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MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN
MOHANDAS COLLEGE OF ENGINEERING AND TECHNOLOGY
&
ACUTRO TECHNOLOGIES Pvt Ltd

This Memorandum of Understanding (hereinafter called as the 'MOU') is entered into on this the 15th day of March Two thousand twenty one (15-03-2021).

BETWEEN

Mohandas College of Engineering and Technology, Anad P O, Thiruvananthapuram, the First Party represented herein by Director MCET (hereinafter referred as 'First Party', the institution which expression, unless excluded by or repugnant to the subject or context shall include its successors-in-office, administrators and assigns).

AND

ACUTROTECH, TC25/2168/4, Ayurveda College Thampanoor, Trivandrum, Kerala, India the Second Party, and represented herein by Krishnan Unni J.S; its Managing Director (hereinafter referred to as "Second Party", company which expression, unless excluded by or repugnant to the subject or context shall include its successors – in-office, administrators and assigns).

(First Party and Second Party are hereinafter jointly referred to as 'Parties' and individually as 'Party')

WHEREAS

- First Party & Second Party believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.
- The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education and Research on Electric Vehicle Design and Fabrication.
- Both Parties, being legal entities in themselves desire to sign this MOU for advancing their mutual interest;
- ACUTRO TECHNOLOGIES Pvt Ltd, the Second Party is engaged in Business, Manufacturing, Skill Development, Education and R&D Services in the fields of *engineering research and product development* and related fields.
- ACUTRO TECHNOLOGIES Pvt Ltd, the Second Party is promoted by Krishnan Unni J. S; Managing Director, Acutro Technologies Pvt. Ltd, Research and Development in product development.



- Give related information, its branches, and dimensional information about the industry concerned with whom the MOU is sworn.

Now therefore, in consideration of the mutual promises set forth in this MOU, the parties hereto agree as follows:

CO-OPERATION

- Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within Mohandas College of Engineering and Technology. The Parties shall keep each other informed of potential opportunities and shall share all information that may be relevant to secure additional opportunities for one another.
- First Party and Second Party co-operation will facilitate effective utilization of the intellectual capabilities of the student and faculty of First Party providing significant inputs to them in developing suitable teaching / training systems, keeping in mind the needs of the industry, the Second Party.
- The general terms of co-operation shall be governed by this MOU. The Parties shall cooperate with each other and shall, as promptly as is reasonably practical, enter into all relevant agreements, deeds and documents (the 'Definitive Documents') as may be required to give effect to the actions contemplated in terms of this MOU. The term of Definitive Documents shall be mutually decided between the Parties. Along with the Definitive Documents, this MOU shall represent the entire understanding as to the subject matter hereof and shall supersede any prior understanding between the Parties on the subject matter hereof.

SCOPE OF THE MOU

- The budding graduates from the institutions could play a key role in technological up gradation, innovation and competitiveness of an industry. Both parties believe that close co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge.
- **Curriculum Design:** Second Party will give valuable inputs to the First Party in teaching / training methodology and suitably customize the curriculum so that the students fit into the industrial scenario meaningfully.
- **Skill Development Programs:** Second Party to train the students of First Party on Electric vehicle design and fabrication in order to bridge the skill gap and make them industry ready. The training is to be provided to the identified students of Mohandas College of Engineering and Technology from departments of EEE, EC and ME and as detailed in Annexure-I.



Handwritten signature/initials

Participants and course duration

Training is given to around 65 students and period of training extends for 7 days from 24-03-2021 to 31-03-2021(tentative). The training is imparted under the guidance of Mr **Krishnan Unni J.S;** Managing Director, Acutro Technologies Pvt. Ltd along with the faculty listed in Annexure I.

Issue of certificates to participants

On completion of the course, the participants will be provided with EV Design certificate from Acutro Technologies Germany.

FINANCIAL TERMS

The Second Party shall conduct the said program at the premises of the First Party as per the details provided in Annexure I at a fee of Rs. 3500/- per student. An advance of 20% of the total amount shall be paid to the Second Party prior to the commencement of the course and 80% after the completion and issue of certificate to the students.

INTELLECTUAL PROPERTY

Nothing contained in this MOU shall, by express grant, implication, Estoppel or otherwise, create in either Party any right, title, interest, or license in or to the intellectual property (including but not limited to know-how, inventions, patents, copy rights and designs) of the other Party.

VALIDITY

- This Agreement will be valid until it is expressly terminated by either Party on mutually agreed terms, during which period **ACUTRO TECHNOLOGIES Pvt Ltd**, the Second Party, as the case may be, will take effective steps for implementation of this MOU. Any act on the part of **ACUTRO TECHNOLOGIES Pvt Ltd**, the Second Party after termination of this Agreement by way of communication, correspondence etc., shall not be construed as an extension of this MOU.
- Both Parties may terminate this MOU upon 30 calendar days' notice in writing. In the event of Termination, both parties have to discharge their obligations.

RELATIONSHIP BETWEEN THE PARTIES

It is expressly agreed that **First Party** and **Second Party** are acting under this MOU as independent contractors, and the relationship established under this MOU shall not be construed as a partnership. Neither Party is authorized to use the other Party's name in any way, to make any representations or create any obligation or liability, expressed or implied, on behalf of the other Party, without the prior written consent of the other Party. Neither Party shall have, nor represent itself as having, any authority under the terms of



Krishnan Unni J.S

this MOU to make agreements of any kind in the name of or binding upon the other Party, to pledge the other Party's credit, or to extend credit on behalf of the other Party. Any divergence or difference derived from the interpretation or application of the MOU shall be resolved by arbitration between the parties as per the Arbitration Act, 1996. The place of the arbitration shall be at District Head Quarters of the First Party.

AGREED:

K. Ammune
 15/3/2021



Authorized Signatory
Managing director
ACUTRO TECHNOLOGIES Pvt Ltd
TC25/2168/4, Ayurveda college
Thampanoor, Trivandrum, Kerala(India),

Witness 1: *Akhil Raj UR*
 Witness 3: *Rajeev A.B*

Shaban



Authorized Signatory
Director
MCET, ANAD
Kerala 695544

Director
Mohandas College of
Engineering & Technology
Anad, Madumangad

Witness 2: *Dr. S. Shaban*
 HOD (CEC)
 Witness 4: *Dr. B. Sivaraman*
 HOD (ME)

The above details from Acutro
 Main Faculty (Ashish Angula, Main EC, Professor) &
 Assisted by - Sampath Dev SR, Manjya P Pal, Anand
 day was schedule and topics covered by Acutro
 Day 1

- * Day one will be creation session, we will provide the basic introduction to all the EV components and Design
- * Automotive Systems
- * Basic introduction of Electrical and electronics systems
- * Building blocks of EV
- * EV Components
- * Electric and Hybrid Vehicle Technology
- * IOT
- * EV and IOT system

ANNEXURE-I

Requirements from MCET

- Space for organizing the classes: Classroom-3 nos of 20 student capacity
- White Board / Black Board
- Students need to bring their laptops.

Financial Terms by MCET to Acutro

| | |
|------------------------|--|
| Number of students | 65 |
| Per student fee | : Rs 3500/- |
| Total amount | : Rs 2,27,500/- |
| Advance amount | : 20% |
| Balance amount payment | : 80% (To be paid within 2 days after the completion of the Classes and issue of the necessary certificates to the students) |

Course Details by Acutro

- 80% practical & 20% theory methodology
- Learning and developing of control system & Battery Pack Design and BMS
- Discussion on Industrial scenario and demand at International level
- Module wise Activities & Demonstrations.

Materials to be provided by Acutro

Acutro will provide kits for training. Group of 6 students will be provided with a DIY kit, Acutro will bring EV for the training and will supply a single DIY EV module to Mohandas College of Engineering and Technology for the students R&D Future works. Acutro will bring EV for the demonstration and discussion. Each batch can work on the EV Model.

Faculty Details from Acutro

Main Faculty : Ashish Augstin, Akhil KS, Praveen P B
Assisted by : Sangeeth Dev SR, Dhanya P Raj, Anand

Day wise schedule and topics covered by Acutro

Day 1

- Day one will be common session we will provide the basic introduction to all the EV components and Design
- Automotive Systems
- Basic mechanical ,Electrical and electronics systems
- Building blocks of EV
- Structural design
- Electric and Hybrid Vehicle Technology
- IOT in EV
- BMS and ECU System

- Latest Technology developments in EV Industry

Day 2

- Hardware introduction
- Electric Vehicle Data Acquisition
- Sensors and Control Systems
- Basic ECU programming with ATMEL 328 IC
- Microcontroller Unit-Programming and Sensors
- Graphical data collection and Serial monitoring

Day 3

- Battery Management System
- Software programming for controlling sensor data and Hardware
- BMS- Programming
- Hardware for BMS
- BMS monitoring system

Day 4

- Cloud data monitoring and trasmission- Programming
- Sensors data into cloud platform
- Live monitoring system implementation
- Motors and Control Unit
- Speed control Hardware

Day 5

- IOT Hardware
- IoT software integration
- IOT sensor data collection
- Programming with blynk cloud
- Programming with things Speak data monitoring

Day 6

- ISIS Software for EV Circuit design
- Circuit fabrication
- Design a EV BMS control unit IN ISIS
- Fabrication of BMS Circuit

Day 7

- Lithium battery monitoring
- Voltage alert system
- Live integration of BMS and IOT system in EV

