Sanitary Napkins Disposal System

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Abstract- *The problem of improper disposal of menstrual waste is measure road block for achieving "Swachha Bharat" missions to create a clean India. This waste is problematic for several reasons. Heaps of sanitary napkins with a large amount of disease causing bacteria pose a significant threat to the hygiene in the surrounding area. Young girls and even certain older women's are not aware of the hygiene problems cause by improper disposal of Napkins. The system is one of the best way to dispose menstrual waste to burn napkin using electrical fire based burner without allowing smoke generate in the process to escape into the atmosphere. Steps must be taken to solve the problems for improper disposal of napkins which causes problems to the environment and to the public health.*

Keywords- Sanitary Napkins, Burner, Hygiene, Women's.

I. INTRODUCTION

Sanitary waste is non-hazardous, non-radioactive waste material coming from human body in solid or liquid forms. The sad thing is, people in our country still think of this topic as a taboo. Nobody talks about the proper disposal of sanitary napkins. Sanitary waste disposal has become an increasing problem in India as the plastic used in disposable sanitary napkins are not bio-degradable and lead to health and environmental hazards. The problem does not end here. The plastic layer which is used to make it stain-free and chemicals used in producing it get further transferred between soil, water and air. Most women and girls in rural India use cloth, which if not dried in proper sunlight for reuse could lead to further health complications. In fact, many women in rural India tend to throw them in open spaces, like rivers, wells and even roadsides as they don't have access to safe option with no knowledge of how to dispose them. Most of the women just throw them in the garbage bin which usually gets mixed up with dry, wet and hazardous waste. One sad but true fact is, more than 75% of this sanitary waste is not even properly dumped. Therefore good menstrual hygiene practices keep the body healthy thereby less vulnerable to infections/ diseases.

Why is it necessary to dispose of sanitary napkins:

- If they are left in the open , they are sore sight.
- May lead transmission of infections like hepatitis B and hepatitis C.
- No danger of HIV infections.
- Will attract files and insects.

II. RELATED WORK

Sanitary napkins typically used by women's, but an issue where disposal system do not operate effectively and affordable thought that come to every women's mind when she picks up sanitary napkin. Every month 353 millions women's and adolescent girls across India need to dispose their sanitary napkins. [1]Linda scott, paul Montgomery, laurel stinfielt, Catherine dolan, sue dopson have presented that frequently hear a public concern about providing sanitary napkins to women's and adolescent girls in developing countries. We believe that the impact of pads disposal should be weighed against the potential to help girls delay child bearing by preserving privacy about puberty. Disposal of commercial sanitary napkins is also a problem Even when the community does burned in the open, often incompletely, leaving gobs of half-consumed objects for dogs or children to pick out. [2] Fan Bai, Xiaochang Wang is said Aerobic composting is a method for sanitary napkins disposal of human feces as has been used in bio-toilet systems. As the composting products can be appropriate as fertilizer, it would be agreeable if the composting condition could be well controlled for holding fecal nitrogen as far as possible in the composts. It draws attention especially from regions and areas where provision of sufficient water for toilet flushing is difficult due to water shortage, therefore it is necessary to biodegradation of the human feces in which organics and fecal nitrogen are decomposed or transformed under the action of microorganisms. [3] Yichun YEH, Harutoshi OGAI, Ryouta YUI, Hiroshi MORITA, Yukinori TAKABAYASHI have provided a system which disposes a microorganisms, cryptomeria chips and ALGA , for waste reduction a new disposal technique is been introduce which

dispose diapers. Microorganisms living with the cryptomeria chips have effect on the decomposition of the disposable diapers, an eco-friendly disposal method that uses microorganisms from the woods to dispose the used diapers is proposed to reduce waste. Microorganisms contain cryptomeria chips have the effect on the decomposition of the pulp. about 85.46% of the pulp per sheet decomposed by microorganisms, decomposition rate of disposable diapers can improve, by using another nutrition source for the multiplication of microorganisms. [4] This study investigated how women manage menstrual waste in the backcountry, in the light of potential environmental degradation. Personal interviews were conducted to determine the methods of menstrual waste disposal that are used in backcountry. Hygiene and discretion are major factors of concern for women in dealing with menstruation, and lack of information about appropriate menstrual disposal practices in the outdoors was occurred. Disposal of menstrual wear via sewage systems can lead to blockages of the systems, and cause millions of plastic strips to be dumped into the sea, where they remain indefinitely, causing visible pollution. Menstrual products are disposed of by the majority of users in the easiest and most convenient way. Eighty percent of users flushed sanitary napkin down the toilet at home and work. The plastic used in sanitary napkins, which is non-biodegradable, is not only harmful for health, but also has negative consequences on the environment.

The aim of our project is to keep environment clean by means sanitary napkin disposal system we also need to give solution to dispose sanitary napkin and avoid current ways of disposal like sanitary napkins are mixed with regular waste and it is difficult to separate them and dispose them. This exposes viral borne waste to the environment , animal and public at large causing diseases like Hepatitis B & C. Incinerating this napkin is the only way of getting rid of these problems hence installation of this system is developed. A safe, hygienic, scientific and quick method of disposal of sanitary napkin is to dispose them at relatively low temperature to ash. It helps to dispose sanitary napkin in hygienic way without generating harmful emission. This system requires less power, capacity of 60 per day.

III. SYSTEM DEVLOPMENT

The block diagram consist of different component like PIC16F877A, Relay Driver, LM35, Heater, Buzzer, LCD Display.

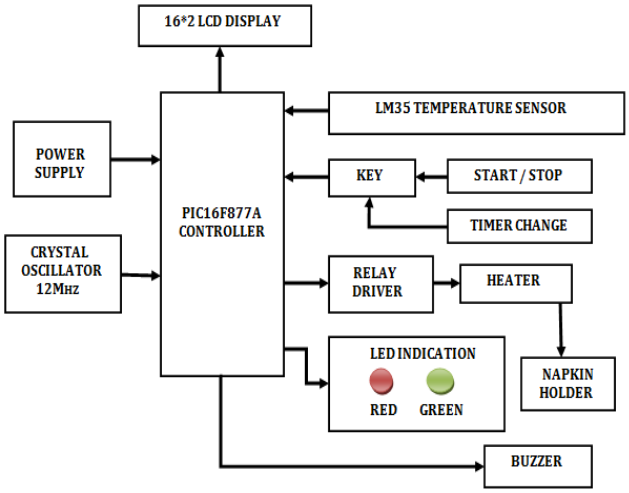

Fig.(a) Block Diagram Of System

When system is connected to AC mains i.e. 230V AC the power supply present in the system convert the 230V AC into 5V DC. This 5V DC voltage is applied to the Microcontroller to turn it ON since it is the basic DC voltage required for it to turn ON. Once the Microcontroller turn ON along with a system name i.e." Sanitary Napkin Disposal System", the initial state of timer i.e. ON/OFF and temperature reading are display on LCD. As system turn ON, another power supply converts 230V AC into 12V DC which is required for the relay to turn ON, its starts heating the coil of burner. Once the required heat to burn the napkin is attained by burner the Microcontroller display the message regarding the system being ready for its process. A timer is being programmed for 5min to dispose of one napkin. After the dispose ash is produce which is the final output we want. Once the ash is completely form, LED glow indicating that process is completed and turn of the heater and relay. Also there is another condition such a that if we put another napkin along with the napkin under process, the sensor present there sense another napkin and automatically increments the time of the timer by 5 minutes for which the timer is being programmed. Time is go increasing with quantity of napkin with 5 minutes.

IV. IMPLEMENTATION

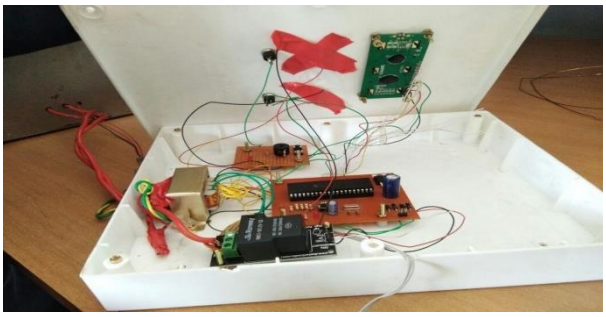

Fig.(b) Implemented circuit

Fig.(c) Step [1]

In [Step 1] shows the name of project on LCD display.

Fig.(d) Step [2]

In [Step 2] shows the temperature of burner with the help of temperature sensor LM35 and set time to burn particular napkin.

Fig.(e) Step [3]

In [Step 3] now heater get ON and it shows the how much time is left to burn napkin.

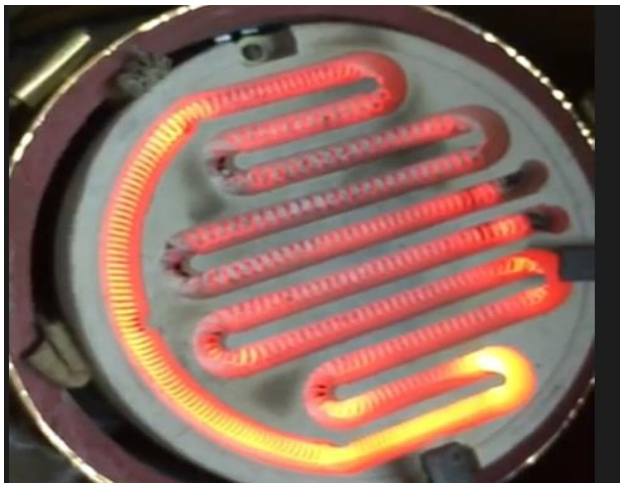

Fig.(f) Step [4]

In [Step 4] heater is ON and start to burn napkin.

Fig.(g) Step [5]

In [Step 5] finally the napkin get burn and process is completed and turn of the heater and relay.

V. SYSTEM REQUIREMENTS

Selection of software and language

- Embedded C
- Express PCB

Selection of hardware

- Power Supply
- Microcontroller [PIC16F877A]
- Temperature Sensor [LM35]
- 16*2 LCD Display
- Heater
- Buzzer
- Relay Driver [ULN2803]
- Light Emitting Diode [LED]

VI. CONCLUSION

Sanitary waste disposal has become and increasing problem in India as the plastic used in disposable sanitary napkin's are not bio-degradable and lead to health and environmental hazard. Insufficient information is available to women on the environmental impacts of menstrual waste and on alternative behaviors which reduce the impact. With no knowledge of how to dispose napkins, most women just throw them in the garbage bin which usually gets mixed up with dry, wet and hazardous waste. This project gives a solution for destroy napkin waste in a very hygienic way. It is portable system to destroy napkin waste using Incinerator. This system also helps to achieving the "Swachha Bharat" mission and avoid the large amount of diseases.

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