

MOU

IGET

Innovations Lab

MOU



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MEMORANDUM OF UNDERSTANDING

FOR

INSTITUTIONAL COLLABORATION

BETWEEN

SKIT-SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT & GRAMOTHAN, JAIPUR

And

IGET LAB-IGET INNOVATION LAB, JAIPUR

MEMORANDUM OF UNDERSTANDING FOR INSTITUTIONAL COLLABORATION

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SKIT-SWAMI KESHVANAND INSTITUTE OF TECHNOLOGY, MANAGEMENT & GRAMOTHAN, JAIPUR

AND

IGET LAB-IGET INNOVATION LAB, JAIPUR

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The Memorandum of understanding (hereinafter referred to as "MoU") entered into on this Friday of 10th May 2023, by and between:

Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur, is an Engineering College, Affiliated to Rajasthan Technical University Kota, having its office at Ramnagaria, Jagatpura, Jaipur, Rajasthan-302017

WHERE AS

AR

IGET Innovation Lab is A partnership firm incorporated at IGET INDIA 34/20, First Floor, Near Power House, Haldighati Marg, Pratap Nagar, Jaipur-302033 that supports students by funding their training and learning engaged in Research and design & supports entrepreneurs by funding for their start-upsby the respective companies in the mame of IGET Labs.

Swami Keshvanand Institute of Technology, Management & Gramothan (Here in after in referred to as "SKIT") inspired from the learnings of Swami Keshvanand, was established in "The year 2000 by Technocrats and Managers Society for Advanced Learning and Gramothan. Today the institute is recognized as one of the centers of academic excellence in Northern India. The Institute is affiliated to Rajasthan Technical University, Kota for offering Postgraduate and Graduate Courses in Engineering and Management. The Institute is accrediated by NAAC with A++ grade and is ranked No.1 Institute by Rajasthan Technical University, Kota for last five consecutive years. The UG Programme of Institute namely Computer science & Engineering, Information Technology, Electronics and Communication Engineering, Electrical Engineering, Mechanical Engineering are continuously accrediated and re-accrediated by National Board of Accreditation since 2009.

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WHEREIN

Both parties agree to collaborate on their respective expertise area of **IGET Labs and SKIT** in research, innovation, design, product development

HENCEFORTH

Both parties agree to nominate Officers/Technical experts/Faculties and students for collaboration.

Both parties shall identify Joint development of Innovative, path breaking product development for skill development & Commercial exploitation. This will:

- ENABLEmutual benefit
- FOSTER industry-institute interface
- SET the benchmark for long-term partnerships on innovative projects

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- STRENGTHEN the innovative capacities of the institute and advance industrydriven research & innovation.
- PROVIDE institution access to industrial environments for applied and problembased research activities.
- SHARE collaborativeresearch, innovations, financial benefits, product sale profit, technology transfer benefits, and Brochures/Flyers, Reading/Course Materials, Programme Information etc., and prominently display the same at prominent places such as Library, Notice Board, Website etc.
- ENHANCING industry-academia interface and aligning training, capacity building, and skill development to meet the industry-specific requirements and for better employability.
- ASSIST each other in the "Training the Trainers" Programme, Entrepreneurship Development Program, Standardization of Courses and Certification Programmes, Testing Protocols, Commercialization of R&D activities, etc.

INVITE each other's experts, faculty members, trainees, and students to narticipate in various capacity-buildingprograms, organized jointly or individually.

• JOINTLY organize interactive sessions, workshops, refresher courses, round

The scope of this MOU is for a period of nine years and is to develop an innovative technology solution jointly by SKIT & IGET Lab.

IGET Lab Scope

SCOPESMOU

TA

GOPALLAL SHARAN

Advices

Pagn. Ho 14236 Expired on

02-07-2024

OF

IGET Lab shall help the institution in the following ways:

- Shall provide free practical training to the selected students of Computer science & Engineering, Information Technology, Electronics and Communication Engineering, Electrical Engineering, and Mechanical Engineeringdisciplines.
- Shall provide opportunities for jobs to the students of SKIT.
- Shall sponsor the research projects financially to the extent decided at the time of project approval.
- Shall deliverexpert lectures at the Institute.
- Shall provide the cost involved for product development (all types of expenses like purchasing of raw materials, consumable items, equipment, work involving outsourcing etc.)
- Shall provide technical and financial support for engineered model into the developed industrial grade product.
 SKIT SCOPE

AT SCOPE

- Shall engage its students for hands-on working industry grade product, training, research development, and placement etc.
- Shall deploy its technical and human resources for prototype development, software development, documentation & IPR protection of the projects developed excluding IPR cost.
- Basic facilities from Mechanical, Electrical, and Electronics labs.
- Requirement of basic tools and devices like lathe machine, drill machine, motor controllers, robotic and microprocessors controllers.

 A team of faculty and students from the Mechanical Engineering, Electrical Engineering, and Electronics & CommunicationDepartments can be engaged for the development of product(s).

- Technical advancement support from SKIT team
- New innovation (patent etc.)and research paper publication rights will remain with SKIT & IGET

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REVIIEW & MONITORING

-Progress of the projects undertaken shall be reviewed on a quarterly basis by the review team Supervisor nominated by IGET Lab, Director, Director(Academics), Principal, Registrar, Dean (Academics), Advisor (Incubation Cell), V.P.-IIC, Coordinator (Incubation Cell).

PROFIT SHARING

The Profit-sharing of IGET Innovation Lab and SKIT will be 70% and 30%.

DURATION OF PRODUCT DEVELOPMENT PROCESS

The time frame for the product development, an "industrial and domestic dishwasher" is decided of six months.

IPR RIGHTS

PR of the technology thus developed shall be governed by SKIT &IGET Lab jointly.

SKIT has approved for MSMEHost Institute to get Government grants/approval where collaboration with IGET Lab shall play an important role.

-Technology thus developed shall be commercially exploited first by IGET Lab& right of refusal shall remain with them, otherwise technology shall be transferred to third parties on mutually agreed terms.

-However, IGET Lab shall pay only royalty fees while other parties shall pay a lump sum plus royalty which shall be shared both by IGET LabandSKIT& development team members.

ARBITRATION

SKIT Principal/IGET LabManaging Director shall be the sole arbitrator for any dispute arising during the technology development phase. The rights have been reserved by both parties to modify this MOU according to product by product.

INITIAL PRODUCT IDENTIFIED

Product development, an industrial and domestic dishwasher.

ATTESTED NOTARY PUBLIC NOTARY OF INDIA GOVT OF INDIA JAIPUR (BG) 7/2023

IN WITNESS WHEREAS WHEREOF, the institutions hereto have offered signatures:

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For: SKIT Swami Keshvanand

For: IGET Innovation Lab, Jaipur

Institute of Technology,

Management & Gramothan, Jaipur

nanoj Gattan N Signature: Signature: Garlani Name: Dr. RAMESH KUMAR PACHAR Name: Manoj Kungr Date: Date:-Seal: A spal: CHOA ALPUR (RAJ) Witness: 1000 30 Signature Signature Dhanomia Name: Head - Incubation Cell Ola Designation: gnation: The mine and Signature: louph Name: Subhryeet- Couple. Designation: NP incubation. Signature: Moul Singh Name: Designation: (114) account thee 7/2023 5

List of Activities

S.no.	Name of Activity	Date	Duration	
1. Worksh	op on Electric Vehicles	25-30 April 2024	One week	

Report on the Introduction to E-Vehicles (2W) Workshop at SKIT College organized by IGET Innovations Lab

Overview:

- Event: Introduction to E-Vehicles (2W).
- Date: 25th April to 30th April 2024
- Venue: Swami Keshvanand Institute of Technology, Management Jaipur.
- Organized by: IGET Innovations Lab, Sitapura Jaipur.
- Target Audience: Mechanical Engineering Students (3rd Semester)
- Duration: 5 days
- <u>Objectives:</u>

The primary objective of the workshop was to introduce students to the foundational principles of E-Vehicles with an emphasis on extensive practical training with a diverse range of E-Vehicle parts.

By providing immersive, hands-on experiences, the workshop aimed to deepen student's understanding of essential concepts and ignite a passionate interest in these rapidly advancing fields.

Additionally, it endeavored to equip students with the skills and knowledge necessary to pursue further studies and careers in E-Vehicles.

Workshop Overview: E-Vehicle (2W)

- 1. Introduction to Core Concepts:
 - Understanding Fundamentals: This workshop provided a comprehensive overview of the basic principles of E-Vehicles, including key components and integration techniques.

This foundational knowledge set the stage

for deeper exploration and practical application.

• Conceptual Clarity: We broke down complex topics into digestible segments, ensuring that students grasped essential theories and terminologies relevant to these fields. Clear explanations and simplified examples helped them make advanced concepts easier to understand.

2. <u>Hands-On Experience:</u>

- Practical Application: We provided students a platform to work directly with E-Vehicles. They test components, design & assembled parts, and solve real problems, which helped them understand the theory better.
- Interactive Learning: We also held interactive sessions where students could experiment with hardware and software. They applied theoretical concepts in real life scenarios, which helped them to learn better and gain confidence in using technology.

3. <u>Skill Development:</u>

- Technical Skills: The workshop equipped students with practical skills in building and designing E-Vehicles sub-systems, working with sensors and actuators, .These skills were essential for their future studies and careers in technology.
- Problem-Solving Abilities: Enhanced student's problem-solving and critical-thinking skills by challenging them with hands-on projects and real-world scenarios that required innovative solutions. This approach fostered creativity and analytical thinking.
- 4. Fostering Interest and Engagement:
 - Stimulating Curiosity: We also helped students to ignite and nurture an interest in E-Vehicles by showcasing the exciting possibilities and applications of these technologies across various industries. Highlighted real-world examples to help students understand the relevance and potential impact of their learning.
 - Career Awareness: We provided insights into career paths and

opportunities in E-Vehicles inspiring students to explore further education and career prospects in these dynamic fields.

- 5. Encouraging Collaboration and Teamwork:
 - Group Activities: We promoted teamwork and collaboration through group projects and collaborative problem-solving tasks, which helped students, develop interpersonal skills and learn from their peers.

They together worked in teams simulated real-world engineering environments.

- 6. Evaluating Understanding:
- Assessments: We conducted assessments and evaluations to measure student's understanding and the skills gained during the workshop.

This helped them identify areas for improvement and ensured that learning objectives were met.

Instructors:

Our Instructors are well trained and have a deepen knowledge with Day-to-Day changes happening in E-Vehicle technology.

- Dr. Manoj Gatatni
- > Mr. Saurabh Dev
- ➢ Mr. Gordhan Gurjar

CEO, TechnoS Centre of Excellence E-Vehicle Trainer and Designer Hardware and Hands-on Expert

Workshop Details:

1

2

Day wise detailed view of topics covered during the workshop.

Practical Done by

How to check a

by reading its BAR

Physical

&

Students

Battery

CODE

Sr.No. Date Theoretical Topic Covered Introduction of EV market, need, 25-04/2024 Basic requirements, Pros and Cons. Various Types of EV, Various Components of EV 26/04/2024 Various Types of Battery, How to make a battery pack, How to Test/Check a Battery or Battery Pack, Various Parts of Battery Pack (Batteries, BMS (BPB+BMB), Wires, Connectors), Various Techniques to make & Design a Battery Pack.

NUMBERS 3 27/04/2024 Various Types of Motors, Basic of Motor Testing of working, How to choose a Motor for EV, Motor /Cells **Batteries** Controller Basic, Hall Sensor- its Testing, using various Various points of uses in EV, Bake sensor- how methods. these works. 4 Testing of Motor, 28/04/2024 Various Types of Throttles, How to choose a throttle, Government Norms on Throttle, Various various Sensors Norms/Regulations on EV-in India, World Wide, used in E-Cycle How to make your own E-Bike 5 Practical – Hands-29/04/2024 Assembly of Battery Pack and Connection of BMS with Battery Pack on 6 30/04/2024 Assembly of an E-Bike Practical - Handson Exam-for Validation

During this duration students comes to familiar with following High-End-Equipments of industrial Standard:

- 1) Hioki -- Digital Multimeter
- 2) Hioki -- Battery Hi Tester

- 3) Hioki -- Battery Capacity Tester
- 4) Hioki -- Battery Impedance Tester
- 5) Hioki -- Power Analyzer (4Channel)

Materials Provided:

Official PPTs were provided to students for better guidance throughout the workshop.

Outcomes:

- Enhanced student understanding with E-Vehicles.
- Achieved successful completion of hands-on projects (E-Cycle) by student groups, resulting in a functional E-Cycle.
- Stimulated increased interest in pursuing advanced courses and careers in E-Vehicles, as evidenced by positive feedback and heightened engagement throughout the workshop.

Feedback:

- The workshop garnered highly positive feedback from the students, who appreciated the balance of theoretical knowledge and practical hands-on experience.
- The collaboration between TCoE and SKIT was highly praised, numerous students expressing a strong interest in having more workshops like this in the future.

Conclusion:

The 5-day workshop on "Introduction to E-Vehicles (2W)" at SKIT College was a resounding success, exceeding expectations in both educational impact and student engagement. By offering a blend of theoretical knowledge and practical application, the workshop provided students with a comprehensive understanding of E-Vehicles.

Participants were introduced to fundamental concepts and given the opportunity to apply these principles through hands-on projects and interactive sessions.

The collaboration between TCoE and SKIT College proved to be highly effective, fostering a learning environment that encouraged curiosity, creativity, and innovation.

The expertise of instructors was instrumental in delivering a rich and engaging learning experience. Their guidance helped students navigate complex topics and develop practical skills that are essential in the field of E-Vehicles.

The success of the workshop is evident in the enthusiasm and feedback from the students. Many participants expressed a newfound passion for E-Vehicles, indicating a strong interest in pursuing further education and careers in these areas. The skills and knowledge gained during the workshop have equipped students with a solid foundation, preparing them for future academic and professional endeavors. Moreover, the event highlighted the potential for future collaborations between TCoE and SKIT College. The positive outcomes of this workshop have set the stage for additional initiatives, workshops, and projects that can continue to enhance the educational experience of students.

In summary, the workshop not only enhanced the technical competencies of the students but also sparked a keen interest in the field, paving the way for future innovations and projects. The success of this event underscores the importance of practical, hands-on learning experiences in inspiring the next generation of engineers and technologists.

Bill of Material Consumed:

Following items are consumed during the E-Vehicle Workshop for Hands-on-Practice by students:

Sr.No	Item Name	Qt.	Price	Amount
1	Li-ion Battery	8 Pcs	100/Pcs	800
2	Nickle Strip (PURE NICLE)	300 Grams	6000/KG	1800
3	Battery Stacks	3 Set	1500/Set	4500
4	Soldering Wire -18SWG	300Grams	1200/Kg	360
5	Silicon Wire - 18AWG	5 Mtr.	65/Mtr	325
6	Automobile Wire Connectors	6	50	300
Total SUM of Consumable Items				

Photos and Glimpses of the Event:















