

MEMORANDUM OF UNDERSTANDING

BETWEEN



**MALAVIYA NATIONAL INSTITUTE OF
TECHNOLOGY JAIPUR**

Rajasthan

AND



**ICAR-CENTRAL SHEEP AND WOOL RESEARCH
INSTITUTE**

Avikanagar (Rajasthan)

FOR

**Natural Fibre Reinforced Biocomposites
Development and Testing**

October 2022

PREAMBLE:

On this **2nd day of October** in the year **Two Thousand and Twenty Two**, a **Memorandum of Understanding** (herein after referred to as 'MoU') is entered into on the terms and conditions hereafter contained in this MoU by and between the **Malaviya National Institute of Technology Jaipur**, in an Institute of National Importance governed by the provisions of The National Institute of Technology Act 2007, Government of India, having its office at Jawahar Lal Nehru Marg, Jaipur, Rajasthan (hereinafter referred to as '**MNITJ**') on ONE PART;

AND

Central Sheep and Wool Research Institute, Avikanagar, an autonomous organization under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and farmers Welfare, Government of India, having its office at Avikanagar- (post), Malpura (Tehsil), Tonk (Dist) Via-Jaipur, Rajasthan-304501 (hereinafter referred to as '**ICAR-CSWRI**') on the OTHER PART.

WHEREAS, hereinafter both MNITJ and ICAR-CSWRI will be collectively referred to as '**PARTIES**' and individually referred to as '**PARTY**';

WHEREAS, MNITJ is engaged in R&D activities in composite science and technology for academic, strategic, societal and industrial applications such as design and development of composite processing & demonstration equipment's, contract research, scientific consultancy services within the domain of its expertise etc. MNITJ has established itself as a key player in the field of composite science & technology. In an endeavor to support further research on wool composite sciences, MNITJ has been actively developing experimental wool composite systems for educational institutes in India.

WHEREAS, ICAR-CSWRI is a premier institute of Indian Council of Agricultural Research engaged in research, training and extension activities for development of Sheep breeding and innovative woolen products. Further, CSWRI has also research experience on application of coarse wool based composite to improve the quality of woolen composite products.

WHEREAS, ICAR-CSWRI and MNITJ jointly discussed areas of mutual interest and observed that the joint research could be taken up on the area of natural fibre reinforced composites manufacturing, properties measurement, and characterization and develop newer applications.

WHEREAS the PARTIES collectively decided to enter into an MoU the for developing an innovative, indigenous and eco-friendly technology for wool processing as described in subsequent clauses of this MoU;

MNITJ _____

ICAR-CSWRI _____

Both the PARTIES hereby agree to this MoU as follows:

1. OBJECTIVE OF MOU:

The overall objective of this MoU is to study and develop natural fibre reinforced composites, to measure their properties, to characterize composites under various conditions and to develop newer applications. The methodology and scope of work for both the organizations are as listed in the subsequent clauses of this MoU.

2. METHODOLOGY:

ICAR-CSWRI has the required expertise and knowledge on wool & wool products. ICAR-CSWRI will provide the wool samples with uniform quality to MNITJ. These samples will be treated using epoxy resins with different parameters and conditions at MNITJ. The treated samples will be sent back to ICAR-CSWRI for characterization and product testing. Based on the results of characterization, ICAR-CSWRI will provide feedback to MNITJ for optimizing wool composite parameters for using wool fibers.

A final report will be prepared jointly by ICAR-CSWRI & MNITJ. This work may lead to a joint patent and publication.

3. SCOPE OF WORK:

3.1 MNIT will have the following scope of work:

- 3.1.1 Composite sample development using RTM/injection molding technique
- 3.1.2 Wear and tear testing of composites under various conditions
- 3.1.3 Sharing the results of composite samples with ICAR-CSWRI.
- 3.1.4 Any other activity which is required for achieving the objective of the MoU but not in the scope of ICAR-CSWRI.

3.2 ICAR-CSWRI will have the following scope of work:

- 3.2.1 Supply of "Unprocessed (Grey) Wool" in fiber/fabric form
- 3.2.2 Measurement and analysis of static and dynamic coefficient of friction of the fiber/fabric
- 3.2.3 Evaluation of mechanical properties of fabric like tensile strength
- 3.2.4 Development of hand molded and compression molded composite samples
- 3.2.5 Sound adsorption testing
- 3.2.6 Sharing the results of characterization of samples with MNITJ.
- 3.2.7 Any other activity which is required for achieving the objective of the MoU but not in the scope of MNITJ.

MNITJ _____

ICAR-CSWRI _____

3.3 Deliverables:

A report on development of wool composite based process for improving the properties and using of wool fibers and fabrics.

4. GENERAL TERMS:

4.1. Validity:

This MOU shall be valid for a period of 5 years from the date of execution. However, if desired, the tenure of this MOU may be extended to a time period decided by the PARTIES upon mutual MoU in writing by both the PARTIES.

4.2. Financial commitment:

- (a) The cost towards the activities listed in MNITJ's scope of work will be borne by MNITJ.
- (b) Similarly, the cost towards the activities listed in ICAR-CSWRI's scope of work will be borne by ICAR-CSWRI.
- (c) MNITJ and ICAR-CSWRI shall not have any financial obligation towards each other under the activities proposed in this MoU.

4.3. Intellectual property:

Intellectual property (both background and foreground) as defined hereunder includes, but is not limited to inventions and ideas, whether patentable or not, copyrightable subject matter, data bases, data compilations and collections, technical data and information, process technology, computer programs, methodologies, plans, drawings etc. 'Background intellectual property' is the intellectual property held by either PARTY prior to this MoU in their respective fields. Such 'background intellectual property' will remain with the respective PARTY holding the intellectual property even after the expiry of this Agreement.

It is anticipated that research under this agreement may result in the creation of intellectual property (foreground intellectual property). Share of any new intellectual property so generated from the efforts under this MoU will be decided by both the PARTIES in writing at a later stage, as and when such new intellectual property is generated. No claim of IP shall be considered unless and until both the PARTIES agree on sharing of such new IP.

New IP, which are identified by either of the PARTIES as potentially patentable or copyrightable subject matter, shall be jointly owned by MNITJ and ICAR-CSWRI, and would be subject to rights described in this document. The filing of such patent applications would be done through the DAE

MNITJ _____

ICAR-CSWRI _____

patent cell. The expenses for filing, prosecution, defence and maintenance of all new IP Rights under the specific contract shall be jointly borne by MNITJ and ICAR-CSWRI.

4.5 Publication:

Any publications arising from the activities under this MoU should be jointly owned by MNITJ & ICAR-CSWRI and shall be jointly authored by relevant authors from both PARTIES. Either PARTY can impose a delay if any Intellectual Property Right (IP Right) has to be captured, with any delay not exceeding 3 months. Each PARTY shall ensure due authorship is given to contributors from both PARTIES.

4.6. Secrecy & Non-disclosure:

4.6.1. All information under the MoU shared between the PARTIES shall be treated as "Confidential" and shall be subject to restrictions on disclosure other than for the purpose of this MoU. The Recipient shall take the same degree of care as for its own information of like importance in safeguarding against the disclosure of Confidential Information received from the Discloser. The Recipient agrees not to make any use whatsoever at any time of such Confidential Information for any purpose except for the objectives intended to be achieved through this agreement.

4.6.2. Recipient shall promptly notify the Discloser upon discovery of any unauthorized use or disclosure of the Confidential Information received from the Discloser and take reasonable steps to regain the possession of such Confidential Information and prevent further unauthorized actions or other breach of this Agreement.

4.6.3. The Receiving Party may disclose part of the Confidential Information with prior written consent of the Disclosing party to contractors/ agents/ consultants/ employees engaged by the Receiving Party for execution of any relevant work, to the extent necessary to enable them to perform their duties, provided that the Receiving Party shall impose on such contractors/ agents/consultants /employees the same secrecy obligations as those stipulated in this Article.

4.6.4. The confidentiality obligations shall survive even after the termination or expiration of this MoU. Confidential information shall not include:

- information that is available in public domain;
- information already known to the receiving PARTY;
- information disclosed to the receiving PARTY by a third party not under obligation of confidentiality;
- Information developed by the receiving PARTY independent of the confidential information received under this MOU.

- 4.6.5. Both PARTIES shall not provide the technical information provided by other PARTY to any other third party, without the consent of other PARTY.
- 4.6.6. All Confidential Information, contained in any material & documentation including all originals, copies, computer data files, word processing files, letters or other computer storage files furnished hereunder, shall be ceased to be used by the receiving party and returned to the disclosing party or destroyed by the receiving party within 7 days of such request being made to it, either during the period of subsistence of the obligations herein contained or after termination of this MoU, as the case may be. Upon request made by disclosing party, receiving party shall provide a certificate of destruction.

4.7 Indemnification:

- 4.7.1 Receiving Party shall hold harmless and indemnify the Disclosing Party and keep it always indemnified for any loss incurred or suffered by the Disclosing Party arising out of a breach by the Receiving Party or its contractors/ agents/ consultants/ employees of their obligations under this agreement.
- 4.7.2 Both PARTIES warrant that the use of new IP or Background IP or other Confidential Information does not infringe third Party's rights or does not cause damage to third Parties.
- 4.7.3 In no event will either party be liable for any special, incidental, indirect or consequential damages, losses or claims of any nature whatsoever either in tort, contract or otherwise including loss of profit, loss of production, loss of opportunity etc. in connection with activities performed under this MoU.

4.8 Termination:

Termination of this MoU shall be applicable on either of the following grounds:

- a) On completion of tenure of this MoU; OR
- b) By mutual written consent and agreement between PARTIES; OR
- c) By breach of the contractual obligations under this MoU by either PARTY.

4.9 Non-exclusivity:

This MOU is non-exclusive in nature in such a manner that it does not create a binding on either PARTY, and that either PARTY is free to collaborate with any third party or parties, unless specifically agreed upon in writing under the specific contract.

4.10 Amendment of this MoU:

This MOU can be modified or revised only by mutual agreement in writing by the PARTIES. Any new additions to this MOU may be considered as annexure to this MOU.

MNITJ _____

ICAR-CSWRI _____

4.11 Contact personnel:

The nodal officers acting as a technical point of contact will be:

From MNITJ:

Prof. Rakesh Jain

Dean, International and Alumni Affairs
Malaviya National Institute of Technology
Jaipur

Jawahar Lal Nehru Marg, Jaipur, Rajasthan.

Email: rjain.mech@mnit.ac.in

From ICAR-CSWRI:

Dr. Vinod Kadam

ICAR-Central Sheep and Wool Research Institute
Avikanagar- (post), Malpura (Tehsil)
Tonk (Dist) Via-Jaipur, Rajasthan 304501

Email: Vinod.Kadam@icar.gov.in

Point of contacts for any legal, administrative or contractual matters shall be:

From MNITJ:

Prof. N. P. Padhy

Director,

MNIT Jaipur

Email: director@mnit.ac.in

From ICAR-CSWRI:

Dr Arun Kumar Tomar

Director,

Central Sheep and Wool Research Institute

Email: director.cswri@icar.gov.in

4.12 Dispute resolution

Any dispute or difference arising out of this MoU shall be resolved in the following manner:

4.12.1 Amicable Resolution:

Save where expressly stated to the contrary in this MoU, any dispute, difference or controversy of whatever nature howsoever arising under, out of or in relation to this MoU between the PARTIES and so notified in writing by either Party to the other party in the first instance shall be attempted to be resolved amicably. In the event of dispute between the PARTIES, either party may require such dispute to be referred to the Joint Conciliation consisting of Director – MNITJ and Director – ICAR-CSWRI and the two parties shall meet within a period of seven (7) days of such request to discuss and attempt to resolve the dispute amicably. The settlement MoU, if any, decided pursuant to the conciliation proceedings shall have the same effect and status of an arbitral award.

4.12.2 Arbitration:

Any dispute, which is not resolved amicably under Clause 4.7.1 within a period of sixty (60) days from the date on which one party notified the other party of the dispute, shall be finally decided by reference to arbitration of a Sole Arbitrator, who shall be mutually decided between the parties.

MNITJ _____

ICAR-CSWRI _____

IN WITNESS WHEREOF, the parties have caused this MoU to be executed in the English languages in duplicate by the proper officials as of the date hereof.

For

MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

N. P. Padhy
02/10/22

Prof. N. P. Padhy
Director
MNIT Jaipur

For

ICAR-CENTRAL SHEEP AND WOOL RESEARCH INSTITUTE

Arun Kumar Tomar

Dr. Arun Kumar Tomar
Director
ICAR-CSWRI, Avikanagar

Name and designation of signatory

Witness:

1. Prof. Rakesh Jain

Rakesh Jain
2/10/22

2. Dr. Madhu Agaswal

Madhu Agaswal
2/10/2022

Name and designation of signatory

Witness:

1. Dr. Vinod Kadam

Vinod Kadam
02/10/2022

2. Dr. Ajay Kumar

Ajay Kumar
02/10/2022

MNITJ _____

ICAR-CSWRI _____