



తెలంగాణ తేలంగానా TELANGANA

S.No. 2925 Date: 21-03-2023, Rs: 100/-
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S/o. JAKKULA HANUMANTH REDDY
For Whom: M/S.NUCLEONIX SYSTEMS PRIVATE
LIMITED
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MEMORANDUM OF UNDERSTANDING
BETWEEN

KARMAVIR DADASAHEB KANNAMWAR COLLEGE OF ENGINEERING (KDK), NAGPUR
AND

NUCLEONIX SYSTEMS PRIVATE LIMITED (Nucleonix), HYDERABAD

ON
FABRICATION, CALIBRATION & SUPPLYING OF OSL DOSIMETERS, PHOSPHORS
FOR OSL DOSIMETRY

This memorandum of understanding (MOU) is signed on the day Friday of the month of March and the year Two Thousand twenty-three (21-03-2023) between Nucleonix Systems Private Limited, Hyderabad, hereinafter referred to as **Nucleonix** and Karmavir Dadasaheb Kannamwar College of Engineering College, Nagpur, hereinafter referred to as **KDKCE**, for scientific collaboration- including fabrication, calibration and supply of OSL dosimeters and powder on commercial terms to Nucleonix. Nucleonix will test, and calibrate these dosimeters at their NABL calibration lab and market these dosimeters to their TL/OSL research reader customers and even to other users.

For Nucleonix Systems Pvt. Ltd.

Managing Director



PREAMBLE

Whereas KDKCE, Nagpur has made significant progress in developing various phosphors on a small scale that have been found to be possessing very promising characteristics for radiation dosimetry, and KDKCE, Nagpur has the potential to convert these phosphors to OSL dosimeters,

AND

Whereas, **Nucleonix** a reputed company, engaged in the design, development & manufacturing of Nuclear Instruments and systems since 1990, is supplying instrumentation for different applications, including TL & OSL measurements. Nucleonix has strong research and instrument production programs related to TL and OSL readers.

It is hereby agreed that Nucleonix and KDKCE shall work together for mutual benefit and extend their capabilities for the national benefit to fulfill the national requirements of TL/OSL Instrumentation and Radiation Dosimeters based on OSL phosphors by respective institutions.

1. TERMS AND CONDITIONS:

This MoU details the terms and conditions, financial arrangements, modalities of collaboration, responsibilities, and obligations of Nucleonix and KDK pertaining to this MOU. This supersedes all the previous correspondence and discussions on this subject matter.

2. PERIOD OF MOU AND ITS EXTENSION

This MOU shall come into effect from its signing date and remain in force for **three years** thereafter. Its validity could be suitably extended/ terminated by any one party, based on a mutually written agreement between both parties.

3. SCOPE OF THE MOU

This MOU envisages the fabrication & supply of OSL-based dosimeters in disc and powder form by KDKCE, which finds applications in radiation dosimetry for environmental, medical, personnel monitoring, and in Industry. Whereas Nucleonix will receive these dosimeters and powder, calibrate and evaluate their performance sensitivity and accept them for use. Nucleonix will have the sole responsibility of supplying and marketing these dosimeters to their Customers of TL/OSDL research readers and others.

4. DETAILS OF THE MoU and ROLES AND RESPONSIBILITIES OF NUCLEONIX AND KDKCE.

❖ KDKCE will mainly be responsible for the following:

- i. Synthesis of OSL phosphors for making OSL dosimeter discs of equal Weight & offer in Powder form also.
- ii. Further carry out development and modifications as per feedback from

For Nucleonix Systems Pvt. Ltd.


Managing Director



- ❖ KDKCE will not sell these materials directly to any users of TL or TL-OSL products of Nucleonix make, as Nucleonix will be will be calibrating and verifying for satisfactory dosimetry performance (Linearity and Reproducibility) and putting efforts in marketing and also will supply, along with their TL/OSL research readers.
- ❖ Nucleonix will be responsible for the detailed study from the dosimetry angle on sensitivity reproducibility and repeatability and disc fragileness etc. before they are accepted for payment to KDKCE by Nucleonix. Nucleonix facility has NABL accredited Radiation Calibration labs where at the OSL materials received will be studied for suitability to supply the same for diversified dosimetric applications including personnel, environmental monitoring, medical dosimetry, etc.
- ❖ Prices of OSL dosimeters and powder will be decided by KDK based on the required quantity in the purchase order.
- ❖ The concerned Faculty from KDKCE and collaborator(s) from Nucleonix shall be responsible for the actual execution of the planned work.

5. DELIVERABLES:

Based on the requirements/Orders given by Nucleonix, KDKCE will fabricate the OSL materials. The time required will be typically 6 to 8 weeks from the date of order.

Nucleonix will require 3 to 4 weeks to characterize and study them depending on the availability of the OSL reader, calibration device time slot at Nucleonix, and the availability of concerned staff.

Nucleonix once accepts the OSL material within two/three weeks, payment will be made against the Invoice by KDKCE.

6. CONFIDENTIALITY CLAUSE

Both parties undertake not to transfer any consideration to be received by transfer of the know-how/data obtained from each other through this MOU in any manner to any third party without prior approval of the other counterpart. Both parties shall take the required measures to ensure that knowledge/know-how/data generated/obtained or exchanged under this MOU is not disclosed to a third party within and beyond the period of this MOU.

7. COORDINATION COMMITTEE (CC)

The CC will involve itself in the formulation of broad policies and technical programs in line with the objective of this MoU. The composition of the PCC would be as follows:

1. Managing Director, Nucleonix
2. **Principal, KDKCE, or his nominee (Head Department of Physics, KDKCE)**
For Nucleonix Systems Pvt Ltd.
3. Prof. S. V. Moharil, Retd. Prof., Dept. Of Physics, RTM Nagpur University


Managing Director



8. IMPLEMENTATION TEAM (IT)

1. Dr. Mrs. S.P. Wankhede, KDKCE,
2. Dr. J. Narendra Reddy, Managing Director, Nucleonix systems
3. Mr. J. Dheeraj Reddy, Director, Nucleonix systems
4. Prof. S. V. Moharil, RTM, Nagpur

While the CC will be responsible for the execution of the technical work at KDK or Nucleonix, the CC and IT together will involve themselves in the formulation of broad policies and technical programs in line with the objective of this MoU.

10. ARBITRATION CLAUSE

In the event of dispute or differences between the parties hereto, such disputes or differences shall be resolved amicably based on mutual discussions by the signatories or their nominees.

11. NO LIABILITY CLAUSE

All activities would be carried out with due professional care. However, neither Nucleonix nor KDKCE shall claim from others for any loss, or damage whatsoever, resulting due to the implementation of any technology at the premises of the user(s).

12. NON-EXCLUSIVE NATURE OF THIS MoU

This MoU between Nucleonix and KDK is and shall be non-exclusive in its nature for all purposes, and shall not come in the way of either partner from collaborating with a third party.

13. MoU AND ITS AMENDMENTS

This MoU shall be the sole repository of the terms and conditions agreed to between the parties and no amendment thereof shall take effect or be binding on Nucleonix and KDKCE unless such amendment is authorized by Nucleonix and KDKCE and is recorded in writing and signed by the representatives of Nucleonix and KDKCE.

For Nucleonix Systems Pvt. Ltd.

Managing Director



14. INTELLECTUAL PROPERTY RIGHTS

All publications including patents related to the study arising from this MoU will be shared by KDK.

For and on behalf of Nucleonix	For and on behalf of KDKCE, Nagpur
<p>Pl. put your Signature here</p> <p><i>[Signature]</i></p> <p>For Nucleonix Systems Pvt. Ltd.</p> <p>Managing Director</p> <p>Authorized Signatory Name and seal Date</p>	<p>Pl. put your Signature here</p> <p><i>[Signature]</i></p> <p>PRINCIPAL K. D. K. COLLEGE OF ENGG. NAGPUR - 00</p> <p>Authorized Signatory Name and seal Date:</p> 
<p>Pl. put your Signature here</p> <p><i>[Signature]</i></p>  <p>Witness 1: J. DHEERAS REDDY Name & Seal DIRECTOR</p>	<p>Pl. put your Signature here</p> <p><i>[Signature]</i></p> <p>Dr. Mrs. S P. Wadhwa Witness 1 Name & Seal K.D.K.C.E.Nagpur</p> 
<p>Pl. put your Signature here</p> <p><i>[Signature]</i></p>  <p>Witness 2: Bhaskar Name & Seal Marketing</p>	<p>Pl. put your Signature here</p> <p><i>[Signature]</i></p> <p>Witness 2: Name & Seal</p>

CC= Coordination Committee, and IT= Implementation Team.