IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)
e-ISSN: 2278-1684,p-ISSN: 2320-334X,
PP 07-09
www.iosrjournals.org

A Heuristic Accost for Cost Effective Home Appliance Designing Using Novel E-Waste Management System

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ABSTRACT: *Discarded gadgets, circuits or elements of Electrical and Electronic produces e-waste. With the dynamic progress in lithography techniques and speedy innovation numerous electronic equipment are produced day by day. Unfortunately this same technological stride created mammoth 'left out electronics' and gradually generated e-waste. This is catastrophically increasing. Consequently, global warming and greenhouse effect of society has increased manifold. In order to pacify the intensity of these effects several endeavors are attempted worldwide. The authors too swayed in the same tide. Inspired truly by the call to clean the world and motivated by several significant meadows of 'cleaning the world' here the authors initiate to design some small home appliance for daily uses from e-waste; instead of throwing all things in society. Thereby the authors render a heuristic approach in cleaning the e-waste in substantial modus.*
Keywords *- audio, cooler, e-waste, pump, switches*.

I. INTRODUCTION

E-waste is unwanted source of electronic and electrical left-outs piled at the end of consumption [1]. Electronic product often contains mammoth toxic and hazard articles which could not be reused with other waste. Along with China, India is largest importer of e-waste from developed country like US, UK and Japan. In India 90% people uses mobile and every year around 200 new models of mobile hit the market [2, 3]. Thus new mobiles replace the old ones and create cellular e-waste. Numerically, the rate of E-waste generation is increasing by 10% everyday [4]. Some typical e-waste that are generated are mostly sourced from mobile phone, telephone, laptop, desktop, printer, telephone exchange, EPABX, wireless equipment, cable related scrap material, these are considered as telecom industry e-waste material. Similarly switches, relay, collector related scraps are electrical waste. With the globalization of IT industry E-waste disposal increases day by day [5, 6]. This has motivated the authors to peruse an alternative of dumping e-waste material i.e., by reusing all disposables in reshaping them for future use in some home appliance designing. Basically authors initiated to clean the society and make it healthy for next generation. In this manuscript here authors illustrated some prototype modeling for home appliance for future use like small portable cooler design, sound control lightning system, clapping switching control etc.

This endeavor is unambiguous but it require more sophistication for enduring e-waste solutions. The authors report merely few attempts and advocate for more pragmatic waylays to be incorporated in future. The essence of the authors are vividly documented in the projected meadow.

II. DIFFERENT PROTO TYPE MODELING

II.I E-Waste Based Craftsmanship of Musical Instrument Digital Interface (MIDI) system.

In this modeling author designed a Musical Instrument Digital Interface (MIDI) few LEDs collected from damaged LED arrays. This system basically is used by musical troops for their performance in a stage. For this prototype modeling they adhered on e-waste transistor and Light Emitting Diode (LED). Here audio signal is considered as an input to the system. Depending on the volume of the music, the intensity of light is changed. Block diagram and the designed MIDI is depicted here in figure 1, 2 respectively. The transistor here operates as a switching device.

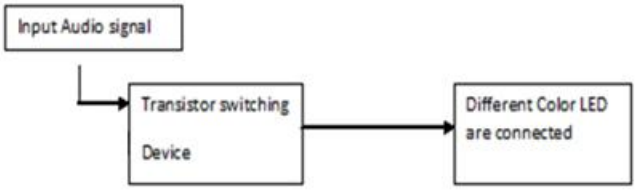

Figure- 1 Prototype Model for Sound Controlling Lightning System

Fig-2: Hardware realization of MIDI system

II.II Domestic Water Cooler System Molded from E-waste

In this proposed cooling system SMPS fan of redundant Laptop and CPU is re-consumed. The entire archetype is mounted into thermocol box. Two SMPS fan are used. One for hot air circulation and the other is for cold water circulation. Small feed water pump is used for circulating cold water. Figure-3 depict the cooler model for domestic use articulated from old laptop/computers, the figure 4 shows the basic block diagram of cooler model along with its operational maneuver respectively.

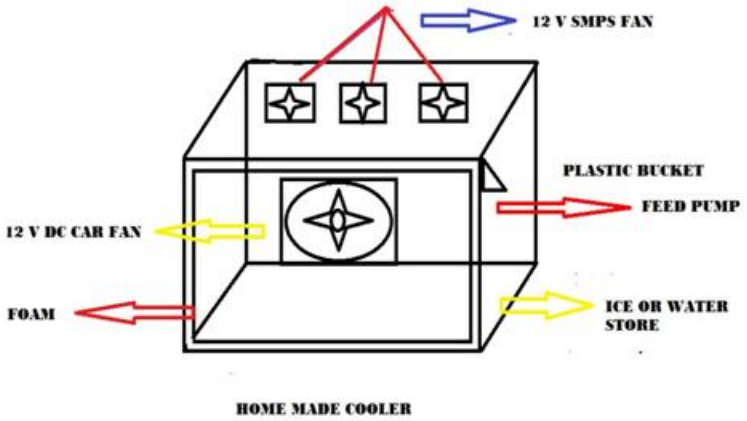

Figure-3 Prototype model for cooler system

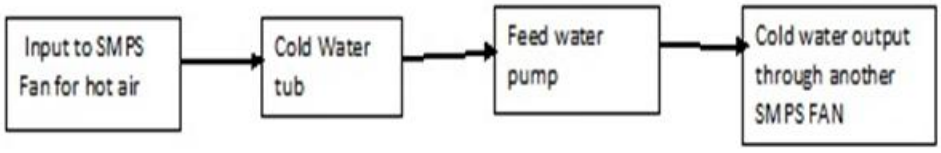

Figure-4 block diagram for cooler model

III. CONCLUSION

'Swach Bharat Abhiyan' has strongly motivated authors to design some small home appliance from e-waste. This is to be envisaged as a small effort from the authors to clean e-waste from society & India. By designing very small prototype model people can reuse waste part of electronic instruments yet again. Authors concurrently initiated to conceive other small home appliance like pocket inverter, small feed water pump, solar panel power backup set etc. All home appliances are quite user-friendly and do possess enormous socio-economic potentiality. Simultaneously clamping circuit for switching is also introduced for handicap people. Last not least the authors designed some sound padding system in economic way. Thus e-waste is turned into reusable with a little technical thinking and society friendly endeavor.

ACKNOWLEDGEMENTS

The authors wish to thankfully acknowledge the financial contribution made by CSET, Barasat in continuing this research.

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