



Humanitarian Technology Board

IEEE SIGHT

Special Interest Group on Humanitarian Technology

# RURAL DEVELOPMENT PROJECTS IMPLEMENTED IN ADOPTED VILLAGES



Sri **SAIRAM** ENGINEERING COLLEGE  
An Autonomous Institution  
West Tambaram, Chennai - 44  
[www.sairam.edu.in](http://www.sairam.edu.in)





Humanitarian Technology Board

IEEE SIGHT

Special Interest Group on Humanitarian Technology

# RURAL SOLAR ELECTRIFICATION STATION (22-HAC-103)

*Providing Alternative Renewable Electricity*

received project fund from IEEE HAC/SIGHT under  
Local Pressing Community Needs.

**Project Fund: 4000 USD (Rs 3,29,150)**

Implemented Organization Name:



**SRI SAI RAM ENGINEERING COLLEGE**

*An Autonomous Institution | Affiliated to Anna University & Approved by AICTE, New Delhi  
Accredited by NBA and NAAC "A+" | An ISO 9001:2015 Certified and MHRD NIRF ranked institution  
Sai Leo Nagar, West Tambaram, Chennai - 600 044. [www.sairam.edu.in](http://www.sairam.edu.in)*

Funded Organization Name:  
**IEEE HAC/SIGHT**

Project Completed at:  
**IEEE project completed at Nallur High School**







## DESCRIPTION

Rural Solar Electrification Station is a humanitarian project undertaken by Sri Sai Ram Engineering College in association with IEEE HAC/SIGHT with a funding of 4000 USD. The project focuses on providing electricity to the neighbouring areas in case of natural calamities or in the situation of shortage of electricity.

## INAUGURATION

Inaugural Meeting for our Rural Solar Electrification Station project, which was funded by IEEE HAC/SIGHT was held on 08-02-2023 at the Government High School in Nallur, Poonthandalam village.

*The event was attended by our Principal Dr. Porkumaran, our Trustee Mr. Balu, our HOD Dr. T Sheela, Village panchayat president Mr. Gnana Prakash and school Head Master Mr. Stephen*

## TECHNICAL SPECIFICATIONS

### SOLAR PANELS:

- Renewsys 335Wp Multi-crystalline- 8 Numbers - 2.4KWp
- Linear Performance Warranty of 25 Years
- Renewsys has "Better Tolerance to Micro Crack as higher number of bus bar makes the PV modules less prone to loss in efficiency due to micro-cracks."

### SOLAR INVERTERS:

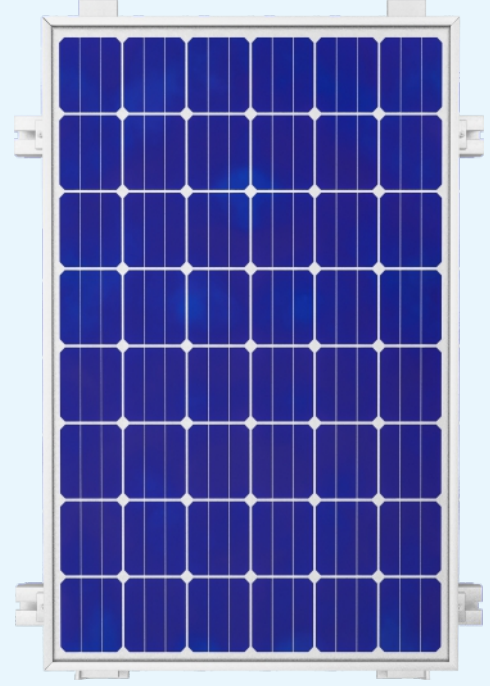
- UTL Inverters have the best in-class Technology for Solar Production
- UTL gives 2 Years Warranty for the Solar Inverters
- This Solar Project has been Designed with 3.5 KVA Solar Inverter

### SOLAR BATTERY:

- SVS Energy Designs Solar Battery systems to maximize Power Generation while lowering cost of Energy
- SVS Energy gives 5 Years warranty for the Solar C10 type Batteries from Axcel Ryzen
- Four Nos of 160Ah Solar Batteries are connected to the Solar Inverter in Series connection providing 48Vdc

### SAFETY SYSTEMS:

- Earthing System for the Solar Plant gives the protection to the Entire System
- High quality Tin annealed DC cables of 4 Sqmm has been used for the Solar Off-Grid System
- 3.Iron Meshed grills were designed and placed surrounding the batteries and inverters.



அரசுப் பள்ளிக்கு 12 கிலோ வாட் சூரிய மின்தகடு:  
சாய்ராம் பொறியியல் கல்லூரி வழங்கியது



ஸ்ரீசாய்ராம் பொறியியல் கல்லூரி சாபில் பூந்நோட்டம் ஊராட்சி புது நல்லூர் அரசு உயர்நிலைப் பள்ளியில் ரூ.3.25 லட்சத்தில் அமைக்கப்பட்ட சூரிய ஒளி மின் வசதி திட்டத்தை தொடங்கி வைத்த ஸ்ரீ சாய்ராம் கல்விக்க குழுமத் தலைவர் சாய்பிரகாஷ் லியோ முத்து, உடன் முதல்வர் பொற்குமார், பேராசிரியை ஷீலா, திட்ட ஒருங்கிணைப்பாளர் சோமபிரதீபா உள்ளிட்டோர்.

தாம்பரம், ஜூன் 23: தாம்பரம் அரசு உயர்நிலைப் பள்ளிக்கு 12 கிலோ வாட் உற்பத்தித் திறன் கொண்ட சூரிய மின்தகடுகளை சாய்ராம் பொறியியல் கல்லூரி வழங்கியுள்ளது.

சென்னை மேற்கு தாம்பரம் ஸ்ரீ சாய்ராம் பொறியியல் கல்லூரி, சமூகப் பொறுப்பணர்வு மேம்பாட்டு திட்டத்தின் கீழ் அரசு உயர்நிலைப் பள்ளியில் ரூ. 3.25 லட்சம் செலவில் சூரிய மின்தகடு அமைக்கப்பட்டுள்ளது. இதன் செயல்பாட்டைத் தொடக்கி வைக்கும் நிகழ்ச்சி வெள்ளிக்கிழமை நடைபெற்றது.

இதில் கலந்து கொண்ட ஸ்ரீசாய்ராம் கல்விக்க குழுமத் தலைவர் சாய்பிரகாஷ் லியோ முத்து, சூரிய மின்தகட்டின் இயக்கத்தை தொடங்கி வைத்து பேசியதாவது:

பூந்நோட்டம் ஊராட்சி புது நல்லூரில் அமைந்துள்ள அரசு உயர்நிலைப் பள்ளியில் பொது மின்வசதி இல்லை என்பதால், பள்ளியின் மேற்கூரையில் 12 கிலோ வாட் உற்பத்தித்திறன் கொண்ட சூரிய மின்சார உற்பத்திக்கான சூரிய மின்தகடுமற்றும் சேமிப்புத் திறன் கொண்ட பேட்டரி கள் உள்ளிட்டவை அமைத்துக் கொடுக்கப்பட்டுள்ளது. என்றார் அவர். நிகழ்ச்சியில் பள்ளி தலைமை ஆசிரியர் ஸ்ரீமதி, சாய்ராம் பொறியியல் கல்லூரி முதல்வர் பொற்குமார் உள்ளிட்ட பலர் கலந்து கொண்டனர்.





Humanitarian Technology Board

IEEE SIGHT

Special Interest Group on Humanitarian Technology



# RURAL DROUGHT IMPROVEMENT & SUSTAINABLE WATER MANAGEMENT PROJECT **HYGIENE HYDRO**

at Government Hr. Sec. School, Nallur, Poonthandalam Village

Project Done by



**Sairam ENGINEERING COLLEGE**

*An Autonomous Institution | Affiliated to Anna University & Approved by AICTE, New Delhi  
Accredited by NBA and NAAC "A+" | An ISO 9001:2015 Certified and MHRD NIRF ranked institution  
Sai Leo Nagar, West Tambaram, Chennai - 600 044. [www.sairam.edu.in](http://www.sairam.edu.in)*



## Hygiene Hydro Project Transforms Lives in Poonthandalam provided by Sairam Group

Chennai, June 26: Poonthandalam witnessed a momentous occasion as the Hygiene Hydro Project was officially launched, heralding a new era of clean and pure drinking water for the villagers. Led by the visionary CEO, Dr. Sai Prakash Leo Muthu, the project promises to bring a sustainable solution to the water crisis that has plagued the region for far too long.

Under the watchful guidance of CEO Dr. Sai Prakash Leo Muthu, the water plant was inaugurated with great fanfare. Villagers eagerly filled their belongings with the clean and safe water, a symbol of hope and rejuvenation. The event commenced with the resonating Tamil Thai Valthu, evoking a sense of pride and unity among all present.

Our dynamic CEO Dr.

Sai Prakash Leo Muthu, Principal Dr. K. Parkumaran, CIO Mr. Naresh, Dr. S. K. Uma Maheswari, professor and Captain UBA, Village president Mr. Gnana Prakash, Village union counselor Ms. Malarvizhi Murugan and Ward members have occupied the dais.

Dr. S. K. Uma Maheswari, the esteemed UBA Coordinator & Captain, extended a warm welcome to the distinguished gathering. The charismatic CEO felicitated the chief guest, showcasing his appreciation for their valuable presence.

CEO Dr. Sai Prakash Leo Muthu took center stage, delivering a presidential address that captivated the audience. He emphasized the critical importance of clean water and emphasized the alignment of the Hygiene Hydro Project with the



Sustainable Development Goals (SDGs). Through his passionate speech, he instilled a deep understanding of the long-term benefits that clean water brings to the community.

The project leads, Mr. Niranjan Kumar and Mr. Karthick Rham, shared their expertise and insights through a special address. Their dedication and tireless efforts were recognized as they enlightened the au-

dience about the intricate details of the project and its profound impact on the lives of the villagers.

Ms. Buvana, Co-lead of the project team, provided valuable feedback, shedding light on the positive outcomes and challenges encountered during the project's implementation. Her comprehensive assessment further highlighted the success and potential of the Hygiene Hydro Project.

The event culminated with a heartfelt vote of thanks delivered by project team executor Mr. Ram Kumar. He expressed gratitude to all participants, stakeholders, and the entire community for their unwavering support throughout this transformative journey. The joyful celebration that followed echoed the collective triumph of securing pure drinking water for the villagers, ensuring healthier lives for generations to come.

The Hygiene Hydro Project in Poonthandalam stands as a shining example of visionary leadership, community collaboration, and the unwavering determination to address vital needs. As the villagers rejoice in this newfound resource, they can look forward to a brighter future, brimming with good health and prosperity.

### RO Plant Expenses

S No	Description	Amount
1	<b>Total Expenses for RO plant (Only)</b> ( which includes CGST + SGST = Rs. 57,600)	<b>Rs. 3,77,600</b>
2	<b>Total Fund Received from IEEE - SIGHT HQ ( 3500 USD )</b>	<b>Rs. 2,86,852</b>
3	<b>Amount to request to be sent to management to settle RO vendor (1) – (2)</b>	<b>Rs. 90,748</b>

### Building Expenses

S No	Description	Amount
1	<b>Planned expenses for Building, plumbing &amp; EB work</b> ( As per rough mutual signed agreement by PI & Contractor)	<b>Rs.1,75,000</b>
2	<b>Approximate max additional expenses for building work Due to small changes in building &amp; EB</b>	<b>Rs. 20,000</b>
3	<b>Total expenses for Building (Only)</b> (1)+(2)	<b>Rs. 1,95,000</b>
4	<b>Amount sanctioned by the management order Dated 2/12/22 - Ref No. 19 SEC/TBM/IMPLEMENT-IEEE PR I 2022</b> (3) – (4)	<b>Rs. 1,57,000</b>
5	<b>Amount to request to be sent to management to settle building contractor</b>	<b>Rs.38,000</b>

**Total Cost of Project ( Rs. 3,77,600 + Rs. 1,95,000 )**

**Rs. 5,72,600**



# சாய்ராம் பொறியியல் கல்லூரி

(An Autonomous Institution)

மேற்கு தாம்பரம், சென்னை - 44. [www.sairam.edu.in](http://www.sairam.edu.in)



Humanitarian Technology  
Board

IEEE SIGHT

Special Interest Group on  
Humanitarian Technology

இணைந்து கட்டி நிறுவப்பட்ட

## கிராமப்புற வறட்சி மேம்பாடு மற்றும் நிலையான நீர் மேலாண்மை திட்டம் "ஹைஜின் ஹைட்ரோ" வின் திறப்பு விழா

23.06.2023, வெள்ளிக்கிழமை | நல்லூர், பூந்தண்டலம்

தலைமை மற்றும் திட்ட துவக்கம்

### முனைவர். சாய்பிரகாஷ் லியோமுத்து

தலைவர், சாய்ராம் கல்விக் குழுமம்

முனைவர். க. பொற்குமரன்

முதல்வர், சாய்ராம் பொறியியல் கல்லூரி  
சேர்மன், IEEE மெட்ராஸ் பிரிவு

முனைவர். எஸ்.கே. உமா மகேஷ்வரன்

ஒருங்கிணைப்பாளர் UBA,  
திட்ட பொறுப்பாளர்

திரு. மு. ஞான பிரகாஷ்

ஊராட்சி மன்றத் தலைவர், பூந்தண்டலம்

திருமதி. மலர்விழி முருகன்

ஒன்றிய கவுன்சிலர்

சாய்ராம் கல்விக் குழும பிரதிநிதிகள்  
மற்றும் பூந்தண்டலம் ஊர்மக்கள்

Sairam  
INSTITUTIONS







Humanitarian Technology  
Board

IEEE SIGHT

Special Interest Group on  
Humanitarian Technology

# RURAL

## TECH-DRIVEN CLASSROOM AND IMPROVED LEARNING METHODOLOGY PROJECT

**INVENTIVE ERUDITION**

**(23-HTB-036)**

**Project Fund: 6600 USD (Rs 5,45,000)**

### OVERVIEW:

#### 23-HTB-036 A RURAL EDU-TECH CLASSROOM UPGRADATION.

The Inventive Erudition project was initiated from a desire to bridge the educational gap in a small government school located in Poonthandalam gram panchayat, Puducherry, Tamil Nadu, India. We envisioned a future where rural students could access quality education through an engaging and interactive learning environment.

Our team, composed of 10 students from diverse engineering disciplines at Sri Sairam Engineering College led by Dr.S.K.Umamaheswaran and Professor D.Prabhu, secured funding of 6557.00USD through the Institute of Electrical and Electronics Engineers (IEEE) Sight program. This reflects the project's potential and our team's ability to present a compelling solution.

To achieve this goal, we established a smart classroom equipped with cutting-edge technology. An interactive board and a PC system were installed to facilitate dynamic presentations, collaboration, and access to educational resources. We supplemented digital textbooks with a collection of digital and Augmented Reality (AR) integrated study materials,

fostering a more immersive learning experience for the students. Recognizing the importance of environmental responsibility, we installed solar panels to ensure a clean and reliable power source for the smart classroom. Additionally, the classroom was furnished with necessary cupboards to enhance organization and optimize space utilization.

### REPORT:

This report details the Inventive Erudition project, which aimed to create a smart classroom in a rural Indian school. The project outfitted the classroom with interactive technology, AR learning materials, and sustainable power. Funded by IEEE Sight, the project is awaiting full implementation due to unforeseen challenges. The report explores the project's goals, components, and next steps for overcoming implementation hurdles.

### SURVEY:

Our student team conducted a comprehensive survey to assess the impact and effectiveness of the proposed project on students and teachers. Surveyors were asked to evaluate the existing classrooms in terms of infrastructure, resources and learning environment including the factors such as classroom size, availability of materials and overall ambiance, outdated teaching methods, lack of resources and difficulties in accessing

digital content. Outcomes of the survey report encouraged us to propose this in the above stated location.

**Surveyors conducted survey to identify the basic needs.**

#### **LOCAL COMMUNITY NEED:**

Puducheri is a small village with an area of 120.36 hectares and a population of 560 people. This village comes under Poonthandalam gram panchayat, Kancheepuram district, Tamil Nadu. This village consists of a panchayat union primary school with 48 students and two teachers. While visiting the village, we observed that the school lacks in the admission of the locals due to the school's poor infrastructure. Currently, the government has made a drastic change in education and its way of approaching the students so it reaches them way easier and in an entertaining manner, increasing their affinity towards education. In order to transform education into a digital process, they created individual enrollment IDs in the government education app, with tests generated for students in the app itself. The main problem that arises here is that the panchayat union public school in Puducherry doesn't have any computers or other modern equipment to aid the students. As a reason, locals don't prefer this school and go for a well equipped school. By implementing our project, this school would increase its digital infrastructure so that the students could make proper use

of digitized education. By increasing the infrastructure of the school in rural areas, we will step forward towards Indian sovereignty.

#### **TARGET:**

Goal 4 : Quality Education

Goal 7 : Affordable and Clean Energy

Goal 11: Sustainable Cities and Communities

#### **PROJECT EXECUTION:**

A dynamic team of educators, students, engineers and consultants converged to envision and design a transformative solution aimed to revolutionize digital learning at Panchayat Union Primary School. Through brainstorming sessions, survey and planning, we as a team crafted a comprehensive proposal, outlining the integration of cutting-edge educational technology and through sustainable energy solutions. Our unwavering commitment to excellence and innovation we prepared a comprehensive budget plan and a project assessment matrix. With great anticipation, we presented our proposal to the IEEE HTB/SIGHT and clearly addressed every query posed by the review committee regarding the project. We were overjoyed to receive a funding allocation of \$6557.00 USD, affirming our collective dedication to empower the next generation learners and benefiting the student community nearby the school and to promote the growth of the local community.



## GLIMPSE OF PROJECT EXECUTION



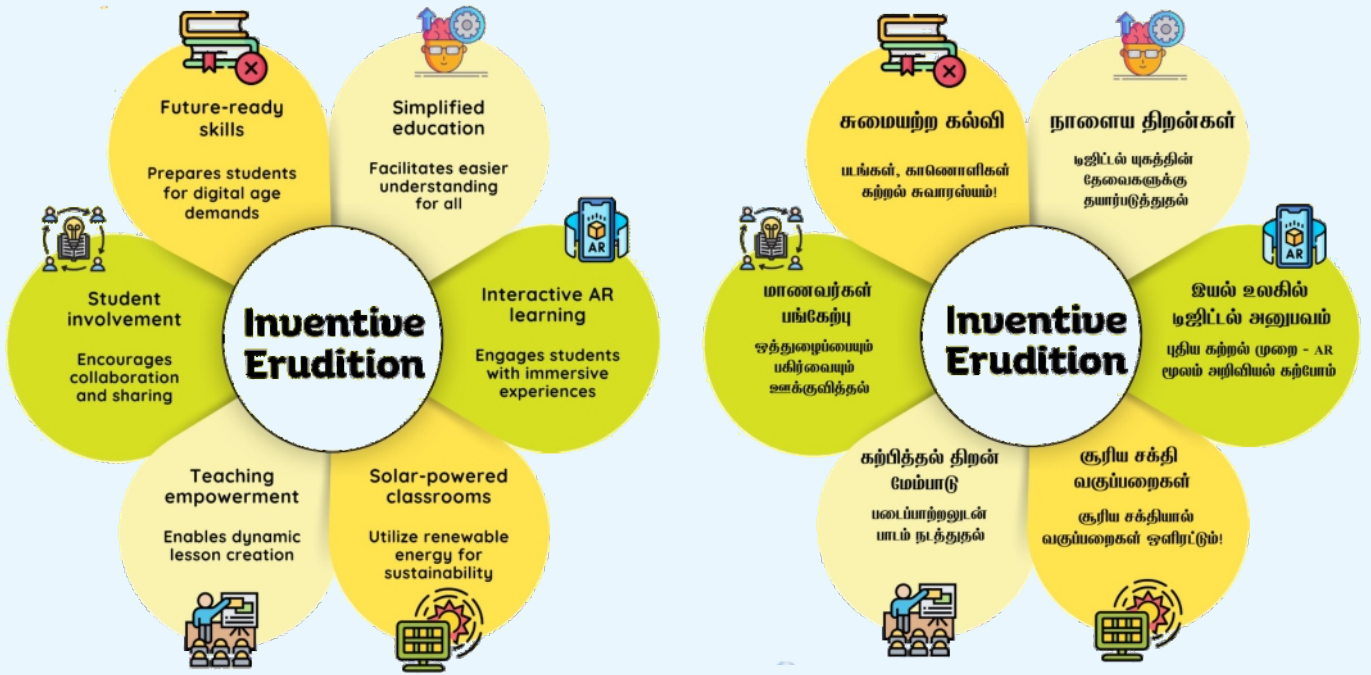
## AFTER IMPLEMENTATION



Dr. S.K.Umamaheswaran (Project advisor) and Mr.D.Prabhu (Project investigator) visited the school after the implementation of the project. Smile in the face of each kid was our encouragement which led us from "No where to somewhere....."



## CORE OUTCOME OF INVENTIVE ERUDITION



## INVITING VILLAGE PEOPLE FOR INAUGURATION

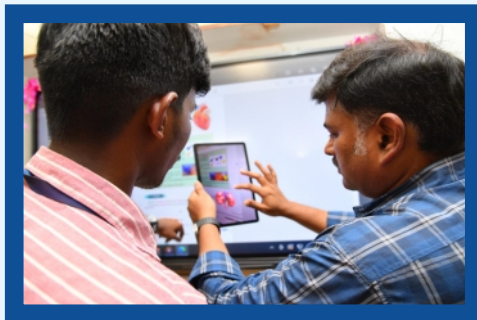


## IMPLEMENTATION COMMITTEE



Mr. Prabhu.D	Principal Investigator
Srinivas S	Project Lead
Desigan M	Additional Project Lead
Hema Krishnan A	Additional Project Lead
Subha Lakshmi S	Project Executor
Roshni J	Project Executor
Prabakaran G S	Finance Lead
Lokesh V	Technical Lead
Soumya M	Technical Lead
Meganathan D	Machinery Lead
Srivathsan V	Surveyor

## INAUGURATION





**Sairam**  
INSTITUTIONS



**சாய்ராம் பொறியியல் கல்லூரி**  
(An Autonomous Institution)

மேற்கு தாம்பரம், சென்னை - 44. [www.sairam.edu.in](http://www.sairam.edu.in)



Humanitarian Technology  
Board

IEEE SIGHT

Special Interest Group on  
Humanitarian Technology

நிறுவனங்களால் நிறுவப்பட்ட  
**தொழில்நுட்பம் மேம்படுத்தப்பட்ட பள்ளி வகுப்பறை**  
**மற்றும் கற்றல் முறை திட்டம்**  
**"இன்வென்டிவ் எருடிஷன்" னின் திறப்பு விழா**

02.05.2024, வியாழக்கிழமை

ஊராட்சி ஒன்றிய தொடக்கப்பள்ளி, புதுச்சேரி, பூந்தண்டலம்

தலைமை மற்றும் திட்ட துவக்கம்  
**முனைவர். சாய்பிரகாஷ் லியோமுத்து**  
தலைவர், சாய்ராம் கல்விக் குழுமம்

**முனைவர். க. பொற்குமரன்**  
முதல்வர், சாய்ராம் பொறியியல் கல்லூரி  
சேர்மன், IEEE மெட்ராஸ் பிரிவு

**முனைவர். எஸ்.கே. உமா மகேஷ்வரன்**  
ஒருங்கிணைப்பாளர்  
- NSS & IEEE SIGHT

**திரு.தே. பிரபு**  
திட்ட முதன்மை பொறுப்பாளர்

**திருமதி. மலர்விழி முருகன்**  
ஒன்றிய கவுன்சிலர்

**திரு. மு. ஞான பிரகாஷ்**  
ஊராட்சி மன்றத் தலைவர், பூந்தண்டலம்

சாய்ராம் கல்விக் குழும பிரதிநிதிகள்  
மற்றும் பூந்தண்டலம் ஊர்மக்கள்





## INAUGURATION NOTE

The panchayat union public school in Puducherry, near Naduveerapattu, witnessed the grand inauguration of our innovative rural education project on [02.05.2024]. This project, a testament to the collaborative spirit, is funded by [HTB IEEE SIGHT].

The inauguration ceremony was a resounding success, graced by the esteemed presence of the CEO and other high-level representatives. Local dignitaries, members of the public, students, teachers, and our entire team also joined the celebration.

To commemorate this momentous occasion and symbolize the project's growth, we all came together to plant trees, signifying not only the project's potential but also our commitment to environmental sustainability.



## TECHNOLOGY ENABLED CLASSROOM IN PANCHAYAT UNION ELEMENTARY SCHOOL, PUDUCHERRY VILLAGE, POONTHANDALAM



## THANK YOU NOTE

The successful completion of the INVENTIVE ERUDITION project is a testament to the collaborative efforts and unwavering commitment of a diverse group of individuals and organizations. We express our deepest gratitude to each contributor and stakeholder who has played a pivotal role in making this transformative initiative a reality.

First and foremost, we would like to thank IEEE SIGHT/HTB for providing us with the funding for this project. Also thank IEEE Madras Section, IEEE Madras SIGHT Affinity Group for disbursing the funds provided by IEEE SIGHT to us and for the enormous support and faith you had on us.

Next, we extend our gratitude to the officials of Sairam Institutions. We thank, Dr. Sai Prakash Leo Muthu, our esteemed CEO and Chairman, Mr. Balu, Trustee, Mr. Naresh Raj, CIO, Dr. K.Porkumaran, Principal, Sri Sairam Engineering College, and Chairman, IEEE - Madras Section for their constant support and motivation.

The impact of the Edutech setup in Panchayat Union Primary School, Poonthandalam transcends mere infrastructure. It has become a catalyst for transformative change, fostering a culture of learning, curiosity, and growth among the students and residents. Through access to digital resources, interactive learning tools, and personalized educational experiences, we can witness remarkable improvements in academic performance, engagement, and enthusiasm for learning.

To the local community of Poonthandalam, including the Panchayat Head, President, Vice President, Headmaster of the school and other higher officials of the village thank you for embracing and supporting INVENTIVE ERUDITION. Your active participation and feedback have been crucial in tailoring the project to meet the specific needs of the community.

## PROJECT EXPENSES

<b>Project Expenses</b>		<b>EXPENSES PAID with Tech4Good Funds</b>
<b>PC COMPONENTS</b>		<b>52180.44</b>
<b>GRAPHICS TABLET</b>		<b>14237.29</b>
<b>SPEAKER</b>		<b>2258.58</b>
<b>INTERACTIVE SMART BOARD (VIEW SONIC IFP6553)</b>		<b>209153.76</b>
<b>WIFI SETUP</b>		<b>18215.18</b>
<b>SOLAR POWER GENERATION &amp; STORAGE SYSTEM</b>		<b>232858.35</b>
<b>AUGUMENTED REALITY MODULE</b>		<b>12438.74</b>
<b>Funding Received from IEEE Tech4Good Projects</b>	<b>541342.3</b>	<b>541342.34</b>
<b>Funding Received from other sources</b>	<b>0</b>	<b>0</b>
<b>Total Project Income</b>	<b>541342.3</b>	<b>541342.34</b>



Sri  
**SAIRAM**  
ENGINEERING COLLEGE  
*An Autonomous Institution*

Affiliated to Anna University & Approved by AICTE, New Delhi

Accredited by NBA and NAAC "A+"  
BIS/EOMS ISO 21001:2018 & BVQI 9001 : 2015 Certified  
and NIRF ranked institution

Campus: Sai Leo Nagar, West Tambaram,  
Chennai - 600 044. [www.sairam.edu.in](http://www.sairam.edu.in)

Administrative Office: "Sai Bhavan",  
31B, Madley Road, T.Nagar,  
Chennai - 17. Ph: 044-4226 7777.

[www.sairamgroup.in](http://www.sairamgroup.in)



**Sairam**  
**RAISE**  
Inspiring  
PEOPLE

**Sairam**  
**EOMS**  
Improving  
PROCESS

**Sairam**  
**SDG ACTION**  
PROGRAM  
Instilling  
PURPOSE