

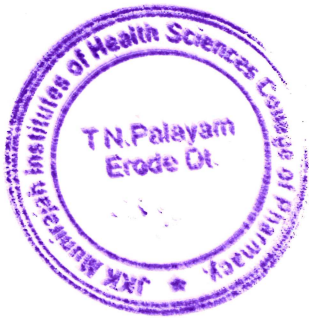


# JKK MUNIRAJAH INSTITUTE OF HEALTH SCIENCES COLLEGE OF PHARMACY

( Approved by Tamil Nadu Govt. & Pharmacy Council of India - New Delhi, Affiliated to The Tamil Nadu Dr. M.G.R Medical University, Chennai )  
Thookanaickenpalayam, Gobichettipalayam (TK), Erode (DT) - 638506, Tamil Nadu.

## 2. FACILITIES IN THE INSTITUTION FOR THE MANAGEMENT OF DEGRADABLE AND NON-DEGRADABLE WASTE

1. SOLID WASTE MANAGEMENT
2. LIQUID WASTE MANAGEMENT
3. E-WASTE MANAGEMENT
4. WASTE RECYCLING SYSTEM
5. HAZARDOUS CHEMICALS AND RADIOACTIVE WASTE MANAGEMENT



Principal

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## SOLID WASTE MANAGEMENT

- Sufficient numbers of waste bins are available in the campus for the students to dispose degradable and non-Degradable wastes
- Bio-Degradable wastes include food wastes, canteen waste, human waste, paper waste and etc.
- Non-Biodegradable waste include plastic, tins, metals, glass bottles and etc.
- Collection from each facility
- Door to door or community-based collection
- Source segregation via separate bins as per the waste
- After collection segregation before the processing of waste starts

## WASTE TRANSPORTATION

- Transportation of waste from the point of collection to point of processing
- Waste must be transported under covered conditions to avoid littering
- Exposure of the waste to the public should be minimized

## WASTE PROCESSING

Waste processing refers to the activities required to ensure that waste has the least practicable impact on the environment

Composting Scrap & metal recycling, Anaerobic Digestion (AD), Emerging Energy Technologies, Chemical waste, recovered paper sector, Wood, Plastics, Glass and Rubber recycling are some of the techniques.

## WASTE DISPOSAL

Waste disposal is the proper disposal of a discarded or discharged material in accordance with local environmental guidelines or laws.

Disposal includes burning, burial at landfill sites or at sea and recycling.

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## GARBAGE COLLECTION VEHICLE

- The wastes collected from waste bins are regularly shifted to collecting trolleys  
By Housekeeping staff members
- They are then dumped in the specified place located away from the academic area and process Accordingly.

## WASTE COLLECTION VEHICLE

- ✓ Front loaders.
- ✓ Rear Loaders.
- ✓ ASL (automated side Loaders)
- ✓ Pneumatic collection.
- ✓ Grapple Trucks.

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## FOOD WASTE DISPOSAL

- Food Wastes collected from hostels, guest houses and canteen are given to pigs and poultry farm Located near thookanaickenpalayam.
- Bio-degradable wastes are effectively converted to fertilizer by composting technology inside the campus.
- Plan your meals. Instead of buying whatever is left on the shelves, try to buy only what you eat, and eat what you buy.
- Organize your fridge for success.
- Learn some new cooking skills.
- To realize an environment with zero Food-waste, several quotations, newspaper articles and awareness statements are displayed in notice boards through which students and employees  
Are inspired to reduce food/water loss and waste.
- To inculcate the students and employees with the practice of using water efficiently and cutting down its wastage or unnecessary usage, awareness signboards are kept at various places of the campus.

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## LIQUID WASTE MANAGEMENT

The waste chemicals mixed water from laboratory passes through concealed pipe line into soak pit & recycled water is used for the watering trees or non-potable usage.

Liquids are diluted by getting mixed with the washroom and toilet liquid wastes in to the common drainage.

## SANITARY NAPKIN INCINERATOR

- In House disposal facility of sanitary napkins
- Incineration is used by the institute to dispose of the solid waste.
- Sanitary napkin incinerations are installed inside the campus to promote hygiene.

## AGRICULTURAL WASTE

- It includes bio-degradable wastes such as dry leaves, grass cuttings, twigs, hay and straw.
- They are used in composting process for making some organic fertilizer.
- Bio fuels. Plant waste can produce bio fuels such as biodiesel or ethanol. ...
- Plastic Substitutes. After the juice has been extracted from sugarcane, the stalk that is left is known as bagas.
- Bioplastics. Bioplastics are getting both stronger and greener.
- Compost.
- The benefits of recycling of agricultural solid wastes include reduction of greenhouse gas emissions and use as fossil fuel as well as contributing significantly to the development of new green markets, creation of jobs, production of bio-energy and bio-conversion of agricultural solid wastes to animal feed

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## E - WASTE MANAGEMENT

- Electronic goods are put to optimum use by repair work done by technical assistant
- Non repairable e-waste like obsolete electronic devices such as computer systems, servers, monitors, compact discs, printers, scanners, calculators, fax machine, battery cells are used models to explain concepts to the students.
- Otherwise, safely stored in a room and sold as a scrap for every academic year.
- Students are encouraged to reuse e-waste for project.
- Data are stored in cloud, to avoid the usage of CD-ROM and pen drives.

### E-WASTE:

E-waste or electronic waste created when an electronic product is discarded after the end of its useful life. The rapid expansion of technology and the consumption driven society results in the creation of a very large amount of e-waste in every minute.

### PROCESS OF E - WASTE RECYCLING

Recycling electronics is an often-challenging activity. This is because e-scrap are typically sophisticated and manufactured from diverse elements such as metals, plastics, and glass. While this process often varies, there is a general process. So, here is what you need to know. This is the first stage of recycling e-waste. Here, recyclers place take-back booths or collection bins in specific places. When these bins get filled, the recyclers then transport the e-wastes to recycling facilities and plants.

### STEP 2: SHREDDING AND SORTING

After collecting and transporting, the next step is to shred and sort the e-waste. The success of subsequent separation relies on shredding. And this is why efficiency is essential at this stage. Shredding involves breaking e-waste into smaller pieces for proper sorting. With the use of hands, these tiny pieces get sorted and then manually dismantled. This is typically labor-intensive as waste items are, at this stage, separated to retrieve different parts.

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After this, the materials get categorized into core materials and components. Then, these items get sorted into various categories. Typically, this category includes items that you can re-use as they are and those that require further recycling processes.

In any case, e-wastes are often manually sorted, while compounds such as fluorescent light, batteries, UPS batteries, and toner cartridges should not be crushed or shredded by hand.

## **STEP 3: DUST EXTRACTION**

The tiny waste particles get smoothly spread via a shaking process on the conveyor belt. The smoothly spread e-waste pieces then get broken down even further. At this point, the dust gets extracted and discarded in an environmentally compliant manner. This way, there is no environmental degradation.

## **STEP 4: MAGNETIC SEPARATION**

After this, a strong overhead magnet helps you separate steel and iron from other wastes. This way, you have successfully recycled the steel from the waste stream.

However, some mechanical processes may sometimes be required to separate circuit board, copper, and aluminium from other wastes particles. And this is especially where they are mostly plastic.

## **STEP 5: WATER SEPARATION**

After this, water separation tech becomes relevant to separate the glass from the plastic. You can then send leads that contain glass to smelters to use in the production of batteries, x-ray tubes, and new CRT.

## **STEP 6: PURIFICATION OF WASTE STREAM**

The next thing is locating and extracting leftover metals from plastics to purify the waste stream further.

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## STEP 7: PREPARING RECYCLED MATERIALS FOR SALE

The final stage is preparing recycled materials for sale. Here, the materials separated during SSS get prepared for sale as raw materials to produce new electronics.

## 4. HAZARDOUS CHEMICALS & RADIO ACTIVE MANAGEMENT

Hazardous chemicals are kept away from the reach of students. Fire extinguishers are available in all labs. Regular check on fire extinguishers is taken care by administration department. Labs are well ventilated & spacious.

Hazardous waste can be treated by chemical, thermal, biological, and physical methods. Chemical methods include ion exchange, precipitation, oxidation and reduction, and neutralization. Among thermal methods is high-temperature incineration, which not only can detoxify certain organic wastes but also can destroy them. Special types of thermal equipment are used for burning waste in either solid, liquid, or sludge form. These include the fluidized-bed incinerator, multiple-hearth furnace, rotary kiln, and liquid-injection.

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**PHOTO OF DEGRADABLE AND NON-DEGRADABLE DUSTBIN**

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## LIQUID WASTE MANAGEMENT

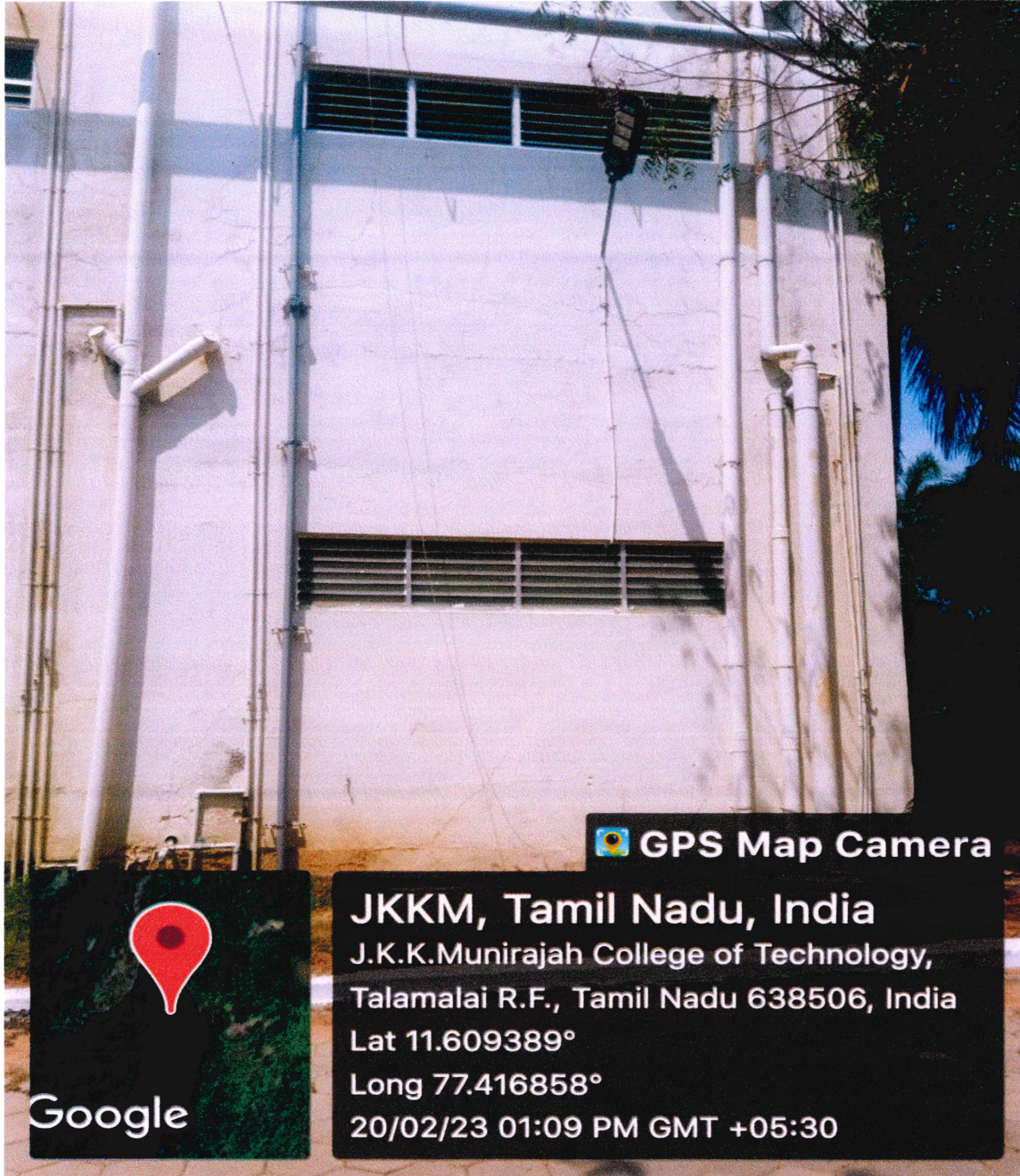


PHOTO OF LIQUID WASTE MANAGEMENT PIPE LINES

*[Signature]*  
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## FOOD WASTE (BIOGAS)

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**PHOTO OF COMPOSITE PIT IN SOLID WASTE MANAGEMENT**

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**PHOTO OF AGRICULTURAL WASTE**



**PHOTO OF ELECTRONIC WASTE**

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## GARBAGE COLLECTION VEHICLE



PHOTO OF GARBAGE COLLECTION VEHICLE (MUNICIPALITY T.N-PALAYAM)

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**PHOTO OF HAZARDOUS CHEMICALS & RADIO ACTIVE  
MANAGEMENT**

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