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ANALYSING THE PERFORMANCE OF POLYTRONICS WITH TRADITIONAL MECHANISMS

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Abstract: Microelectronics is a subfield of electronics. These include transistors, capacitors, inductors, resistors, diodes & insulators & conductors could all be found in microelectronic devices. The age of polymer electronic has begun. The age of polymer electronic has begun. It is not primarily a replacement for existing electronic technologies, but opens up the prospect of completely new applications that combine the features of transistor, LED, detector and interconnect devices with the freedom of design, flexibility and low cost of plastics.

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Keywords: Scales, Detector, Interconnect, Semiconductor, Freedom, Printer, Semiconductor,

[1] INTRODUCTION

Microelectronics

Microelectronics is a subfield of electronics. As name suggests, microelectronics relates to study and manufacture of very small electronic designs and components. Usually, but not always, this means micrometre-scales. These devices are typically made from semiconductor materials.

Polytronics

With invention of transistors in early half of nineteenth century, field of electronics has undergone innumerable changes that have had tremendous impact on life of common man. Be it education, entertainment or healthcare, there is possibly no field where electronics has not made an impact. Entire concept of electronics is based on study of materials called semi-conductors.

Printing of circuits

Fabrication of microelectronic components would allow manufacture of complete gadgets through just printing process in near future. Such a technology is being developed by University of California. technology would focus on building any electronic device from bottom up gradually, so, instead of building a device by adding

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new components through regular "assemble & build" technique, entire product would come out of printer complete with electronic circuitry embedded in product itself.

Rubber electronics

Researchers at 'John Hopkins University' have successfully built rubber circuits out of several squashed but extendable gold wires. Circuits are about 20 times thinner than a human hair & have potential to be stretched by over half their initial length without loss of electrical conductivity.

Polytronics & Environment

Polytronics not only addresses issues related to electronics industry, also it helps us in addressing environmental issues & paves way for formation of an eco-friendly environment.

Electronic paper

paper & pulp industry which produces huge amounts of inorganic pollutants such as sulphides, bleaching liquors & organic pollutants like cellulose fibers, bark, wood, sugars, organic acids etc which leads to various forms of pollution.

[2]LITERATURE REVIEW

Polymer Electronics fancy or future of electronics by Karlheinz Bock in

At present, electronic world is very much dominated by inorganic materials, in particular silicon. Organic materials in electronic devices were mostly used as insulators, so far. History of polymer electronics started 25 years ago – firstly conductors, than semiconductors, transistors & fully functional polymer ICs.

Chip technologies for Entertainment Robots present & future by T. Makimoto

The historical background, current status & future prospect of Entertainment Robots would be reviewed, & critical roles played by chip technologies including processor performance, sensing capability & actuator elements discussed.

[3] PROPOSED WORK

For several years plastics are known as INSULATORS & were used frequently in case of shielding copper wires. Recent technology POLYTRONICS has changed viewpoint at visualizing to conduct polymers as a material of Microelectronics**.**

Study scope of polytronic technology

Silicon has largely influenced Electronics industry & would continue to do so over a period of time. However, technologists are now looking at other alternatives, mainly "Plastic Circuits", to meet our future needs.

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Here is a look into how plastics would influence world of electronics.

Electronic paper

Electronic paper & **e-paper** are display devices that mimic appearance of ordinary ink on paper. Unlike conventional backlit flat panel displays that emit light, electronic paper displays reflect light like paper.

Plastic batteries

Polymer-based battery

Uses organic materials instead of bulk metals to form a battery. Organic polymers could be processed at relatively low temperatures, lowering costs. They produce less carbon dioxide. Organic batteries are an alternative to metal reaction battery technologies, & much research is taking place in this area.

Investigate architecture of polytronic based technology

For flexible electronics, continuous flow, low- cost manufacturing processes with high throughput have to be used. best seems to be reel-to-reel industrial processes, based on prints circuits on flexible substrates technique.

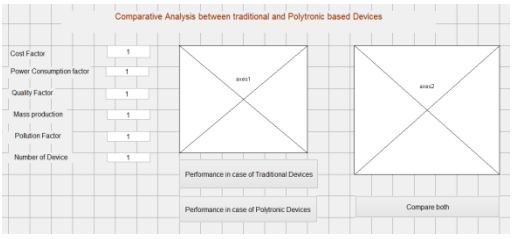

Fig: 1 Pollution factor U

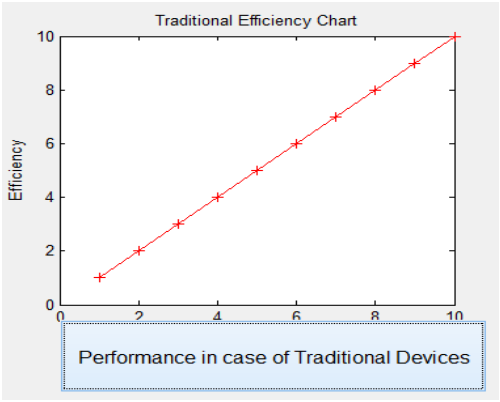

Fig: 2 Performance in case of TD

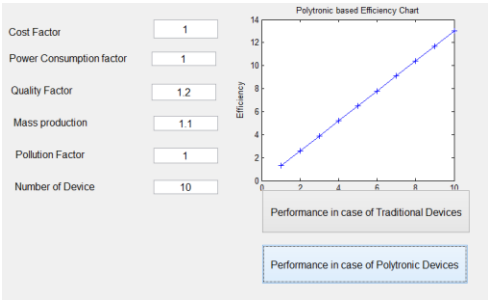

FIG: 3 Performance in case PD

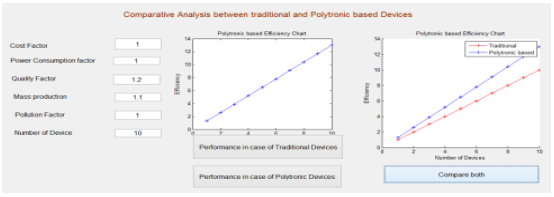

Fig: 4 Cost factor is 1 , power consumption factor

[4] RESULT AND DISCUSSION

Factor description

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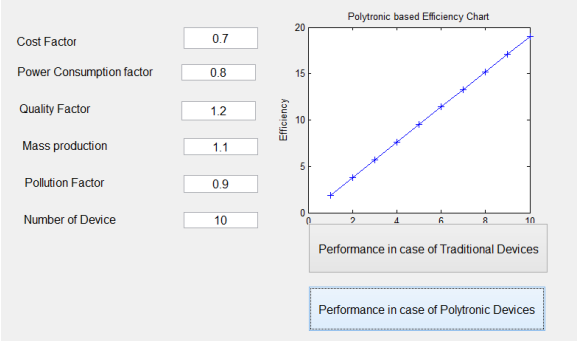

FIG: 4: Cost factor is 0.7, power consumption factor

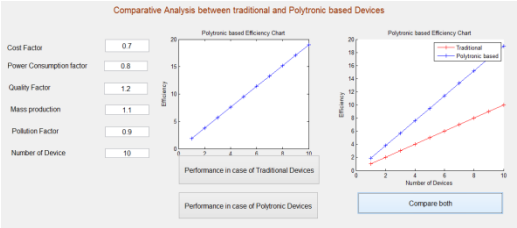

FIG: 5 Comparative Analysis between and polytronic based device

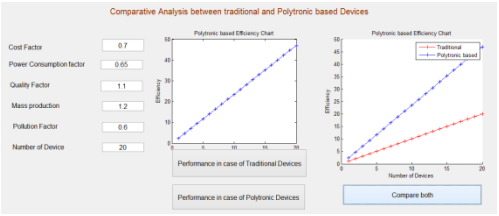

Fig :6 Comparative Analysis between and polytronic based device

Energy Consumption in System

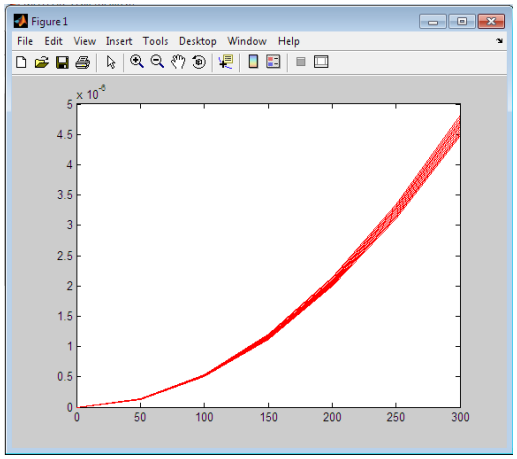

Fig: 7 Energy Consumption in System for K=2

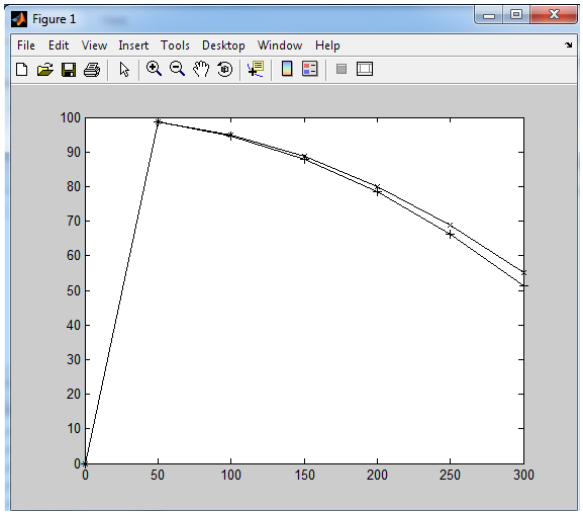

Fig: 8 Energy Efficiency

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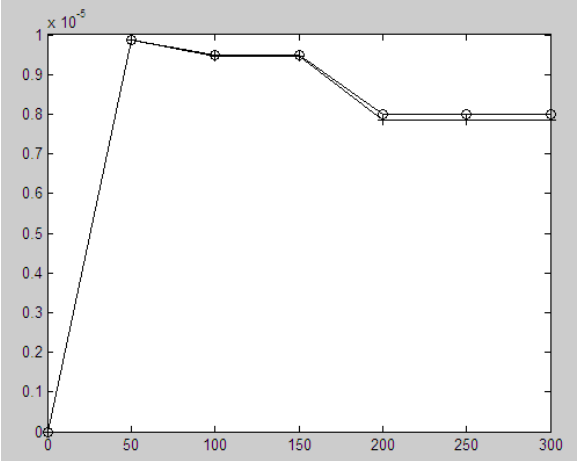

Fig: 9 Delayed Efficiency

[5] CONCLUSION OF FUTURE SCOPE

The age of polymer electronic has begun. It is not primarily a replacement for existing electronic technologies, but opens up the prospect of completely new applications that combine the features of transistor, LED, detector and interconnect devices with the freedom of design, flexibility and low cost of plastics. This technology has number of upcoming areas of interest where lot of research is going on to manufacture microelectronic components on plastic substrates which would allow manufacturing of gadgets through just printing process.

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