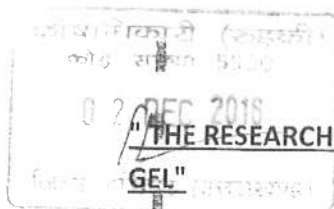




उत्तराखण्ड UTTARAKHAND

K 624413



MEMORANDUM OF UNDERSTANDING FOR

"THE RESEARCH FOR WASTEWATER TREATMENT TECHNOLOGY BY USING KURARAY PVA

GEL"

This MOU is executed on 6<sup>th</sup> Dec. 2016 between Indian Institute of Technology Roorkee (hereinafter referred to as "IIT RKE") through its Authorized Signatory Prof. Dr. A. A. Kazmi of Civil Engineering Department IIT RKE duly authorized by the IIT RKE to sign on behalf of IIT RKE having its registered office address at Dept. of Civil Engineering, IIT Roorkee, Uttarakhand 247 667, India

AND

Kuraray Co., Ltd. (including its subsidiaries, Kuraray India Private Limited, having its main office at unit no. 16-18, Southern Park Building, D2, District Centre, Saket, New Delhi-110017, India, and Kuraray Asia Pacific Pte. Ltd., having its main office at 10 Sakra Ave., Singapore 627887, hereinafter collectively referred to as "KRC") having its business office at OTE Center Bldg., 1-1-3, Otemachi, Chiyoda-ku, Tokyo 100-8115, Japan.

**General**

Whereas, KRC is presently engaged in manufacturing and supplying moving bed bio reactor composed of primarily polyvinyl alcohol (hereinafter referred to as "PVA Gel"), and intends to expand the sales of the PVA Gel in India;

Whereas, IIT RKE has the expertise and knowledge to undertake projects aiming at the evaluation of moving bed bio reactor (hereinafter referred to as "MBBR") in India.

SK

Whereas, KRC desires that IIT RKE performs the technical evaluation of Reduction in Hydraulic Retention Time (HRT) & Organic Sludge & Nitrogen removal in Sewage Treatment by PVA Gel system in India, and IIT RKE is willing to perform such evaluation in response to KRC's request, on the terms and conditions hereinafter set forth.

Now, therefore, both the parties hereto agree as follows:

### 1. Scope

1.1 IIT RKE agrees to conduct performance of the evaluation project with respect to the review study of "PVA Gel" (hereinafter referred to as the "Project") for sewage Treatment at IIT RKE's site according to the schedule as set forth in Exhibit 1 attached hereto. The scope of the Project performed by IIT RKE will include, but not limited to;

- (a) operating the sewage treatment test machine using the PVA Gel designed by KRC which is specified in Exhibit 2 attached hereto (hereinafter referred to as the "Test Equipment");
- (b) sampling influent and effluent of the Test Equipment and analyzing all required parameters such as, without limitation, pH, Temp, BOD, COD, TSS, Turbidity, Color, NH4-N, NO3-N, TKN, TP, SRT, F/M, MLSS, MLVSS, DO and SVI levels;
- (c) searching the optimal operating condition of the Test Equipment for the real municipal wastewater obtained at IIT RKE;
- (d) examining PVA Gel's capability and performance of wastewater treatment comparing with other MBBRs and conventional treatment methods with respect to hydraulic retention time, rejection ratio of BOD, COD, T-N and excess sludge generation ratio etc;
- (e) reviewing and evaluating PVA Gel's capability and performance of wastewater treatment comparing with other MBBRs and conventional treatment methods;
- (f) analyzing sludge reduction in the Test Equipment and evaluating potential use.

1.2 From time to time during the term of this MOU, but at least every three months, the parties hereto will have meetings for the exchange of technical, operational and other information required in connection with the Project. At such meetings, KRC and IIT RKE will review the progress of the Project and discuss and determine scope and schedule of further proceeding with the Project.

1.3 From time to time during the term of this MOU, written progress reports shall be provided by IIT RKE to KRC. A final report shall be submitted by IIT RKE within thirty (30) days after the expiration or early termination of this MOU.

1. First Report on this testing, on or before 30<sup>th</sup> July 2017
2. Second Report on this testing, on or before 30<sup>th</sup> December 2017
3. Final Report (Third Report) on this testing before 10<sup>th</sup> January 2018

## 2. Consultancy Charges

2.1 KRC shall pay research and development fees of two million Indian Rupees (2,000,000 INR) and service tax extra as applicable to IIT RKE for conducting the Project. Such payment shall be made by telegraphic transfer based on the invoice to be issued by IIT RKE. If KRC is required by the authorities in Japan, KRC shall be responsible for withholding tax.

2.2 Research and development fees, which are the subject to 10% withholding tax in Japan, are payable in three (3) installments as set forth below;

(a) the first net installment payment (after taxes) of six hundred thousand Indian Rupees (600,000 INR) shall be made within thirty (30) days after the execution of this MOU in 2016 ;

(b) the second net installment payment (after taxes) of six hundred thousand Indian Rupees (600,000 INR) shall be made within thirty (30) days after the receipt of the first report pursuant to the Paragraph 1.3 hereof ; and

(c) the final net installment payment (after taxes) of six hundred thousand Indian Rupees (600,000 INR) shall be made within thirty (30) days after the receipt of the final report pursuant to the Paragraph 1.3 hereof.

2.3 In addition, only if IIT RKE obtains prior written consent from KRC, KRC shall reimburse travel allowance for presenting a paper regarding the Project at International/National Seminar to IIT RKE. Maximum payment will be ten thousand Indian Rupees (10,000 INR) per year.

2.4 Except as otherwise agreed upon by the parties or otherwise provided in this MOU, KRC shall not be obligated to make any payment other than such payment as provided for in Paragraph 2.1, 2.2 and 2.3 above for the Project performed by IIT RKE hereunder.

## 3. Responsibilities

- 3.1 KRC agrees to lease the Test Equipment to IIT RKE solely for use in the performance of the Project during term of the Project performed by IIT RKE. Unless otherwise agreed upon between the parties hereto, no rent or other consideration shall be payable by IIT RKE for such lease.
- 3.2 IIT RKE shall use the Test Equipment leased by KRC pursuant to Paragraph 3.1 above only for the performance of the Project and shall not use the Test Equipment for any other purpose without prior written consent from KRC.
- 3.3 KRC agrees to pass over the Test Equipment to IIT RKE by delivering the same to the IIT RKE campus on the schedule as set forth in Exhibit 1 attached hereto by such procedure as will be determined by KRC and IIT RKE.
- 3.4 IIT RKE shall confirm that as of the delivery date described in Paragraph 3.3 above, all the Test Equipment is delivered in good condition to the IIT RKE campus in India.
- 3.5 KRC shall be responsible for providing the basic maintenance, technology and operation method of the Test Equipment to IIT RKE personnel according to schedule as set forth in Exhibit 1 attached hereto.
- 3.6 From the delivery date described in Paragraph 3.4 above until the termination of this MOU, IIT RKE shall be responsible for operation, repair and maintenance of the Test Equipment by itself according to the KRC's instruction pursuant to Paragraph 3.5 above.
- 3.7 In case breakdown or malfunction of the Test Equipment occurs and estimate of the cost and expense required for fixing such breakdown or malfunction exceeds fifteen thousand Indian Rupee (15,000 INR), IIT RKE shall immediately inform KRC of the occurrence. KRC and IIT RKE shall cooperate in investigating the cause of the breakdown or malfunction. The share of the cost and expense required for fixing the breakdown or malfunction of the Test Equipment shall be discussed and reasonably determined between KRC and IIT RKE.
- 3.8 KRC shall provide to IIT RKE, for free of charge, the reasonable amount of the PVA Gel required for the Project.

#### 4. Confidentiality / Publications / Patents

All KRC's confidential information, results, analysis, findings and any other data obtained by IIT RKE in the course of the Project shall be kept confidential by IIT RKE. Any inventions, data or finding obtained by IIT RKE as a result of the Project is a property of KRC only.

Further IIT RKE shall not use or publish any data obtained by IIT RKE in the course of the Project without prior permission of KRC. Any right to publish or to file patent application originating out of the Project shall belong to KRC only. It is to be explicitly understood by the IIT RKE that PVA Gel method is KRC's unique technology and IIT RKE shall not copy or develop a similar technology or disclose any of the technology information including drawing and design to any third party or use them for any other purpose.

#### 5. Force Majeure

If either party hereto shall either totally or temporarily be unable to perform its obligations under this MOU due to unforeseeable causes beyond his control and not due to his fault or negligence, including, but not limited to, act of nature or public enemy, act of the Government in its sovereign capacity, fire, flood, epidemics, quarantine restrictions, strike other than those carried out by the IIT RKE's staff, unusual severe weather conditions (hereinafter referred to as "Force Majeure"), such party shall notify to the other party in writing within fifteen (15) days of an occurrence of such Force Majeure with its details.

In such case, neither party shall be responsible for delays or failure of performance caused by Force Majeure. If the Force Majeure situation continues for more than two (2) months, the term of this MOU shall be renegotiated for any period necessary for the completion of the Project due to suspension.

#### 6. Arbitration

In the event of any dispute or difference at any time arising between the parties in relation to the Project or any other clause(s) or any content of the right and liabilities of the parties or other matters specified therein or with reference to anything arising out of the MOU or otherwise in relation to the terms, whether during the MOU or thereafter, such disputes or differences shall be endeavored be resolved by mutual negotiations. If, however, such negotiations are infructuous, the disputes shall be finally settled by the arbitration in accordance with the rules of procedure of Arbitration and Conciliation Act, 1996 by three arbitrators appointed in accordance with the said Act 1996. The award shall give respond and speaking award.

#### 7. Liability

*S.K.*

In case any legal dispute arises between the investigators and the sponsor such that the investigators are in anyway held responsible to make good the losses incurred by the sponsor, such liability will be restricted to a maximum limit which will be calculated as follows:

Maximum liability = the total amount charged for the project – the expenditure/liabilities on the project. It is in the interest of the investigators to bring this fact to the notice of the sponsors. The expenditure/liabilities as determined by the institute will be calculated as the the expenditure/liability till such date on which the sponsors inform the investigator in writing to stop work on the project for ongoing projects, or till the end of the project for completed projects. This amount doesn't include the remuneration paid to the investigators and staff of the institute.

## **8. Validity of the MOU**

8.1 This MOU shall be effective from the date as mentioned in the first page of this MOU and shall be valid until 10<sup>th</sup>Feb2018 from the date as mentioned on the first page. The term of this MOU may be extended by mutual agreement among the parties on such terms and conditions as may be agreed upon among the parties.

8.2 In case either of the parties fails to meet their responsibility under this MOU, the other party may terminate this MOU by written notice. Such notice to terminate shall be made via suitable correspondence of the party with its letter head signed by duly authorized personnel.

8.3 Upon termination of this MOU for any reason, IIT RKE shall deliver possession of the Test Equipment to KRC at IIT RKE's site. Upon KRC's request, IIT RKE shall arrange for the transportation of the Test Equipment to the place designated by KRC in India.

## **9. Governing Law**

The validity, construction and performance of this MOU shall be governed by and in accordance with the laws of India.

## **10. Correspondence**

As regards IIT RKE and KRC for the sake of correspondence following addresses and the persons concerned are to be contacted:

S.K.

**Indian Institute of Technology Roorkee**

Department of Civil Engineering

IIT Roorkee

Tel No. : 91-9837262698

Fax No : 91-1332-275568

Contact Person: Dr. A. A. Kazmi

Designation : Professor

**Kuraray Co., Ltd.**

Kuraray CO.,LTD.

OTE CENTER BLDG., 1-1-3, Otemachi

Chiyoda-ku, Tokyo 100-8115, Japan

Tel No. : +81-3-6701-1561

Fax No. : +81-3-6701-1654

Contact Person: Mr. Daichi Narishige


Designation: *Sales Manager*

IN WITNESS WHEREOF, the parties hereto have caused this MOU to be executed by their duly authorized representatives on the day and year first set forth above.

Indian Institute of Technology Roorkee

Kuraray Co., Ltd.

  
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Title: Professor

Title: General Manager

Name : Dr. A. A. Kazmi

Mr. Kajita

Environmental Business

Development and

Promotion Division

Name: Sakae Kajita

End

  
SK

Exhibit 1: Schedule

06/12/2016 : MOU executed

06/12/2016~31/01/2017 : Setting the equipment at the site

01/02/2017~28/02/2017 : Starting up the test machine

01/02/2017~30/12/2017 : Operating the test machine

30/07/2017 : First Report

30/12/2017 : Second Report

10/01/2018 : Final Report

Handwritten signature and initials, possibly 'S.K.', with a checkmark above it.



Exhibit 2: Test Equipment

Item No.	Description of goods			No. of psc.
	Name	Maker	Model / Property No.	
1	Biological treatment test Test Equipment	Kuraray	KGQ01E2143	1
2	Cassette tube pump	AS ONE	SMP-23AS	2
3	Cassette tube pump	MASTERFLEX	7554-80, 7518-10	4
4	Industrial pH converter	HORIBA	HP-480	1

*S.K.*