**Memorandum of Understanding**

Between

**Rajiv Gandhi Institute of Petroleum Technology**

And

**Delft University of Technology**

This Memorandum of Understanding (MOU) is entered into between:

**Rajiv Gandhi Institute of Petroleum Technology,** an Institution of National Importance, incorporated through an Act of Parliament ("Rajiv Gandhi Institute of Petroleum Technology Act 2007"), located at Jais, Uttar Pradesh, with two more campuses, one in Bengaluru and one in Sivasagar, Assam (hereinafter referred to as "**RGIPT**", which expression unless repugnant to the context shall mean and include its successors and permitted assigns).

AND

**Technische Universiteit Delft (TU Delft)** is the oldest and largest Dutch public technical university, located in Delft, Netherlands. It specializes in engineering, technology, computing, design, and natural sciences (hereinafter referred to as "**TU Delft**", which expression unless repugnant to the context shall mean and include its successors and permitted assigns), of the one part.

"Party" means **RGIPT** or **TU Delft** as appropriate in the context of this MoU. "Parties" means **RGIPT** and **TU Delft**.

**RECITALS**

**Whereas, RGIPT** is a premier petroleum institute in India and providing world class education, training, and research to roll out efficient human resources to meet the growing requirements of the Petroleum & Energy sector.

**Whereas, Technische Universiteit Delft (TU Delft) is the oldest and largest Dutch public technical university, located in Delft, Netherlands. It specializes in engineering, technology, computing, design, and natural sciences** (hereinafter referred to as TUD), of the SECOND PART.

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**Whereas,** RGIPT and **TU Delft** wish to collaborate to leverage each other's strength for mutual benefit and intend to promote ongoing mutual cooperation in academic, training, research activities.

**And Whereas,** to this end, **RGIPT** and **TU Delft** have discussed certain arrangements on the basis of which they wish to establish a framework for the advancement of academic, research collaboration and exchanges in areas of interest and benefit to both parties.

**NOW THEREFORE THIS MoU WITNESSETH AS FOLLOWS:**

## ARTICLE -1:MUTUAL UNDERSTANDING OF THE PARTIES

Both parties mutually have agreed to execute the following general forms of cooperation:

a. Visit of Faculty/ Staff/ Student in areas of mutual interest (Annexed-1)
b. Exchange of scientific and technical information.
c. Collaborative research activities through participation in nationally and internationally funded projects
d. Training of students of both institutions as per the facilities and resources available
e. Jointly organize events such as seminars, workshops, conferences and training programmes
f. Sharing of library facility
g. Joint supervision of PG/PhD students in the areas as annexed.
h. Any other matter/s as agreed above which are not covered above

## ARTICLE -2:FINANCIAL ARRANGEMENTS

Financial arrangement for each program or activity will be negotiated and sanctioned by both the parties subject to availability of funds and the approval of the competent authority of **RGIPT** and **TU Delft**.

## ARTICLE -3: INTELLECTUAL PROPERTY RIGHTS

The 'Intellectual Property' developed pursuant to this MOU shall vest with the Party that generates it. In case of jointly developed Intellectual Property this shall vest with **RGIPT** and **TU Delft** jointly. In such case Parties will agree on the allocation and terms of exercise of their joint ownership in a separate agreement taking into account the respective contribution of each Party in generating the Intellectual Property. Prior to practice of such Intellectual Property Rights developed, an FTO (Freedom to Operate) opinion shall be obtained.

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**ARTICLE -4:**

The officials who will have the responsibility in coordinating the program for the parties are:

**For RGIPT:**

**Dean, Research and Development**
**Rajiv Gandhi Institute of Petroleum Technology (RGIPT)**
**Jais, Amethi (UP)-229304**

**For TU Delft:**

**Dean Faculty of Applied Sciences**
**Prof.Dr.Ir. P.M. Herder,**

**ARTICLE -5: TERMS AND CONDITIONS**

a. The effective date shall mean the date this MOU shall be deemed to have come into force.

b. This MOU shall be effective from the date of signing.

c. This MOU shall be valid for an initial period of Five (5) years from the Effective Date.

d. The Parties may review the conditions of the MoU one year before the expiry of the MOU and extend its validity or enter into a fresh agreement if they so mutually agree.

e. The modification/ changes shall be effective from the date on which they are made/ executed, unless otherwise agreed to.

f. This MoU may be terminated by either Party at any time by giving 1-month prior written notice to the other Party. In the event of termination, both parties shall ensure that the interests of students working/project under this MoU is safeguarded to the extent possible.

g. No party shall have the right to use the name or logo of another party without the prior approval of that party in writing.

h. In the event of any dispute or difference arising in the implementation of the MoU, the disputes will be resolved amicably by mutual discussions between the Directors of the institutions.

**ARTICLE - 6: DISPUTE RESOLUTION**

a. Any dispute arising out of or in connection with the execution or interpretation of this Agreement shall first be attempted to be settled amicably by negotiation in good faith between representatives of both Parties.
b. If the Parties are unable to settle such dispute by negotiation, then the Universities will attempt to resolve the dispute through non-binding mediation, using Skype or other video-conference options.

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c. If the dispute still remains unresolved after mediation, it shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce (ICC) by one or more arbitrators appointed in accordance with the said Rules.

**ARTICLE -7: IN WITNESS WHEREOF, the undersigned hereby execute this MOU as of dates written below:**

**Rajiv Gandhi Institute of Petroleum Technology**

Signature: Hirani 19.11.25

Name: Prof. Harish Hirani
Title: Director, RGIPT
Date: 19th November 2025

Prof. Harish Hirani
निदेशक / Director
राजीव गाँधी पेट्रोलियम प्रौद्योगिकी संस्थान
Rajiv Gandhi Institute of Petroleum Technology
बहादुरपुर, हरबंसगंज, अमेठी–229304, उ०प्र०, भारत
Bahadurpur Harbanshganj, Amethi-229304, UP, India

**Technische Universiteit Delft**

Signature:

Name: Prof. Dr. Ir. P.M. Herder
Title: Dean Faculty of Applied Sciences
Date: 9/12/2025

Witnesses:

1. M.S. 19/Nov/2025 [M.S. BALATHANDAYUTHAPANI] Dean (R&D)

2. Milan Kumar 19/11/25 Dr. Milan Kumar Asst. Dean, R&D

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# Annex: Outline of Collaborative Activities under the MoU between RGIPT and TU Delft

## 1. Formalization of Collaboration

- Signing of the Memorandum of Understanding between RGIPT and TU Delft.
- Establishment of designated coordinators at both institutions to oversee the collaboration.

## 2. Joint Research Themes

The collaboration will leverage complementary expertise:
- **RGIPT (India):** Corrosion science, inhibitor and coating development, hydrogen embrittlement mitigation, and industrial translation of corrosion-control technologies.
- **TU Delft (Netherlands):** Neutron and X-ray scattering methods, colloid and interface science, soft matter self-assembly, friction modifiers, and advanced characterization of complex fluids and interfaces.

## 3. Initial Areas of Collaboration

a. **Corrosion Inhibition in Energy Applications**
- Development and testing of novel inhibitors and coatings for ethanol/methanol-blended fuels, seawater-exposed structures, and hydrogen systems.
- Structural and interfacial insights obtained using neutron scattering at international large-scale facilities (ILL, ESS, ISIS, ANSTO).

b. **Neutron and X-ray Scattering Applications**
- Application of small-angle neutron scattering (SANS), neutron reflectometry, and SESANS to understand corrosion processes at interfaces.
- Joint development of scattering-based methodologies for in situ monitoring of corrosion and protective film formation.

c. **Friction Modifiers and Tribology**
- Investigation of organic friction modifiers and advanced additives for reducing energy losses in engines and machinery.
- Use of scattering and surface characterization techniques to elucidate lubrication and anti-wear film mechanisms.

d. **Green and Sustainable Materials**
- Design and testing of eco-friendly inhibitors (bio-derived, grass-based) with combined laboratory and scattering-based structural analysis.
- Exploration of coatings for hydrogen energy applications, including embrittlement-resistant films.

## 4. Capacity Building and Exchange

- Faculty, postdoctoral, and student exchanges for training in scattering techniques, corrosion science, and tribology.
- Joint teaching activities such as short courses or modules on corrosion science, tribology, and advanced characterization methods.

## 5. Joint Funding and Industrial Links

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• Submission of collaborative proposals to Indian and Dutch national funding agencies, as well as EU–India joint calls.
• Exploration of industrial partnerships with oil, gas, and renewable energy companies in both India and Europe.

## 6. Long-term Goals

• Establishment of a joint Centre of Excellence on Corrosion, Tribology, and Advanced Characterization.
• Development of a shared portfolio of patents and technology transfer opportunities.