International Journal of Advance Research in Science and Engineering
Volume No.07, Special Issue No.03, April 2018
www.ijarse.com
IJARSE
ISSN: 2319-8354

E-WASTE MANAGEMENT

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ABSTRACT

More than 26,000 metric tonnes (MT) of electronic waste is generated in the city every year, the eight highest in the country, says a new report by the Associated Chambers of Commerce and Industry of India of concern that most of our E-waste is handled the most unscientific way by scrap dealers, who may be in advertently handling "radioactive materials" commenting on the health hazard, "Domestic e-waste, including computers, TVs, mobiles and refrigerator contain more than 1000 toxic materials like lead cadmium, mercury, hexavalent, chromium, plastic, polyvinyl chloride, barium, beryllium, carcinogens like carbon black and heavy metals that contaminant soil and ground waters. Exposures can cause headache, irritability, nausea, vomittting and eyes ache. Recyclers may suffer liver, kidney and neurological disorder.

Keywords. E-waste management, Environmental impacts and challenges, Acid Bath, Shredding.

I.INTRODUCTION

E-waste is any refuse created by discarded electronic devices and components as well as substances involved in their manufacture or use. The disposal of electronics is a growing problem because electronic equipment frequently contains hazardous substances. In a personal computer, for example, there may be lead in the cathode ray tube (CRT) and soldering compound, mercury in switches and housing, and cobalt in steel components, among other equally toxic substances. Electronic or electrical technology we no longer need or want is called 'e-waste', and includes things such as computers, monitors, televisions, home entertainment systems, printers, fax machines and mobile phones. Only about 10% of e-waste is recycled compared to 52% of general waste. Most people have a range of home entertainment products including sound systems, and many also have a home office or study with printers, scanners, photocopiers and computers, so it's worthwhile considering how you can reduce waste and save money on the technology in your home.

II.LITERATURE SUMMARY

The electronic industry is the worlds largest and fastest growing and manufacturing industry in the world. Discarded electronic and electrical equipment with all of their peripherals at the end of life is termed e-waste. The quantity of c-waste generated in developed countries equals 1% of total solid waste on an average and is expected to grow to 2% by 2011 and is one of the fastest growing waste streams.E-waste consists of ferrous and non ferrous metals, plastic, glass, ceramics, rubber etc.

Electronic waste and its negative consequences affect to the living standards and environmental sustainability. Consequently, this study was performed on E-waste generation and management approach in the aspects of local concept. Results showed that, total amount of E-waste generation have been increased along with technological advancement, marketing system and policy improvement

III.ELECTRONICS: THE GROWING INDUSTRY

Global electronic equipment production has grown from $225 billion in 1980 to almost $1 trillion in 2000, which equates to a compound average annual growth of 7.7 percent over the past 20 years. In 1980, half of all electronics systems were manufactured in North America, one quarter in Europe and the balance split between Japan and the rest of Asia. The personal computer was just emerging and the transition to digital telecommunications switching was in full swing. A dramatic shift in production leadership occurred over the next ten years.

IT and telecom are two fastest growing industries in the

country. India, by 2011, has achieved a PC penetration of 95per 1000 from the 14 per 1000 in 2008. At present, India has 95 million one of the most threatening substances is lead, of which only 5 percent is recycled. Major issues related to Indian scenario are:

• India's hospitals to see patients with 10 times the

expected level of lead in their blood.

• 1-20 kg per person and growing at 3 times faster than

the municipal waste

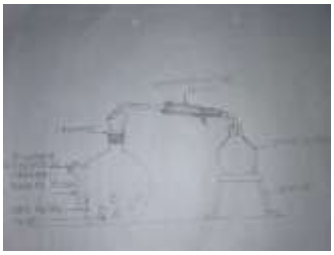
• Over 200 million current mobile users.

• Preliminary estimates suggest that total WEEE

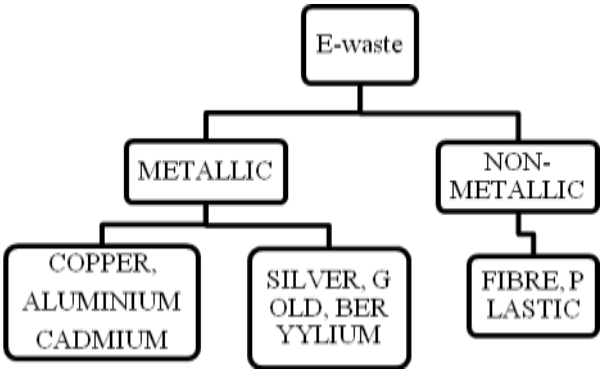
generation in India is approximately 1,46,000 tonnes per year.

IV.METHODOLOGY

Acid bath method is used to extract copper, silver and gold. Our model includes two flasks one of 5000ml and other of 250ml.PCB's(Printed Circuit Boards)about 500gm are inserted in 5000ml flask then, 5 litre of concentrated sulphuric acid is poured into it and whatever the toxic gases are coming out are further condensed in 250ml flask with the help of condensing tube. The major function of condensing tube is that it will perform two functions i.e. the outer part will carry out the chilled water and the inner part will carry the vapours coming from E-waste. Here, the Printed circuit board (PCB's) are submerged into Sulfuric acid for 24 hours to dissolve all the metals. And, further all the non-metallic part of E-waste is shredded in shredder and is used in concrete blocks and road pavements.



For Non-Metallic Part (Shredder)



V. RESEARCH METHODS

As per studies up-to-date major method used for E-Waste is Acid bath method. But, according to studies whatever the gases evolving out from waste are harmful to environment which are directly let out into the atmosphere.

But, as per our project we are condensing the gases in closed round bottom flask instead, of letting it directly into the atmosphere.

VI.OUTCOMES

From prototype metals such as gold,silver and copper are separated. Averagely,in terms of percentage the overall amount of PCB's(Printed Circuit Boards) present are calculated.And the non-metallic part i.e. fibre used in concrete blocks gives the corresponding compressive strength.

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