



Memorandum of Understanding

Between

National Institute of Technology Delhi

&

**Quantum Research and Centre of Excellence
(QRACE), New Delhi, India**

QRACE's focus on integrating quantum technology into various fields, including AI, communication, and cryptography, highlights the disruptive potential of quantum innovations. QRACE aims to create a robust network that advances scientific knowledge and technological development. Solving global problems of carbon emission, transportation, health, banking and defence sectors using Quantum Technology.

NIT Delhi's focus is to leverage the in-house world class expertise on Cyber and legacy of two decades for designing and product ionization of secure electronics and communication for upbringing niche and quality products to secure the data in Quantum Era. NIT Delhi is determined to design and develop products on various vectors of Quantum like QKD, Quantum Sensors, PQC based Devices .

PARTIES



This Memorandum of Understanding (hereinafter referred to as "MoU") is entered into on this _____ day of _____

BETWEEN:

National Institute of Technology Delhi (hereinafter referred to as "NIT Delhi"), an Institution of National Importance, having its office at Plot No. FA7, Zone P1, GT Karnal Road, Delhi-110036, represented by its Director. (Hereinafter referred to as the "First Party")

AND

Quantum Research and Centre of Excellence (QRACE), New Delhi, India (hereinafter referred to as "QRACE"), focusing on integrating quantum technology into various fields, with its office at [QRACE Address, if available, otherwise New Delhi, India], represented by Dr. Kumar Gautam, Founder and President. (Hereinafter referred to as the "Second Party")

NIT Delhi and QRACE are hereinafter collectively referred to as the "Parties" and individually as a "Party".

PREAMBLE

WHEREAS, NIT Delhi is a premier academic institution with world-class expertise in Cyber and a legacy of two decades in designing and productizing secure electronics and communication, determined to design and develop products on various vectors of Quantum like QKD, Quantum Sensors, and PQC based Devices to secure data in the Quantum Era.

WHEREAS, QRACE's focus is on integrating quantum technology into various fields, including AI, communication, and cryptography, aiming to create a robust network that advances scientific knowledge and technological development, and solving global problems of carbon emission, transportation, health, banking, and defence sectors using Quantum Technology.

WHEREAS, the Parties desire to collaborate to leverage their respective strengths for mutual benefit in the fields of quantum technology, research, education, and innovation.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the Parties agree as follows:



ARTICLE 1: OBJECTIVES AND SCOPE OF COLLABORATION

1.1. The primary objective of this MoU is to establish a framework for cooperation between NIT Delhi and QRACE to jointly pursue research and development activities, educational programs, and commercialization of quantum technologies. 1.2. The Parties agree to collaborate with a mission to make a state-of-the-art, secure, robust, efficient, and intelligent Quantum System utilizing AI, cyber with allied electronics, and quantum dots. 1.3. The scope of collaboration under this MoU shall include, but not be limited to, the areas detailed in Article 2. 1.4. This MoU sets down the mutually agreed broad framework. Specific activities and projects will be detailed in subsequent written agreements, which will outline the scope, terms, conditions, and financial arrangements for each engagement.

ARTICLE 2: AREAS OF COLLABORATION

The Parties agree to encourage academic and research cooperation in fields of mutual interest, including:

2.1. Research and Development: * Conducting cutting-edge research for the conceptualization and realization of niche products such as: * Lightweight Quantum Simulators. * Independent Quantum Optimizers. * Quantum Algorithms. * Developing and executing joint research projects on quantum radar, error correction, and quantum communication. * Publishing high-impact research papers and participating in major conferences jointly. * Facilitating technology transfer and joint patenting of innovative quantum technologies.

2.2. Education and Training: * Developing unique, quality, and comprehensive educational modules on various segments of Quantum to groom the next generation of quantum scientists and engineers. * Organizing joint workshops, seminars, summer/winter schools, and conferences to disseminate knowledge and foster learning in quantum technologies.

2.3. Establishment of Joint Research Centres (CoEs): * Working towards establishing CoEs in leading academic institutions and onboarding projects from corporate industry and government agencies on advanced quantum applications.

2.4. Commercialization and Entrepreneurship: * Fostering innovation and facilitating research services to industry and academia. * Supporting the commercialization of quantum technologies through incubation and support of start-ups and entrepreneurial ventures.



2.5. Funding Opportunities: * Jointly applying for national and international institutional funding, including from NQM (National Quantum Mission), DRDO, DST, Defence, etc., for joint research projects.

2.6. Exchange and Access: * Exchange of academic/research materials and other related information. * Exchange of faculty, staff, postgraduate students, and/or doctoral research scholars, subject to mutual agreement and availability of resources. * Facilitating access to each other's relevant research facilities and equipment for collaborative projects, as mutually agreed upon. * Joint supervision for Ph.D. students, where QRACE experts may act as co-supervisors for NIT Delhi Ph.D. students and NIT Delhi faculty may be part of doctoral committees for QRACE researchers, subject to institutional regulations.

2.7. Internship at QRACE: Paid internship to be provided by QRACE to the UG/PG students of NIT Delhi.

ARTICLE 3: IMPLEMENTATION AND ACTION PLAN

3.1. An action/work plan document shall be jointly discussed and mutually designed, which will serve as a guidebook for handling the agreed activities. 3.2. This document shall provide an overall activities plan, the needed skills to accomplish various tasks, and important work goals for every six months. 3.3. The six-month task list of the work plan document shall be reviewed and updated in July and January of each year and be signed by the designated Single Point of Contacts (POCs) from both Parties.

ARTICLE 4: DURATION AND TERMINATION

4.1. This MoU shall come into effect on the date of its signing by both Parties and shall remain in force for an initial period of Five (5) years. 4.2. The MoU may be extended for further periods upon mutual written consent of both Parties.



ARTICLE 5: FINANCIAL ARRANGEMENTS

5.1. The Parties acknowledge that initial funding for infrastructure, equipment, and staffing for joint projects may be sought from external sources such as DRDO, DST, NQM, Defence, etc.

5.2. This MoU in itself does not create any financial obligations for either Party. 5.3. The financial arrangements for specific collaborative activities, projects, programs, conferences, seminars, workshops, and the like will be decided and approved on a case-by-case basis through mutual written consent in separate project/activity agreements.

ARTICLE 6: CONFIDENTIALITY

6.1. Both Parties agree to maintain the confidentiality of any information, data, designs, documents, source code, test plans, test results, and any related information shared by one Party with the other for mutually agreed joint programs, which is designated as confidential or which by its nature is confidential ("Confidential Information"). 6.2. Neither Party shall disclose Confidential Information received from the other Party to any third party without the prior written consent of the disclosing Party, except as may be required by law. 6.3. The obligations of confidentiality shall remain in effect even after the termination or expiry of this MoU for a period as mutually agreed upon in specific project agreements.

ARTICLE 7: INTELLECTUAL PROPERTY RIGHTS (IPR)

7.1. Any intellectual property (including but not limited to patents, copyrights, designs, trademarks, know-how) owned or controlled by a Party prior to or developed independently of this MoU ("Background IP") shall remain the property of that Party. 7.2. Intellectual Property Rights (IPR) for any work, ideas, designs, documents, source code, or products developed jointly by QRACE and NIT Delhi under the scope of this MoU ("Foreground IP") shall be jointly owned by QRACE and NIT Delhi. 7.3. The brand value and any IP in process arising from joint activities would be jointly shared between both entities. 7.4. Specific terms regarding the ownership, protection, commercialization, and sharing of benefits arising from jointly created Foreground IP shall be mutually agreed upon in writing on a case-by-case basis in separate agreements. 7.5. Both Parties will take all necessary steps to protect the Intellectual Properties generated during the process or shared by the Parties. 7.6. Joint patent publications will be pursued for patentable outcomes of collaborative research.

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ARTICLE 8: RESOURCE REQUIREMENTS

8.1. To successfully establish and operate the joint research and development activities, the Parties acknowledge the need for resources including, but not limited to: * Funding: Initial and ongoing financial support for infrastructure, equipment, staffing, research projects, scholarships, and operational costs. * Infrastructure: Access to or development of state-of-the-art laboratories equipped with quantum computing hardware, advanced computational facilities, and software tools, as per project requirements and mutual agreement. * Human Resources: Recruitment or deputation of qualified researchers, faculty, students, and support staff for administration and technical assistance. Joint Ph.D. guidance will be encouraged.

ARTICLE 9: DISPUTE RESOLUTION

9.1. The Parties shall use their best efforts to settle amicably any dispute, controversy, or claim arising out of or relating to this MoU or the breach, termination, or invalidity thereof. 9.2. If a dispute cannot be settled amicably through negotiation between the designated POCs or project leaders, it shall be referred to the Director of NIT Delhi and the President of QRACE (or their nominated senior representatives) for resolution. 9.3. The decisions so arrived at shall be binding on both Parties.

ARTICLE 10: FORCE MAJEURE

10.1. Neither Party shall be liable for any failure to perform any of its obligations under this MoU if the performance is prevented, hindered, or delayed by a Force Majeure event. A "Force Majeure Event" means an event which is beyond the reasonable control of the Party concerned, including but not limited to unavailability of communication systems, sabotage, fire, flood, explosion, acts of God, civil commotion, strikes or industrial action of any kind, riots, insurrection, war, acts of government, pandemic, or epidemic. 10.2. The Party affected by a Force Majeure Event shall notify the other Party as soon as reasonably practicable and shall make all reasonable efforts to mitigate the effects of such event. 10.3. If the Force Majeure condition continues beyond two (2) months, the Parties shall mutually decide about the future course of action.

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ARTICLE 11: NOTICES AND SINGLE POINT OF CONTACTS (POCs)

11.1. To enable speedy progress, tracking & issues addressable of QRACE activities, Single Point of Contact are nominated by both the parties whose names & communication information are provided asunder:

For Quantum Research and Centre of Excellence (QRACE) For National Institute of Technology Delhi (NIT Delhi)

Sign:



PRESIDENT
QUANTUM RESEARCH AND
CENTRE OF EXCELLENCE

Dr. Kumar Gautam
Founder and President

Email: kumar.gautam@qrace.org

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Sign:


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Director/निदेशक
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Witness 1

Name: *Dr. Kumar Shodhan*

Sign:



Witness 1

Name: *Prof. Mr. Hitesh Sharma*

Sign:


21/05/25

Witness 2

Name: *Dr. V.S. Pandey*


Sign:


21/5/25

Witness 2 *Prof. Dr. Chandra Sekhar*

Name:

Sign:


21/05/25