



# The Separator Importance in Mechanical and Biological Practical Applications

Jitendra Sunte

Assistant Professor, Department of Mechanical Engineering, Lingaraj Appa Engineering College Bidar,  
Karnataka India

Corresponding Author : Email Id: - [jitendrasunte@gmail.com](mailto:jitendrasunte@gmail.com)

## ARTICLE INFO

### Article History:

Accepted: 01 July 2023

Published: 17 July 2023

### Publication Issue

Volume 7, Issue 4

July-August-2023

### Page Number

01-05

## ABSTRACT

The separator, as mechanical material, is usually a polymer membrane at a high melting point as 150 °C depending on the type of material (as an example) and thickness of 10–50 microns, which also has micro porous holes. Here, only ionic-level diffusion will take place, as seen in many batteries. In mechanical examples, as in the oil and gas purifier industries, petrochemical industries in pressure vessels and tanks where separation is necessary, it may be 2 phase, 3 phase, 4 phase at the solid, oil, water, and gas stage levels. At the mining level, both magnetic and non-magnetic segregation is used. So almost every field requires a separator. The most common practical application in human life is that malefic strength is usually gained through biological separation from the supermale. The chromosome level balancing gives strength to the human body from the biological separator. The addition or deletion of chromosomes pair can be altered or changed depending on requirement or balancing gaining to the human body practically obtained. one can regain malefic strength from super bodies. Also consuming more tandoori aata roti is bad results as this is specially meant for supers. There are seeds gender in the form of foods is there from this one can acquire strength depending on persons gender.

**Keywords :** Phase Separator, Biological Separator, Mechanical Separator

## I. INTRODUCTION

Polyolefins like polyethylene and polypropylene are used to make the separators for Li-ion batteries that are now on the market. The chemistry of the cell has

been proven to be compatible with these materials, and they can cycle through many hundred times without significantly losing their chemical or physical properties[2]. Polyolefin separators have been around since long before lithium-ion technology was

developed, either as non-woven materials or microporous membranes. They have been and are still used[5]

Commercial Li-ion battery separators were examined for their porosity, pore size, gas permeability, thermal parameters, and shutdown characteristics. Porosity values between 40 and 50% were discovered to be the norm for lithium-ion battery separators[7]. Typically, pore diameters were smaller than 0.1  $\mu$ m. These separators are able to be used because of their low pore size and porosity characteristics. Even at thickness values as low as 25  $\mu$ m, the electrodes are effective at preventing internal shorts between them[6].

In oil and gas industries segregation is required at phase level as it may be 2 phase as liquid and solid or liquid and gas , 3 phase as water, oil, gas , 4 phase as oil, water, gas, solid. so these phases are required to be segregate machine level. Usually these processes are carried out in pressure tanks or vessels shown in fig. 1. The design dimensions according to specific loads withstanding or tolerating gives feasible suitable output good results[8].

The permeability : A straightforward liquid absorption test was used to determine porosity values, and a novel pressure drop approach with Gurley test-like principles was used to measure gas permeabilities. The pressure drop times trend for separators from one manufacturer was found to be consistent with the Gurley numbers provided by the separator manufacturer. The impedance of batteries containing the separators was measured as a function of temperature to examine the shutdown characteristics of the separators[9]. To demonstrate that separator shutdown is a practical strategy for averting thermal runaway scenarios, overcharge tests were also carried out. Trilayer laminates of polypropylene, polyethylene, and polyethylene in particular appear

to offer the most desirable qualities for minimizing thermal runaway in lithium in polyethylene-containing separators.

Inactive stable material a good separator does not have any fires and explosions hazards problems. promoting cycling operations an performance, giving the separators great wettability and thermal resistance up to 150 °C. Importantly, the nano porous separator offers the battery a thermal shutdown capability by being able to seal the holes at a temperature of 125 °C. At ambient temperature, the membrane displays a strong ionic conductivity of 10.1 mS cm<sup>-1</sup> and extremely high electrolyte absorption of up to 50%. It separates the positive and negative electrodes to prevent short-circuit of the battery and also acts as an electrolyte reservoir facilitating metal ion transportation during charging and discharging cycles[1].

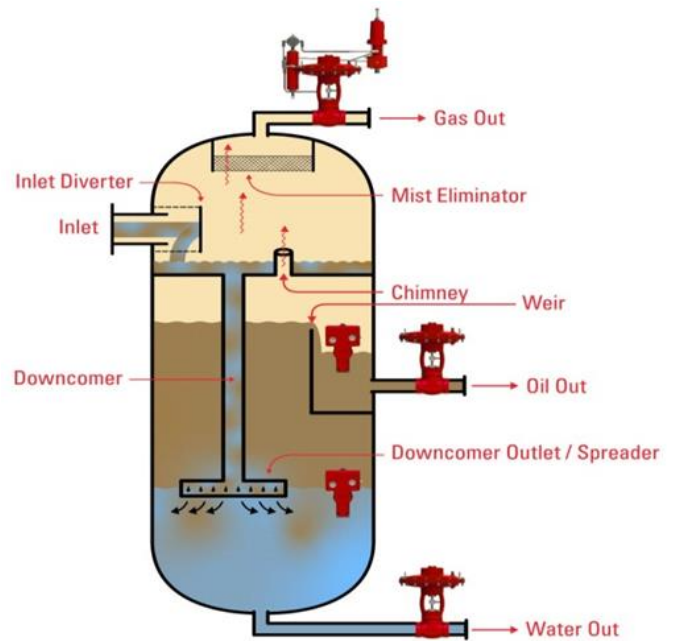


Fig. 1. phase separator in pressure tank or vessel[2]

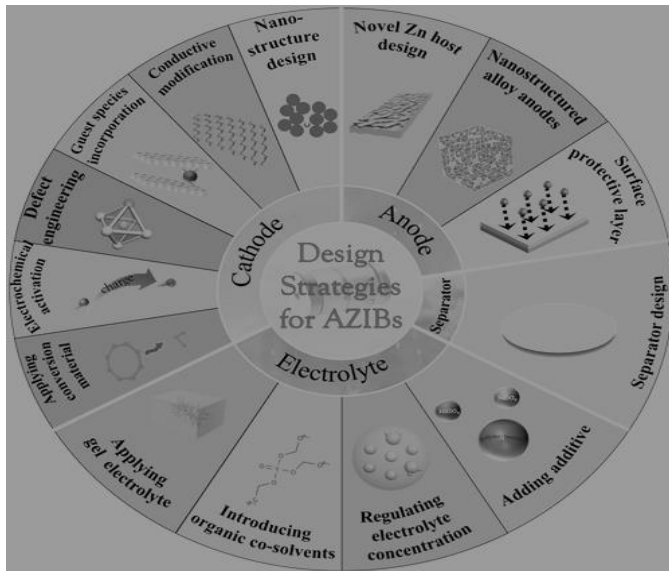


Fig.2. components of battery including separator[5]

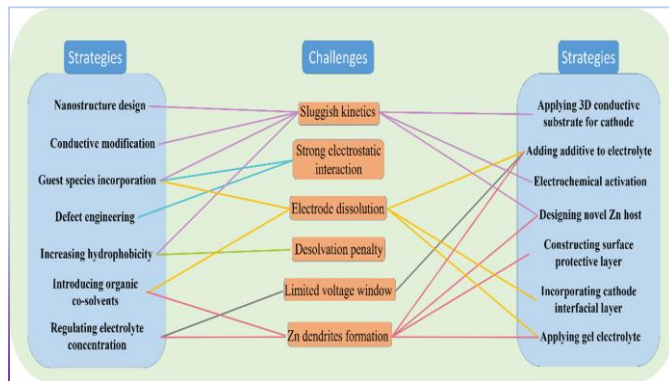


Fig. 3. cathode anode electrolyte function representation[7]

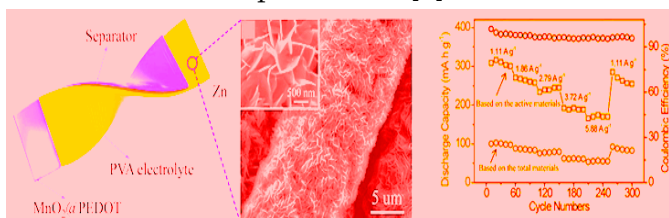


Fig.4 microscopic view of polymer separator[3]

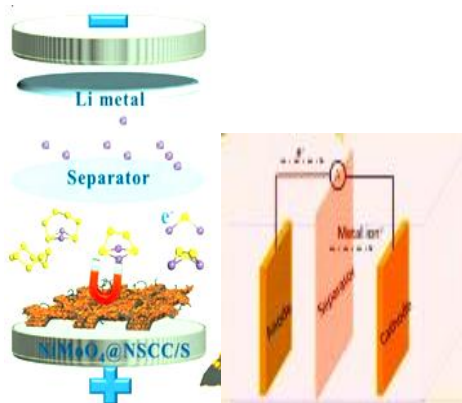


Fig. 5. battery separator[6]

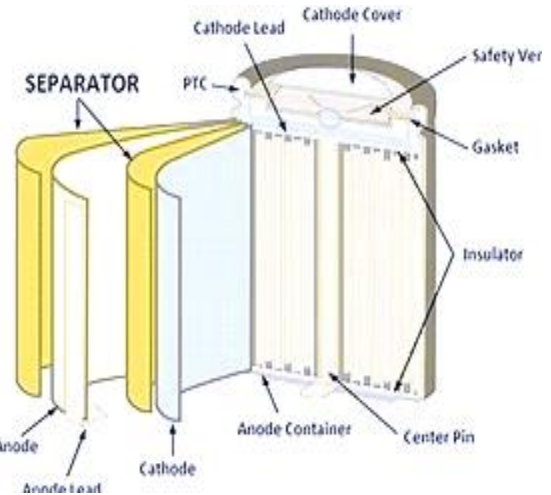


Fig. 6. battery cell separator[9]

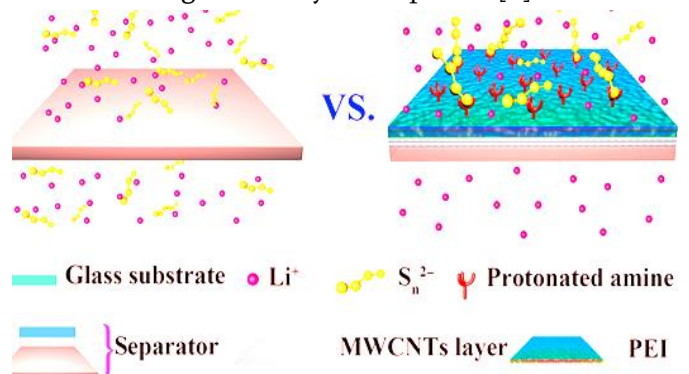


Fig.7. separator in Li battery[12]

The battery equations, mathematical models, concepts hold good from Nernst equation. Further battery life, half cell reactions, charged discharged tests can be best analysed and performance will be carried out. One can manufacture batteries from organic, inorganic ways at redox level condition. Same components as cathode and anode will be there separated from separator which has special function is that only ionic exchange will be taking place usually from micro-porous holes with that one can exchange ions.

Biological concepts of separator: The anatomy of super male internal body nervous system is entirely different from male and female anatomies. Further research study is carried out their capacity in audio video senses organs in decibel ranges. It may be ear capacity in decibel and seeing visual capacity power is

different values from comparing with super male and male. One can gain malefic strength from these super males. The separator strength from super male bodies which is in duality features can donate chromosomes to deficiency persons which boosting male strengths. Thus balancing of malefic nature human body can be gained from super power. The addition deletion of chromosomes can be possible until balancing 23, 23 chromosomes.

The biotechnological equipment as tool for battery worlds as magnetic separator helps to keep two cells apart usually by means of repulsion force created by magnet with that one can achieve separation will be gained from particles those will be magnetized by the help of magnets. there is gradient is created across the membrane which holds as good as separation. For this process a permanent magnet is necessary for whole process separation. The design and capacity in volume can be furthered based on magnetic force required. There will be density gradient as a case of phase change separation is carrying as gas at the upper side, oil as in middle and finally water is in the bottom side will be separation taking place. not only density gradient as difference in quantity which flows higher level to lower level normally or by the aid of external agency reverse gradient also took place.

Long life span of biological organ: There are several sense types of sex which may be single sense multi sense type anyhow those will bring organ contacted male with super bodies results short life span of human life but one can bring loss of that male organ one side and in other side those person super male will be getting extra power in terms of long life span of age getting. Totally these sex organs will have long term life span and will be preserved in several years because of venus planet energy these are in terms of liquid, solid , gases matter existence that is in terms of flowers, fruits, vegetables, grains, cereals, metals, alloys, so all these from energy of venus planet those

are all long life span term period will be preserved . One best example like ghee, alcohol can be preserved in long life, because of venus energy. Here separator plays ionic exchange level and have microporous membrane. In electrical phase neutral wire connection how will be there same concept will be applied over to the human beings life.

## II. CONCLUSION

1. In crude oil separation widely used this concept
2. almost all oil and gas industries it is necessary for adopting this separator
3. multi phase segregation is achieved by separator
4. In batteries as Li-S is widely used polymer based separator
5. In pressure vessel or tanks from oil and gas industries used
6. Human body as chromosomes balancing applicable and holds good results
7. In electrical phase neutral wire connection how will be there same concept will be applied over to the human beings life
8. One best example like ghee, alcohol can be preserved in long life, because of venus energy
9. Totally these sex organs will have long term life span and will be preserved in several years because of venus planet energy these are in terms of liquid, solid , gases matter existence that is in terms of flowers, fruits, vegetables, grains, cereals, metals, alloys
10. Thus balancing of malefic nature human body can be gained from super power. The addition deletion of chromosomes can be possible until balancing 23, 23 chromosomes
11. The energetic food for super males are tandoori aata
12. The addition or deletion of chromosomes pair can be altered or changed depending on requirement or balancing gaining to the human body practically obtained
13. one can regain malefic strength from super bodies

14. There are seeds gender in the form of foods is there from this one can acquire strength depending on persons gender.

### III. REFERENCES

- [1]. Sunte, J. An Elastohydrodynamic Lubrication of Synovial Lubricant on Human Body. IJSRMME, 6(3).
- [2]. Sunte, J. A Pacemaker Solutions to Heart Rhythm. IJSRMME, 6(4).
- [3]. Sunte, J. The Material Failure by Von- Mises's Stress and Resonance Concept. IJSRMME, 6(4).
- [4]. sunte J. Universal CG Role in National and International Level Prediction- IJSRMME, 7(1).
- [5]. sunte J . Role of Photon on Biological Composite Hair for Some Videos Delevering- IJSRMME, 7(1).
- [6]. sunte J. LING Pooja and BHOO MI Pooja in the Universe IJSRMME, 7(1).
- [7]. sunte J. The Controlling Measures and Solution to Problems of Earthquake- IJSRMME, 7(1).
- [8]. sunte J . A Reversible Elastic, Plastic and Fracture Properties for Engineering Materials- 9(12)
- [9]. sunte J . Importance of Carbon, hydrogen, oxygen Prakruti, Jala, Treatment on Human Body. Research and Development in Machine Design, 6(1)
- [10]. sunte J & Sangamesh Sirsgi. (2023). Design of Barrier Stick for Protection of Human Beings. Research and Development in Machine Design, 6(1),
- [11]. sunte J. (2023). The Belly Fat Problem Solving Method and Analysis. Research and Reviews: Journal of Mechanics and Machines, 5(1)
- [12]. sunte J .2023, the balanced human body weight solution from under weight-journal of trauma,orthopedic and urological nursing, 1(1)
- [13]. sunte J. Universal CG Role in National and International Level Prediction- IJSRMME, 7(1).
- [14]. sunte J . Role of Photon on Biological Composite Hair for Some Videos Delevering- IJSRMME, 7(1).
- [15]. sunte J. LING Pooja and BHOO MI Pooja in the Universe IJSRMME, 7(1).
- [16]. sunte J. The Controlling Measures and Solution to Problems of Earthquake- IJSRMME, 7(1).
- [17]. sunte J . The Views, Likes, Share, Downloads, Ratings of Social Media Network- ijsrcseit, 8(4)
- [18]. sunte J . The Problems and Solutions Regarding RF in Absence of Working Internet- ijsrcseit, 9(1)
- [19]. sunte J . A Reversible Elastic, Plastic and Fracture Properties for Engineering Materials- 9(12)
- [20]. sunte J. Importance of salts and sugars in practical life- Advancement in Mechanical Engineering and Technology, 6(1), 1-3
- [21]. sunte J . Importance of Carbon, hydrogen, oxygen Prakruti, Jala, Treatment on Human Body. Research and Development in Machine Design, 6(1)
- [22]. sunte J & Sangamesh Sirsgi. (2023). Design of Barrier Stick for Protection of Human Beings. Research and Development in Machine Design, 6(1),
- [23]. sunte J . (2023). The Fire Solution to Aeroplane Crashes, Failure Reasons for Human Life. Research and Reviews: Journal of Mechanics and Machines, 5(1)
- [24]. sunte J. (2023). The Belly Fat Problem Solving Method and Analysis. Research and Reviews: Journal of Mechanics and Machines, 5(1)
- [25]. sunte J . 2023. The new future trend of zero budget movie film making-advancement of computer technology and its applications, 6(2)
- [26]. sunte J .2023, the balanced human body weight solution from under weight-journal of trauma,orthopedic and urological nursing, 1(1)
- [27]. sunte J . 2022. A Review on Design Considerations for Engineering Materials –IJERT 10(11)

#### Cite this article as :

Jitendra Sunte, "The Separator Importance in Mechanical and Biological Practical Applications", International Journal of Scientific Research in Mechanical and Materials Engineering (IJSRMME), ISSN : 2457-0435, Volume 7 Issue 4, pp. 01-05, July-August 2023.

URL : <https://ijsrmme.com/IJSRMME237213>