Territory of Ladakh- 194101**

for

“Collaboration in the field of Research and Teaching”

1

This MoU is made on this 6th day of February, 2023

between

INTERNATIONAL ADVANCED RESEARCH CENTRE FOR POWDER METALLURGY AND NEW MATERIALS, established as an autonomous R & D center of Department of Science and Technology, Government of India (hereinafter called **ARCI** , which expression shall include its successors and permitted assigns), of the one part

AND

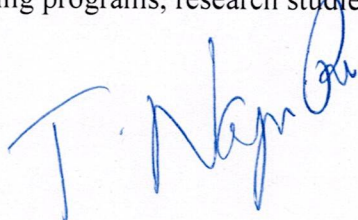
UNIVERSITY OF LADAKH, established in 2019, as an initiative to promote quality higher education and to be the Premier University of the country, particularly in the UT of Ladakh. The UOL is the only Trans-Himalayan institute of higher learning and research, therefore, an institute of higher learning of its kind (hereinafter called **UOL**, which expression shall include its successors and permitted assigns) of the other part.

1 PREAMBLE

ARCI is an Autonomous R&D Centre under the Department of Science & Technology, Govt. of India with a mandate to develop technologies in the area of advanced materials, including nanomaterials, engineered coatings, laser processing of materials, sol-based coatings, ceramic processing, powder metallurgy, and fuel cells, and transfer them to industry for commercial exploitation;

The UOL offers programs in all the major faculties; Science, Arts, Commerce & Management Studies, Education, and Social sciences. It has been constantly introducing innovative/ new programs to cater to the needs and demands of the students and society.

This MOU intends to build cooperation between UOL and ARCI to learn and develop further on the respective parties' core strengths, and institutional objectives in the public interest to jointly undertake the training programs, research studies, and Technology Development.



Therefore, it is hereby agreed by and between **UOL**, Ladakh and **ARCI**, Hyderabad to sign this MoU with the following terms and conditions:

1 SCOPE OF MOU

The scope of this collaboration is to provide research opportunities to students and researchers of the two institutions in increasing the effectiveness of teaching and research; jointly organizing academic programs on topics of mutual interests; disseminating knowledge in general; technological development; exchanging faculty/ staff and students; conducting joint research and publication activities.

Terms and conditions, financial arrangements, modalities of collaboration, responsibilities, and obligations of UOL and ARCI pertaining to any project to be undertaken as part of this MoU.

2 DURATION OF MOU

This MoU comes into effect from the date of its signing and will remain in force for 24 months (2 years). However, its validity can be extended by mutual agreement between both parties.

3 OBJECTIVE OF THE MoU

To explore joint collaborative research and development activities in the field of Science and Technology, Earth and Behavioral Sciences, Humanities and Social Sciences, Joint organization of research and publication activities; Joint organization of seminars, conferences, and academic workshops on topics of mutual interests.

4 PROJECTS

For each of the projects undertaken under this MoU, a separate Agreement on mutually agreeable terms and conditions will be entered, into by **ARCI** and **UOL**. The Agreement shall contain details on financial implications, work schedule, responsibility of parties, Commercialization, IP sharing etc.

5 PERIODIC REVIEW:

The progress of any of the project(s) will be reviewed by the project review committee (PRC) of the project consisting of members from **UOL**, Ladakh and **ARCI**, Hyderabad appointed by the Vice Chancellor and Director respectively. It is mutually agreed that periodic review will be held at mutually convenient place and time for reviewing the

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progress of work. A project review committee will review the project as and when necessary and after completion of each phase of work but not less than once a year.

6 BROAD AREAS OF COLLABORATION

The following broad areas have been identified. These areas are only indicative in nature and project work on any one or all the areas will be undertaken only after assessing the feasibility of the project and will be executed through a separate project Agreement. The areas are teaching, research, technological development programs, exchange programs, and any other relevant mutually beneficial academic programs.

Broad Areas:

- (a) To promote scientific relationship and mutual interaction among scientists, faculty and students by means of exchange visits and exchange of scientific literature. The infrastructural facilities during exchange visits of scientists, faculty and students will be provided at concessional rates, to be decided at an appropriate time, by the parties.
- (b) Interdisciplinary research on the inexpensive green synthesis and processing of nanoparticles and nano-composites with controlled size and morphology.
- (c) Binary and ternary nanocomposites of Metal-C/conducting polymer and their application in energy storage and Conversion
 - i) Development of Electrode materials for Supercapacitors.
 - ii) Development of the hybrid electrochemical capacitors (ECs)
- (d) Application of Smart and highly efficient nanocomposites for the detection of pesticides and other contaminants through electrochemical sensing and for environmental applications.
 - i) Evaluation of the heavy metal adsorbing applications of the synthesized nanocomposites.
 - iii) CNT/CNF/Graphene based nanocomposites for the removal of contaminants like dyes and heavy metals from laboratory as well as from real water samples using Advanced oxidation processes viz. photocatalysis and sono-catalysis.
The proposed study is expected to establish the detection and eradication of water contaminants.

7 FINANCIAL TERMS AND MODE OF PAYMENTS

Financial terms and conditions shall be detailed in the Individual Project Agreement.

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8 CONFIDENTIALITY

During the tenure of the MoU/Subsequent Project Agreements and five years thereafter "UOL" undertakes on its behalf and on behalf of their sub-contractors/employees/representatives/associates to maintain strict confidentiality and prevent disclosure thereof, of all the information and data exchanged/generated pertaining to work under this MoU/Agreement for any purpose other than in accordance with this MoU/Agreement. This clause will equally apply to "ARCI". Both parties, however, retain the rights to use their individual R&D results generated during this project for their own R&D programs without any obligation to the other.

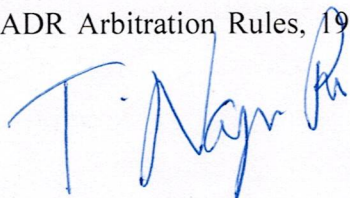
9 INTELLECTUAL PROPERTY RIGHTS:

Any background IP rights shall belong to respective parties. The results from these developments/ Projects can be published (except those which can be patented) by the two parties individually or collectively based on their contribution. The party intending to publish shall inform, in writing, the other party of its intention and contents. The other party shall also send its consent to the party intending to publish, in writing, within thirty (30) days of receipt of the proposed publication. Any publications so made shall give proper mention of all parties and individuals involved in the development.

Any Intellectual Property (IP), generated as result of joint work carried out under this MoU and/or subsequent project Agreements, shall be the joint property of ARCI and UOL. Matters related to filing, securing, maintaining of Joint IP rights, licensing, etc. shall be detailed in the individual project Agreements. A separate Agreement will be signed between ARCI and UOL in case of commercialization of Joint IP generated OR Know-How developed through the projects.

10 ARBITRATION:

This MoU shall be governed by, and construed in accordance with the laws of India. Any dispute which cannot be amicably settled by the parties may be submitted, by one of the parties, to the International Centre for Alternate Dispute Resolution (ICADR), New Delhi. The dispute will be settled following the provisions of Arbitration and Conciliation Act, 1996 and the ICADR Arbitration Rules, 1996. The Authority to appoint the arbitrator (s)



and to provide administrative services shall be the ICADR, New Delhi. Both Parties agree that the results and awards of any such arbitration shall be final and binding on both Parties.

- i. The venue of the Arbitration shall be at Hyderabad.
- ii. The language of arbitration proceedings will be English only.
- iii. Each party shall bear and pay its own cost of the arbitration proceedings unless the Arbitrator otherwise decides in the Award.
- iv. The provisions of this Clause shall not be frustrated, abrogated or become inoperative, notwithstanding this MoU expires or ceases to exist or is terminated or revoked or declared unlawful.

11 FORCE MAJEURE:

Neither party shall be held responsible for non fulfilment of their respective obligations under this Agreement due to the exigency of one or more of the force majeure events such as but not limited to Acts of God, War, Flood, Earthquakes, Strike, Lockouts, Epidemics, Riots, Civil Commotion, etc. provided on the occurrence and cessation of any such events, the party affected thereby shall give a notice in writing to the other party within one month of such occurrence or cessation. If the force majeure conditions continue beyond six months, the parties shall then mutually decide about the future course of action.

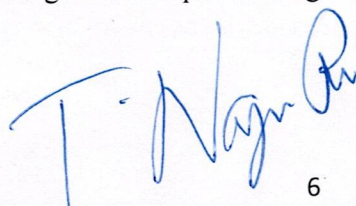
12 MODIFICATION AND AMENDMENTS:

No amendment or modification of this MoU shall be valid unless the same is made in writing by both the parties or their authorized representatives and specifically stating the same to be an amendment of this MoU. The modification/changes shall be effective from date on which they are made/ executed unless otherwise agreed to.

13 TERMINATION OF MoU:

This MoU may be terminated by either of the parties if the other party shall happen to be in breach of any of the terms hereof and shall have failed to rectify such breach within sixty days of the notice in this behalf having been served on it by the other party.

In addition to the reasons for termination as set forth above, this MoU may be terminated forthwith, if either of the parties voluntarily or involuntarily enter in composition, bankruptcy or similar reorganization proceedings or applications invoking such proceedings have been failed.



In case, one of the parties fails to fulfil its responsibilities as stipulated in this MoU/Subsequent Project Agreements, other party has the right to terminate this MoU and vice the versa. In such a case, either party **ARCI** shall be free to work with any third party of its choice after giving 60 days of notice in writing to the other party.

Even after the expiry of the MoU or the termination of MoU, separate Agreements already signed based on this MoU will continue to be in force till the finalization of the concerned projects.

14 INDEMNITY AGAINST ACCIDENT OR INJURY

Either Party shall not be liable for in respect of any demand or in consequence of any accident or injury to any work men or other person employed by the other party related to the project or its sub- contractor or violation of any statutory provision.

15 NOTICE:

All notices and other communications required to be served on the **UOL** under the terms of this MoU shall be considered to be served if the same shall have been delivered to, left with or posted to registered mail to the **UOL** at its last known address of business. Similarly, any notice to be given to the **ARCI** shall be considered as duly served if the same shall have been delivered to, left or posted by registered mail to the **ARCI** as its registered address in Hyderabad.

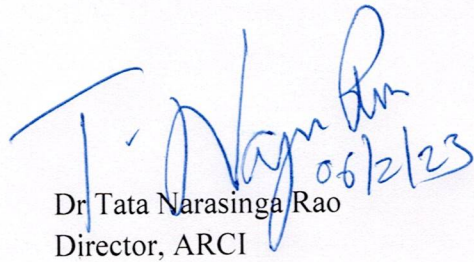
16 In witness whereof the parties hereto have executed this MoU through their authorized representatives

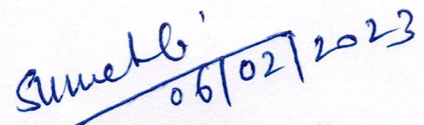
FOR AND ON BEHALF OF ARCI

FOR AND ON BEHALF OF UoL

Signature :

Signature :


Dr Tata Narasinga Rao
Director, ARCI


Prof. S. K. Mehta Vice Chancellor
University of Ladakh, Leh
UT of Ladakh

डॉ.टाटा नरसिंग राव / Dr.TATA NARASINGA RAO
निदेशक / Director
इंटरनेशनल एडवांस्ड रिसर्च सेंटर फॉर पाउडर
मेटलर्जी एंड न्यू मेटिरियल्स (ए.आर.सी.आई)
International Advanced Research Centre
For Powder Metallurgy & New Materials (ARCI)
(विज्ञान एवं प्रौद्योगिकी विभाग/Dept. of Science & Tech.भारत सरकार/Govt.of India
डाकघर:बालापुर/P.O.Balapur,हेदराबाद/Hyderabad-5,(तेलंगाना/Telangana)भारत/INDIA

7



Place : Hyderabad
Date : 6/2/2023

Place : Hyderabad
Date : 06/02/2023

Witness :

Witness :

1. [Signature]
Name : Dr. L. Rama Krishna
Designation : Scientist 'G'

1. [Signature]
Name : Ashok K Shau
Designation : Registrar, UOL

2. [Signature]
Name : A. Srinivas
Designation : APO

2. [Signature]
Name : Dr. Ramesh M. K. Khan
Designation : Expert Faculty, UOL