



# SRI RAMAKRISHNA ENGINEERING COLLEGE

[Education] service : SNR Sons Charitable Trust

[Autonomous Institution, Accredited by NAAC with 'A' Grade]

[Approved by AICTE and Permanently Affiliated to Anna University, Chennai]

[ISO 9001 : 2015 Certified and All Eligible Programmes Accredited by NBA]

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**Batch No: B8**

## **20ME282 – MINI PROJECT-II REVIEW - 1**

### **“FABRICATION OF SOLAR PANEL USING E-WASTE”**

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# INTRODUCTION

- Electronic waste (e-waste) is a growing global problem as we dispose of outdated or malfunctioning electronic devices. However, within this waste lie valuable components that can be salvaged and repurposed for sustainable projects. One such project is the creation of a solar panel using e-waste components.
- In an era of increasing interest in renewable energy sources, the idea of turning obsolete CDs and DVDs into functional solar panels offers a unique blend of sustainability, recycling, and hands-on learning.



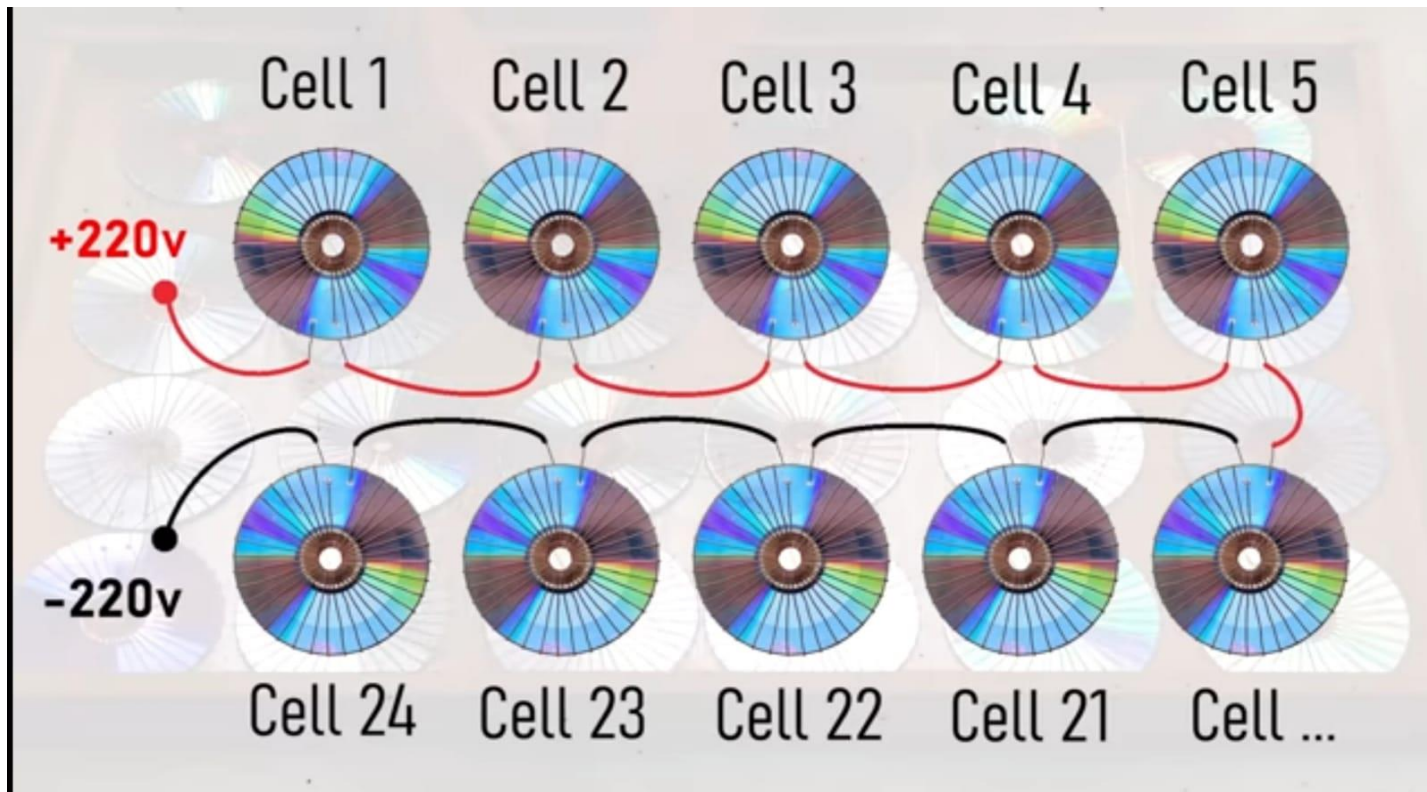
# OBJECTIVE

- **Environmental Awareness:** Raise awareness about the environmental impact of e-waste and the importance of responsible recycling
- **Resource Conservation:** Demonstrate how discarded electronic components can be reused to reduce the need for new materials and conserve resources.
- **Renewable Energy Education:** Provide an educational opportunity to learn about solar energy, photovoltaic technology, and sustainable practices.
- **Low-Cost Energy Solutions:** Offer an affordable alternative for individuals or communities with limited access to commercial solar panels.
- **Energy Independence:** Promote the idea of small-scale energy generation, reducing dependence on fossil fuels.

# MATERIALS REQUIRED

1. Old CDs or DVDs: You can use any unused or scratched discs for this project.
2. Solar Cells: Small solar cells are essential. You can buy them online or repurpose them from solar garden lights.
3. Soldering Iron and Solder: To connect the solar cells. Base Material: You'll need a sturdy base for your panel.
4. Glue: To attach the CDs/DVDs to the base.
5. Wires: For connecting the solar cells together and to an output.
6. Diode: To prevent reverse current flow.
7. Multimeter: To measure voltage and current.

# CONNECTION IN SERIES



# METHODOLOGY

1. **Collect E-Waste:** Disassemble discarded electronic devices and salvage components like capacitors, diodes, and batteries. Extract any salvageable solar cells from old solar panels.
2. **Prepare the Base:** Cut your base material to the desired size for your solar panel. Ensure the base is clean and flat.
3. **Mount the Solar Cells:** Arrange the salvaged or purchased solar cells on the base. Connect them in series or parallel to achieve the desired voltage and current output.
4. **Connect Components:** Use soldering iron and solder to connect the various e-waste components (diodes, capacitors, etc.) to the solar cells. Ensure proper wiring and connections.



5. **Wiring and Testing:** Connect wires to the solar cell array and route them to an output terminal for power usage or storage. Use a multimeter to test the voltage and current output of your DIY solar panel when exposed to sunlight.
6. **Storage (Battery):** If you're storing excess energy in a battery, connect the battery holder to your solar panel and ensure proper charging and discharging.
7. **Mount and Deploy:** Mount your DIY e-waste solar panel in a location with direct sunlight. Use the generated electricity for small-scale applications, such as charging devices or powering LED lights.



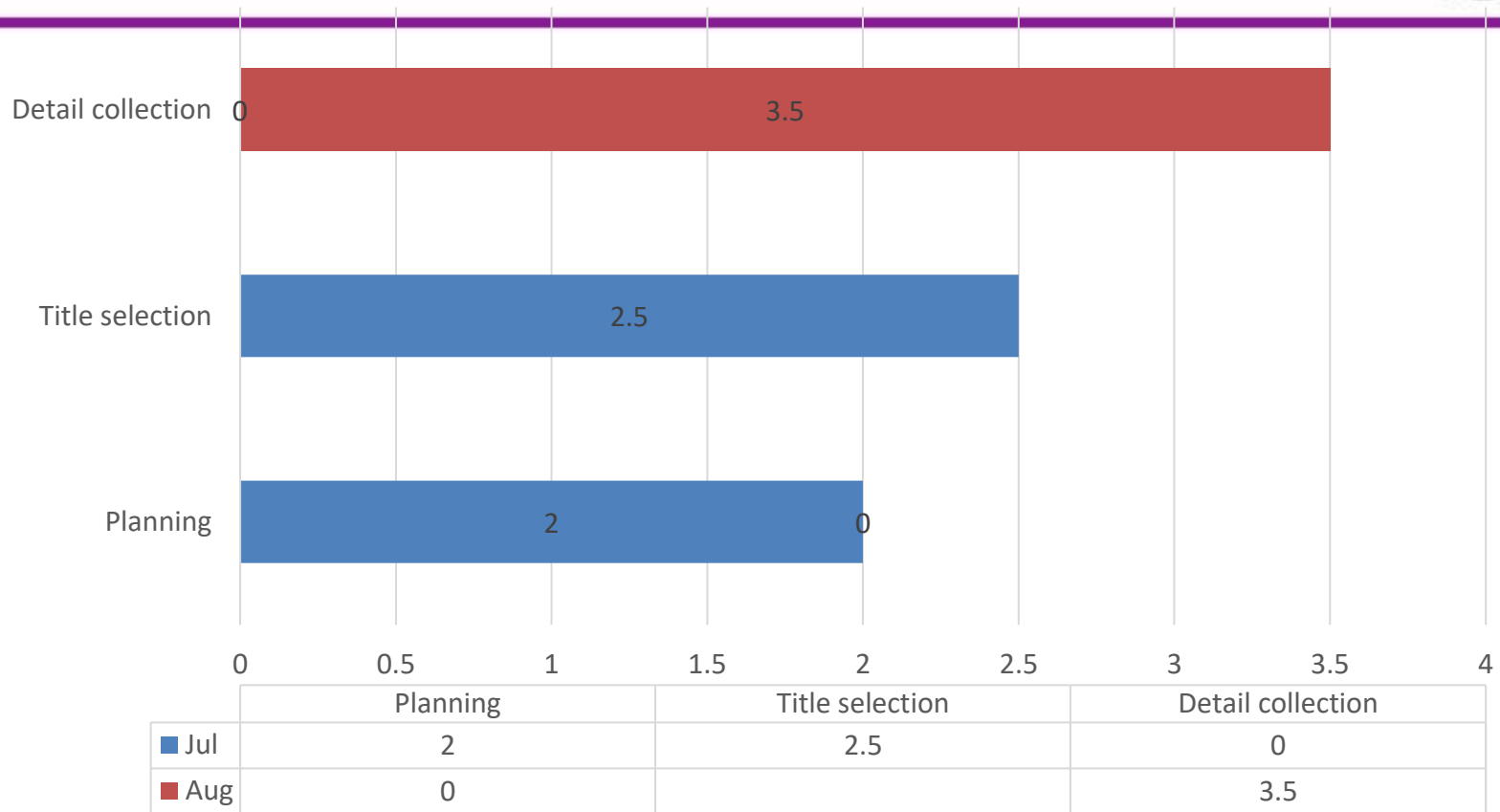
# WORKS FINISHED SO FAR

- Planning
- Title selection
- Detail collection
- Material Selection

# WORKS TO BE CARRIED OUT

- To create design of the product
- Collection of materials
- To create the prototype model
- Testing the product
- Implementation

# GANTT CHART



# REFERENCE

- F. Cucchiella et al. End-of-Life of used photovoltaic modules: A financial analysis
- P. Agamuthu et al. E-waste flow among selected institutions of higher learning using material flow analysis model
- Dittakavi Tarun<sup>1</sup>, V. Mohan Srikanth <sup>1</sup>, R. Jithendra Kumar<sup>1</sup>, I Mehar Anudeep<sup>1</sup>, S. Srikanth<sup>1</sup> International Journal of Theoretical and Applied Mechanics. ISSN 0973-6085 Volume 12, Number 4 (2017) pp. 699-708

# THANK YOU