



### MEMORANDUM OF UNDERSTANDING

This memorandum of understanding is made on 25/07/2023 ("Effective Date"), between Shree Guru Gobind Singh Tricentenary (SGT) University, Gurugram, Haryana, (hereinafter referred to as "SGTU" which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors, and assigns and to the extent expressly set forth herein, its affiliates), represented by the Registrar.

AND

Institute of Pesticides Formulation Technology, Department of Chemicals and Petrochemicals, (Ministry of Chemicals & Fertilizers, Govt. of India), Sector 20, Udyog Vihar, Gurugram, Haryana 122016, (hereinafter referred to as "IPFT" which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors, and assigns and to the extent expressly set forth herein, its affiliates), represented by the Director.

#### 1. GENERAL

This MOU proposes the research collaborations and instrument facility access exchange by "SGTU" and "IPFT" in partnership mode. The areas of responsibility and activities presented hereinafter provide the concept under which the collaboration will be executed.

#### 2. ACTIVITIES

##### 2.1 Objectives

- To undertake collaborative research projects
- To analyze pesticide samples/Pesticide residue analysis
- Bio-efficacy studies

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- Training of faculty members/Research Scholars/Students
- Summer training/Internship programs

## 2.2 The research activities involved at 'SGTU'

- Development of synthetic strategies, synthesis, and docking studies of biologically important organic compounds.
- Extraction and purification of natural products.

**2.3 The research activities involved at 'IPFT'** (on payment basis as described in Annexure II and will be subject to discounts communicated to SGT over e-mail by IPFT)

- Development of innovative formulations of selected insecticides/ agricultural materials at laboratory scale.
- Analysis of pesticides/natural products/ agricultural materials/pesticide residue analysis.
- Bio-efficacy studies.

**2.4** The manpower and resources will be met from the organization / project funding. Each party will execute its responsibilities from the resources available from their own organization / project.

**3. GENERAL AREA OF COOPERATION:** (on payment basis as described in Annexure II and will be subject to discounts communicated to SGT over e-mail by IPFT)

Assistance shall be carried out subject to the advance written approval through such activities or programs as:

- Training/internship/Dissertation Programs, Workshops and Seminars for Postgraduate and Undergraduate Students on payment basis. Minimum ten students/Research Scholars will be allowed to join training/internship.
- IPFT will allow above mentioned College Students to visit and to gain live exposure of the institute, on a mutual consent and terms and conditions.
- As SGT University, Gurugram has qualified Researchers and learned Professors, therefore the university will become Industry's knowledge Partner.
- IPFT, Gurugram will provide necessary assistance to SGT University, in the field of Scientific Research.

Both the organizations will exchange their experiences and will cooperate with each other.

## 4. FUNDING:

For the research & development work of mutual interest for both SGTU and IPFT, the funding may be i) borne by the two institutions jointly through agreed apportionment or ii)

  
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SGTU and IPFT can jointly explore the possibility of external funding of collaborative research and development projects according to terms outlined in Annexure I.

Funding for some of the items like routine chemical/reference standard/Instrument consumables will jointly be borne by IPFT and SGTU.

#### 5. TERMINATION:

If either partner institution wishes to terminate this agreement at the end of three years period, it must notify the other institution not less than six months prior to the expiry of the agreement. However, any party at any time may wish to terminate this Agreement may do so by giving six months written notice to other party, till then the terms of this Agreement shall be followed strictly in letter and spirit. However, both the Parties will meet any residual obligations in connection with the present MOU, notwithstanding its termination.

#### 6. APPLICABLE LAWS:

The application statutes, regulations, directives, and procedures of the Govt. of India shall govern this MOU and all documents and actions pursuant to it. The Parties hereby irrevocably submit to the exclusive jurisdiction of the courts of Gurugram. Unless otherwise required by law, all work undertaken by 'SGTU' and 'IPFT' shall be governed by the policies and procedures of the respective institutions.

#### 7. DISPUTES:

Should there be any difference of opinion between the parties or if any dispute arises as to any of the matters provided for in this Agreement, the parties shall endeavor to settle such differences and / or disputes in an amicable manner through mutual consultation.

#### 8. WARRANTIES:

The parties in no way guarantee Research Service performed pursuant to this Agreement and make no warranties express or implied, regarding the equality of product produced under this Agreement.

#### 9. INTELLECTUAL PROPERTY:

If and only if any 'invention' arises from the performance of this agreement shall this clause apply. 'Invention' shall mean any discovery, concept or idea whether or not patentable, resulting from the project.

- Patents, Publications, Technologies and other IPRs to an invention made in collaboration shall be held jointly by 'SGTU' and 'IPFT' in a fifty- fifty proportion.
- The Parties further agree and warrant that they will, without any objection or condition, do all acts necessary for the other Party to enjoy such Invention including but not limited to giving requisite licenses or rights for the same.

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- Any returns arising out of commercialization of the Intellectual Property generated out of the programmes undertaken under this MoU, will be shared in proportion that will be decided mutually in writing by both the parties, on case-to-case basis and through exchange of letters.

#### 10. RECORDS:

During the term of this Agreement/ specified the Developing Party shall keep complete and accurate records pertaining to the results and other details.

#### 11. CONFIDENTIALITY:

The parties agree that any proprietary business and/or technical information or material received orally or in writing and which is designated as "Confidential" or similar restrictive legend (hereinafter "Confidential Information") provided in connection with this MOU will be held and maintained in strict confidence. A party in receipt of confidential information from other party must not use or disclose the other party's confidential information without that other party's prior written consent other than (i) for the purpose of carrying out this MOU, provided any disclosure is only to such of the receiving Party's personnel or to its related company and its personnel who need to know and who is subject to the confidentiality requirements of this MOU or (ii) as required by law. The confidentiality obligations herein will not apply to information in the public domain; information in the possession of the receiving party prior to the disclosure of the information; information which is independently developed by the receiving party; Information required to be released by law; and information which is rightfully received by the receiving party from third parties without any breach of confidentiality obligations. The obligation upon the parties to protect the Confidential Information of the other under this MOU shall survive any expiration or termination of the relationship between the parties for any reason.

#### 12. REVIEW:

This agreement will be reviewed annually to ensure adequate identification of support requirements. Additional reviews may take place when changing conditions or circumstances require substantial changes or development of a new agreement. Minor changes may be made at any time by correcting the existing document or attaching a memorandum to the basic document. Changes must be co-ordinate and initialed by a representative of the parties.

#### 13. AMENDMENT AND MODIFICATION:

This MOU may be amended or modified only by written, mutual agreement of the parties.

#### 14. EFFECTIVE DATE:

This agreement becomes effective upon the date of last approving signature and will

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remain in effect for **three years** until superseded, rescinded or modified by written, mutual agreement of both parties.

#### 15. INDEPENDENT CONTRACTORS:

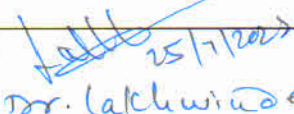
The status of the parties under this MOU shall be that of independent contractors. No party shall be authorized to waive any right, or assume or create any contract or obligation of any kind in the name of, or on behalf of, the other or to make any statement that it has the authority to do so. Nothing in this MOU shall be construed as establishing a partnership, joint venture, agency, employment or other similar relationship between the parties hereto

#### 16. ACCEPTANCE OF AGREEMENT:

Signed and executed this day of 25-07-2023 by the SGTU and IPFT for a period of three years with the official signatory and company seals of both the parties affixed here below:

|                                                                                                                                               |                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br><b>Registrar</b><br>SGT University<br>Budhera, Gurugram | <br> |
| <b>Registrar</b><br>SGT University, Budhera, Gurugram,<br>Haryana-122505                                                                      | <b>Director</b><br>Institute of Pesticides Formulation<br>technology, Department of Chemical and<br>Petrochemicals, Sector 20, Udyog Vihar,<br>Gurugram-122016, Haryana    |

Date:  
Witness

| Name and address                                                                                                    | Name and address                                                                                               |
|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 1. <br>Dr. Lachwinder Singh      | 1. <br>DR. L.K. TITAKUR   |
| 2. <br>ASTUR KUMAR<br>Dean Agri. | 2. <br>Dr. Amrich Aggarwal |

Date: Signed this on 25<sup>th</sup> day of July 2023

Joint Research Programme

1. Proposals for external funding for collaborative research work under the Memorandum will be submitted with the prior approval of the Head of each institution.
2. Each Institution will nominate one of its members as its representative in charge of the collaborative programme. Individual programmes of work under this Memorandum will be jointly planned and supervised by the nominee of both parties.
3. Progress of work of any individual programme will be reviewed and approved by designated authorities of both parties.
4. The final approval of any project will depend on the availability of guaranteed support funds.
5. Neither SGTU nor IPFT will be held responsible for any liability to the other party, and neither party shall be required to purchase any insurance against loss or damage to any property due to activities to which this Memorandum of Understanding relates.

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*Amulya*





## Annexure - II User Charges

### Analytical Testing Charges:

| S.No                                                        | Name of test                                                                                                                                                                                                                                                                            | Industries / Govt. Organizations/<br>agencies |                                 |                                   | Research<br>Scholars/<br>Students/ | Research<br>project under<br>MoU | MSME<br>(Minimum 10<br>samples for<br>MSME) |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------|-----------------------------------|------------------------------------|----------------------------------|---------------------------------------------|
|                                                             |                                                                                                                                                                                                                                                                                         | Small<br>(Sample<br>no. 1-10)                 | Medium<br>(Sample<br>no. 11-50) | Large<br>(Sample no.<br>Above 50) |                                    |                                  |                                             |
| 1                                                           | HPLC (A.I Content)                                                                                                                                                                                                                                                                      | 5200.00                                       | 4800.00                         | 4600.00                           | 1800.00                            | 1300.00                          | 2600                                        |
| 2                                                           | GC (A.I Content)                                                                                                                                                                                                                                                                        | 4000.00                                       | 3800.00                         | 3600.00                           | 1400.00                            | 1000.00                          | 2000.00                                     |
| 3                                                           | GC-MS                                                                                                                                                                                                                                                                                   | 6000.00                                       | 5500.00                         | 5300.00                           | 2100.00                            | 1500.00                          | 3000.00                                     |
| 4                                                           | Residue Analysis (GC-MS/GC-MSMS scope)                                                                                                                                                                                                                                                  | 4000.00                                       | 3700.00                         | 3500.00                           | 1400.00                            | 1000.00                          | 2000.00                                     |
| 5                                                           | Residue Analysis (GC-MSMS & LC-MSMS)                                                                                                                                                                                                                                                    | 8000.00                                       | 7400.00                         | 7000.00                           | 2800.00                            | 2000.00                          | 4000.00                                     |
| 6                                                           | HPLC with complete analysis of Pesticide formulation                                                                                                                                                                                                                                    | 8600.00                                       | 8300.00                         | 8000.00                           | 3000.00                            | 2150.00                          | 4300.00                                     |
| 7                                                           | GC with complete analysis of Pesticide formulation                                                                                                                                                                                                                                      | 7000.00                                       | 6700.00                         | 6300.00                           | 2400.00                            | 1750.00                          | 3500.00                                     |
| 8                                                           | Moisture Analysis/ pH/ Sieving/ any other physical chemical parameter (except suspensibility as per A.I. analysis method) of pesticide formulation                                                                                                                                      | 1000.00                                       | 900.00                          | 800.00                            | 350.00                             | 250.00                           | 500.00                                      |
| 9                                                           | LC-MS/MS (Triple Quad)                                                                                                                                                                                                                                                                  | 8000.00                                       | 7500.00                         | 7200.00                           | 2800.00                            | 2000.00                          | 4000.00                                     |
| 10                                                          | GC-MS/MS (Triple Quad)                                                                                                                                                                                                                                                                  | 8000.00                                       | 7500.00                         | 7200.00                           | 2800                               | 2000.00                          | 4000.00                                     |
| 11                                                          | LC-HRMS (Q-TOF)                                                                                                                                                                                                                                                                         | 8000.00                                       | 7500.00                         | 7200.00                           | 2800                               | 2000.00                          | 4000.00                                     |
| 12                                                          | ICP-MS                                                                                                                                                                                                                                                                                  | 8000.00                                       | 7500.00                         | 7200.00                           | 2800                               | 2000.00                          | 4000.00                                     |
| 13                                                          | UV                                                                                                                                                                                                                                                                                      | 2000.00                                       | 1900.00                         | 1800.00                           | 700                                | 500.00                           | 1000.00                                     |
| 14                                                          | FTIR                                                                                                                                                                                                                                                                                    | 2000.00                                       | 1900.00                         | 1800.00                           | 700                                | 500.00                           | 1000.00                                     |
| 15                                                          | Analysis of CWC related chemicals                                                                                                                                                                                                                                                       | 10000.00                                      | 9500.00                         | 9200.00                           | 3500                               | 2500.00                          | 5000.00                                     |
| 16                                                          | Analysis of Rock Phosphate                                                                                                                                                                                                                                                              | 55000.00                                      | 51000.00                        | 46000.00                          | 19250.00                           | 13750.00                         | 27500.00                                    |
| <b>Project Cost for Persistence &amp; Residue Studies :</b> |                                                                                                                                                                                                                                                                                         |                                               |                                 |                                   |                                    |                                  |                                             |
| 17                                                          | Residue / Persistence study of Pesticide on crop and related substrate (One location, one season study)                                                                                                                                                                                 |                                               |                                 |                                   | 2,50,000.00                        |                                  | 1,25,000.00                                 |
| 18                                                          | Persistence studies of pesticide in/on soil for four different agro-climatic zones                                                                                                                                                                                                      |                                               |                                 |                                   | 6,00,000.00                        |                                  | 3,00,000.00                                 |
| 19                                                          | Persistence studies of pesticides in/on water of three different pH                                                                                                                                                                                                                     |                                               |                                 |                                   | 5,00,000.00                        |                                  | 2,50,000.00                                 |
| 20                                                          | Laboratory testing of Long Lasting Insecticidal Nets (LLIN)<br><br>Complete study of Chemical Parameters -<br>Test/ Study Parameters<br>i. Wash-resistance Study (Chemical Analysis)<br>ii. Between- and within net variability<br>(Note. Detailed proposal is enclosed as Annexure- I) |                                               |                                 |                                   | 1,80,600.00                        |                                  | 90,300.00                                   |
| 21                                                          | Laboratory testing of Long Lasting Insecticidal Nets (LLIN)<br><br>Partial study/ Study applicable for each lot of sample (Chemical Parameters) -<br>Test/ Study Parameters<br>i. Wash-resistance Study (Chemical Analysis, 9 samples are tested)                                       |                                               |                                 |                                   | 36000.00                           |                                  | 18000.00                                    |

\*GST extra.



**User charges for NMR analysis:**

| Equipment/ Parameter                                  | Test | Govt. organizations/ Academic & Research Institution/ Universities                                                     | Private Industries                                                                                                       | Research project under MoU                                                                                             | MSME                                                                                                                    |
|-------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 500 MHz Nuclear Magnetic Resonance (NMR) Spectrometer |      | a) <sup>1</sup> H NMR: Rs. 375.00<br>b) <sup>13</sup> C and other Nuclei: Rs. 550.00<br>c) 2D experiments: Rs. 1000.00 | a) <sup>1</sup> H NMR: Rs. 1500.00<br>b) <sup>13</sup> C and other Nuclei: Rs. 2200.00<br>c) 2D experiments: Rs. 4000.00 | a) <sup>1</sup> H NMR: Rs. 375.00<br>b) <sup>13</sup> C and other Nuclei: Rs. 550.00<br>c) 2D experiments: Rs. 1000.00 | a) <sup>1</sup> H NMR: Rs. 750.00<br>b) <sup>13</sup> C and other Nuclei: Rs. 1100.00<br>c) 2D experiments: Rs. 2000.00 |

**TRAINING PROGRAMME / COURSES OFFERED BY ANALYTICAL DIVISION**

| S. No. | Title of Programme/ Course                               | Duration      | Fee* (Rs.)         |            |           |
|--------|----------------------------------------------------------|---------------|--------------------|------------|-----------|
|        |                                                          |               | Students/ Research | Executives | MSME      |
| 1      | Basic Principles & operations of GC & HPLC               | 5 Days        | 7,000.00           | 20,000.00  | 10000.00  |
| 2      | Advanced training course on GC & HPLC                    | 10 Days       | 14,000.00          | 40,000.00  | 20000.00  |
| 3      | Basic principles & Operations of GC-MS                   | 5 Days        | 14,000.00          | 40,000.00  | 20000.000 |
| 4      | Advanced training course on GC-MS                        | 10 Days       | 21,000.00          | 60,000.00  | 30000.00  |
| 5      | Basic principles & Operations LC-MS/MS                   | 5 Days        | 14,000.00          | 40,000.00  | 20000.00  |
| 6      | Advanced training course on LC-MS/MS                     | 10 Days       | 21,000.00          | 60,000.00  | 30000.00  |
| 7      | Training on principles and operations of LC-HRMS (Q-TOF) | 5 Days        | 14,000.00          | 40,000.00  | 20000.00  |
| 8      | Training on principles and operations of ICP-MS          | 5 Days        | 14,000.00          | 40,000.00  | 20000.00  |
| 9      | Pesticide Residue Analysis                               | 5 Days        | 7,000.00           | 20,000.00  | 10000.00  |
| 10     | Advanced training course on pesticide residue analysis   | 10 Days       | 14,000.00          | 40,000.00  | 20000.00  |
| 11     | Pesticide Quality Control                                | 5 Days        | 7,000.00           | 20,000.00  | 10000.00  |
| 12     | Industrial/Summer training for students                  | Upto 4 months | 20,000.00          |            |           |

\*GST Extra.

Trainings charges for Foreign nationals: USD 1000.00 for Training duration of one week

**BIOSCIENCE DIVISION**
**Bioscience Experiment Charges (Rs.)**

| Sr. No. | Particulars                                                                             | User Charges (Industries / Govt. Organizations/ agencies) | Students/ Research Scholar | Research project under MoU | MSME       |
|---------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------|----------------------------|------------|
| 1.      | Bio efficacy of single product on single crop and one season                            | 87,000.00                                                 | 30450.00                   | 21750.00                   | 43,500.00  |
| 2.      | Phytotoxicity of single product on single crop and one season                           | 58,000.00                                                 | 20300.00                   | 14500.00                   | 29,000.00  |
| 3.      | Bioefficacy along with Phytotoxicity of single product on single crop and one season    | 150,000.00                                                | 52500.00                   | 37500.00                   | 75,000.00  |
| 4.      | Effect of pesticides on natural enemies of single product on single crop and one season | 64,000.00                                                 | 22400.00                   | 16000.00                   | 32,000.00  |
| 5.      | Bioefficacy + Phytotoxicity + Effect on natural enemies per pest per crop per season    | 200,000.00                                                | 70000.00                   | 50000.00                   | 100,000.00 |
| 6.      | Additional pest / observation on same crop                                              | 40,000.00                                                 | 14000.00                   | 10000.00                   | 20,000.00  |
| 7.      | Additional treatment / product after 8 treatments                                       | 23,000.00                                                 | 8050.00                    | 5750.00                    | 11,500.00  |
| 8.      | Effect of pesticide on succeeding crop                                                  | 69,000.00                                                 | 24150.00                   | 17250.00                   | 34,500.00  |
| 9.      | Only Bio-assay trial per known product on single insect species / surface               | 52,000.00                                                 | 18200.00                   | 13000.00                   | 26,000.00  |
| 10.     | Only Bio-assay trial per unknown product on single insect species / surface             | 86,000.00                                                 | 30100.00                   | 21500.00                   | 43,000.00  |
| 11.     | Bioefficacy with Persistency studies per known product / insect species / surface       | 100,000.00                                                | 35000.00                   | 25000.00                   | 50,000.00  |
| 12.     | Additional observations / tests or treatment for bio efficacy comparison                | 40,000.00                                                 | 14000.00                   | 10000.00                   | 20,000.00  |

\* GST will be levied extra as applicable.



# Formulation Experiment Charges (Rs.)

| Sr. No. | Name of test/ Item                                                                  | User Charges (Industries / Govt. Organizations/ agencies)                    | Students/ Research Scholar | Research project under MoU | MSME                       |
|---------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------|----------------------------|----------------------------|
| 1       | Particle size analysis per sample                                                   | 1500.00                                                                      | 525.00                     | 575.00                     | 750.00                     |
| 2       | Scanning Electron Microscope analysis (S.E.M) Per sample                            | 2500.00                                                                      | 875.00                     | 525.00                     | 1250.00                    |
| 3       | Training on basic techniques of pesticide formulation (5 days training ) per person | Executive: 40,000.00<br>Govt. Employees: 30000.00                            | 14000.00                   | 10000.00                   | 20000.00                   |
| 4       | Training on basic techniques of Nano formulations (5 days training ) per person     | Executive: 60,000.00<br>Govt. Employees: 45,000.00                           | 21000.00                   | 15000.00                   | 30000.00                   |
| 5       | Formulation Development                                                             | Ten times of manpower expenses plus expenses towards chemicals, testing etc. | Not applicable             | Note applicable            | Same rate as of Industries |

\* GST will be levied extra as applicable.

Note: User charges will not be applicable or not be charged for institutional collaboration wherein infrastructures of both the organizations are involved or used.

\* GST will be levied extra as applicable.