

STUDY AND FABRICATION OF S.S. SOLAR CUP

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ABSTRACT

India is now listed in a list of considerable amount of Covid Patients. After such a huge data of vaccination we still have a large number of unvaccinated populations. Mostly the rural poor and BPL community covers that graph, and the reason for that might be the improper supply of vaccines or establishment of vaccination centers. And also lack of knowledge or trust issues with other modes of medications except for Ayurveda. Also, it is said that vaccines are not suitable for various groups of population such as:- Diabetic Persons, Pregnant Ladies or Ladies with new born babies, etc. but as we are aware of that everyone should be vaccinated to resist this deadliest virus. So, for that cause we tried to put on some supporting pillars that will somewhat help these categories of people to survive the duration until they will be fine to be vaccinated. This can be done by increasing their immunity or immune system. So, we think to make a cup which will provide you a herbal tea "Kaadha" keeping in mind conservation of energy. The concept we applied here gives extra stars to our S.S. Solar Cup and that is "Prevention with Conservation". Here to prepare the herbal tea for boiling purpose we used Solar Energy (Renewable Energy) this in turn leads to energy conservation. That's how our project helps in prevention (Herbal Tea) and conservation (Solar panel converts solar energy into electric one and heated up the element which will prepare hot Kaadha). It is not only limited to just herbal tea but also will be a boon in some other medical aspects, as it is always advisable that patients must have hot soups and other eatables, this will be proven as beneficial there as well.

KEYWORDS

Solar Panel, Omicron, Prevention and Conservation.

1. INTRODUCTION

As we know that the branches of Covid are spreading all over the world and it is not hidden that the new variant 'Omicron' is too way more harmful to the human species. Many organizations even looking for solutions and working on precautions for this disease. In the same, we too develop a project i.e. Solar Cup. In India, we people do believe in Ayurveda medication, so keeping that in mind we move on the way. The citizens facing problems in minimizing the effect of variant, how to cure themselves, how to fight or survive in this pandemic etc. The remedies used in the present time are efficient but that efficiency is somewhat less than needed. If we dig into the reason, it might be availability, allopathic approach, costing etc. These approaches help them below their expectations because of financial variations. When we look into the reason of the affected percentage of the population it is because of low immunity level. All the medicines and procedures spreading is of cure from the disease, no one is talking of the prevention. Keeping in mind that "Prevention is better than cure" we think of an innovation that easily provides you with herbal tea to boost up your immune system. The particular slots are provided in the cup which is filled with immune booster herbs, which simply be added to the water while boiling. Here we are keeping in mind the concept of energy conservation so we turned up with a Solar Cup which will boil the water taking the source as Solar Energy.

2. METHODOLOGY

We are making a solar cup that simply works on **renewable energy**. Our innovation provides you with the Herbal Kaadha or tea to boost up immunity system; we had provided slots in the cup which has herbs in it, when heat is provided to the cup all herbs added into the water and we will get our immune booster Kaadha

3. MAJOR FEATURES OF A S.S. SOLAR CUP.

1. Energy Conservation.
2. Prevention from various diseases.
3. Environment Friendly.
4. Low Budget.
5. Boon in Medical Field.

4. LITERATURE SURVEY

- (1) Mohd. Rizwan Sirajuddin Shaikh, Santosh B. Waghmare, Suvarna Shankar Labade, Pooja Vittal Fuke, Anil Tekale, Department of Electrical Engineering, Savitribai Phule Pune University: A Review Paper on Electricity Generation from Solar Energy: Solar Energy is a non-vanishing renewable source produced by the Sunlight and is eco-friendly too. Every hour enough sunlight energy reaches the earth to meet the world's energy demand for a whole year. In today's time, the electricity demand is at every instant with the day begins till it clutches end. This Solar Energy is generated as per applications like industrial, commercial, and residential. It can easily be energy drawn from direct sunlight. So, it is very efficient & free environment pollution for surrounding. In this article, we have reviewed Solar Energy from Sunlight and discussed their future trends and aspects. The article also tries to discuss working, solar panel types; emphasize the various applications and methods to promote the benefits of solar energy. Keywords: Renewable energy, Solar panel, Photovoltaic cell, Modelling of PV Panel, Solar Concrete Collector.[1]
- (2) Shandong Vocational University of Foreign Affairs, Weihai, China: Research on the Impact of COVID19 on Global Economy: With the development of cosmopolitanizing and globalization, dense population and large-scale population flow not only make the economy more integrated but also make the spread of the plague more rapidly. The impact is unprecedented. The outbreak of COVID-19 has disrupted the Chinese economy and is spreading globally. The evolution of the disease and its economic impact is highly uncertain. Because of its high infectivity, high mortality and incubation period, the main preventive measures are to control social distance and isolation, which makes many economic activities impossible. Global GDP will fall by as much as 3%, while developing countries will be the hardest hit, as much as 4% on average, but some were more than 6.5% and world merchandise trade will plummet by 13% in 2020 due to the COVID-19 pandemic. This paper analyzes the macro-economic impact of new coronavirus on the world GDP, merchandise trade (taking China as an example with other countries), and various industries, and proposes some countermeasures.[2]
- (3) Itbar Khan, Lei Han, Hayat Khan and Le Thi Kim Oanh: Analyzing Renewable and Nonrenewable Energy Sources for Environmental Quality: Dynamic Investigation in Developing Countries: Most developing countries are facing environmental degradation challenges as these countries use energy from fossil fuels to enhance economic activities and that leads to environmental degradation. The use of renewable energy is required to mitigate environmental degradation; however, developing countries may not yet have reached the desired level to acquire renewable energy. Developing countries need to make policies to shift from nonrenewable energy to renewable energy use to protect environmental quality. In this regard, the importance of

different energy sources and financial development in enhancing environmental quality in 21 developing countries is examined from 1970 to 2018. The study employed a dynamic estimator, and the results indicate that the sources of renewable energy enhance environmental quality as compared to nonrenewable energy and its sources. Financial development also lowers environmental quality in our results. The study recommends reducing carbon emissions by reducing the use of fossil fuel energy and acquiring new technologies, attracting foreign investors in clean energy that provide clean technologies for green production, and investing in renewable energy sources to evade nonrenewable energy. Policymakers should adopt environmentally-friendly strategies and equipment to protect environmental quality while striving for achieving economic growth.[3]

- (4) Ratheesh P., Rajesh T.G., Jayakrishnan K. and Abhayadev Ashokan: Abhishyanda: the concept behind Ayurveda ophthalmic clinical practice: Abhishyanda is a word widely mentioned in Salaakyantra, the branch of Ayurveda that deals with organs above the neck. The concept of Abhishyanda leads a quintessential role in the diagnosis and management of eye diseases, but the explanation about its physical and perceivable forms needs to be explored. In the clinical management of eye diseases, an Abhishyanda state is treated by considering specific dosha involved. This paper aims to consolidate the theoretical and practical knowledge mentioned in Ayurveda literature regarding the concept of Abhishyanda. Aama, Kleda and Abhishyanda are interrelated. The occurrence of these may be in a sequential manner. In diagnosis and treatment, these sequels are to be considered in addition to dosha analysis.[4]
- (5) Mahaveer Golechha: Time to realize the true potential of Ayurveda against COVID-19: The coronavirus disease 19 (COVID-19) pandemic is unique and unprecedented in several aspects and has challenged health care systems across the globe. The coronavirus pandemic has turned the world's attention to the immune system, the body's defence force against disease-causing bacteria, viruses and other organisms that we touch ingest and inhale every day (Cain, 2020). Alongside investigations into the virology of SARS-CoV-2, understanding the fundamental physiological and immunological processes underlying the clinical manifestations of COVID-19 is vital for the identification and rational design of effective therapies (Tay et al., 2020). Our immune systems will need to adapt unaided to COVID-19 until a potential vaccine is available.[5]
- (6) Lisa Corbin Winslow, MD; David J. Kroll, PhD, Author Affiliations Article Information: Herbs as Medicines: Herbs and related products are commonly used by patients who also seek conventional health care. All physicians, regardless of speciality or interest, care for patients who use products that are neither prescribed nor recommended. Some herbs have been extensively studied, but little is known about others. When a patient asks for advice regarding the use of a particular herb, how should a physician respond? Similarly, how does a physician determine if a patient's symptoms are caused by a "remedy"? This review attempts to answer these questions by investigating pertinent definitions, the history of herbs in medicine, epidemiology and prevalence of herbal use, and relevant psychosocial issues.[6]
- (7) Sumit Das, Ripunjoy Bordoloi, Nishant Newar: A Review on Immune Modulatory Effect of Some Traditional Medicinal Herbs: The Immune System is the most complex biological system in the body. At the time of infection immune system go under the attack of a large number of viruses, bacteria and fungi. The immune system is a part of the body to detect the pathogen by using a specific receptor to produce an immediate response by the activation of immune components cells, cytokines, chemokines and also the release of an inflammatory mediator. They modulate and potentiate the immune system. Medicinal plants impart significant roles in the prevention of human beings from various pathogenic microorganisms and diseases. In nature, various medicinal plants are used as immune modulator agents. Certain medicinal plants are believed to promote positive health and maintain organic resistance against infection by re-establishing body equilibrium and conditioning the body tissues. It is tempting to speculate that the restorative and rejuvenating power of these herbal remedies might be due to their action on the immune system and some of the medicinal plants are believed to enhance the natural resistance of the body to infections. Plant-derived materials (proteins, lectins, polysaccharides, etc.) have been shown to stimulate the immune system. Ayurveda and other Indian literature mention the use of plants in the treatment of various human ailments. Several plants have been reported to have

immune-modulator activity. The present paper reviews plants which have shown experimental and clinical immune-modulator activity[7]

- (8) Tutorial Review on Renewable: Submitted 11 Mar 2009 First published 23 Jun 2009:_The constant increase in global energy demand, together with the awareness of the finite supply of fossil fuels, has brought about an imperious need to take advantage of renewable energy sources. At the same time, concern over CO2 emissions and future rises in the cost of gasoline has boosted technological efforts to make hybrid and electric vehicles available to the general public. Energy storage is a vital issue to be addressed within this scenario, and batteries are certainly a key player. In this tutorial review, the most recent and significant scientific advances in the field of rechargeable batteries, whose performance is dependent on their underlying chemistry, are covered. In view of its utmost current significance and future prospects, special emphasis is given to progress in lithium-based technologies [8].
- (9) Lisa Corbin Winslow, MD; David J. Kroll, PhD, Author Affiliations Article Information: Herbs as Medicines:_Herbs and related products are commonly used by patients who also seek conventional health care. All physicians, regardless of specialty or interest, care for patients who use products that are neither prescribed nor recommended. Some herbs have been extensively studied, but little is known about others. When a patient asks for advice regarding the use of a particular herb, how should a physician respond? Similarly, how does a physician determine if a patient's symptoms are caused by a "remedy"? This review attempts to answer these questions by investigating pertinent definitions, the history of herbs in medicine, epidemiology and prevalence of herbal use, and relevant psychosocial issues.[9]
- (10) SHANKAR MONDAL1, BIJAY R. MIRDHA AND SUSHIL C. MAHAPATRA Departments of Physiology and Microbiology, All India Institute of Medical Sciences: The Science behind Sacredness of Tulsi (Ocimum Sanctum Linn.):_Medicinal properties of Tulsi (Ocimum sanctum Linn) are known for thousand years to various civilizations of the world. This medicinal herb is considered as a sacred plant by the Hindus in the Indian subcontinent. Scientific explorations of traditional belief of medicinal properties of Tulsi have got momentum mostly after the middle of the 20th century. In the present review, efforts have been made to sum up different aspects of scientific studies on this medicinal plant. Scientific evidences are available on various medicinal aspects i.e. antimicrobial, adaptogenic, antidiabetic, hepato-protective, anti-inflammatory, anti-carcinogenic, radio protective, immunomodulatory, neuro-protective, cardio-protective, mosquito repellent etc. to name a few. Most of these evidences are based on in-vitro, experimental and a few human studies.

6. PERSPECTIVE OF THIS SYSTEM

Innovation proving as a boon in present scenario helps in boosting the immunity and does that with the term prevention of natural resources (as Solar Energy is being used here).

The vision of the project is carried as: -

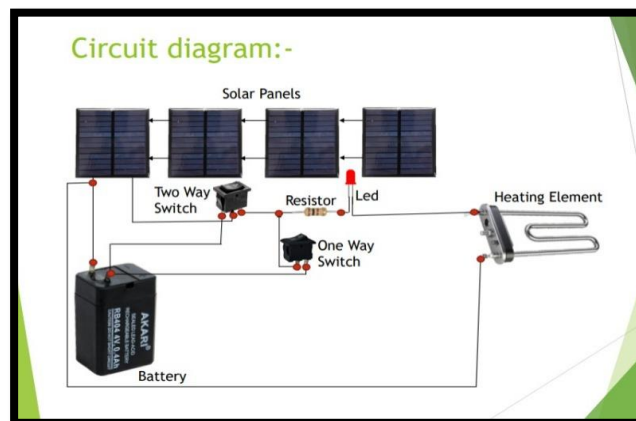


Figure 1: Circuit diagram for the System

7. ENACTMENT OF THE SYSTEM

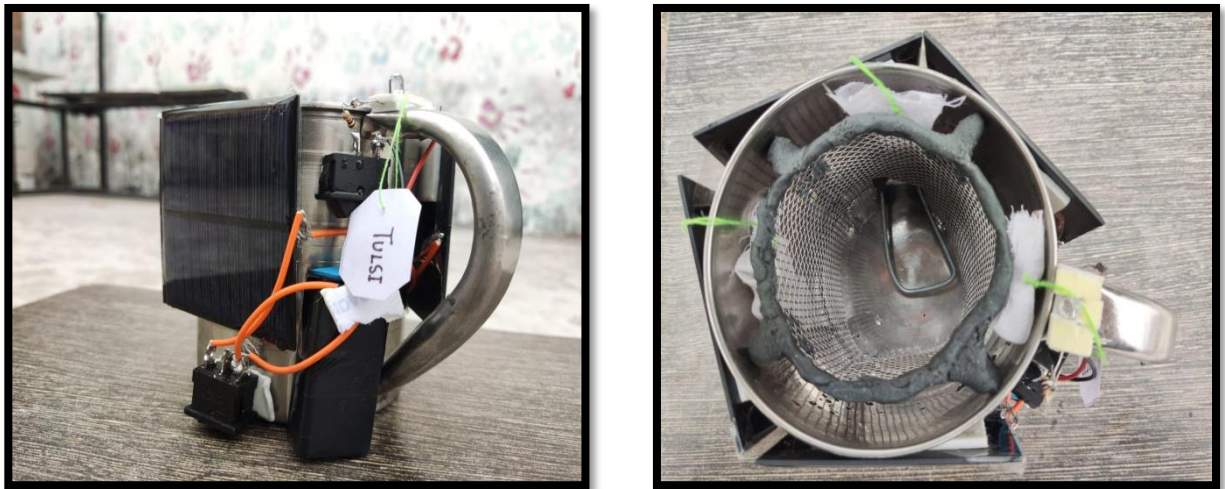


Fig.2 :- Actual Prototype / Implemented Hardware

8. HARDWARE DESCRIPTION

Solar panel -

- Size: 70*70*3 mm square shape
- Panel Material: Glass
- Number of Panels: Five

DC Enhancer-

XL6009E1 module is a non-isolated step-up boost voltage converter featuring adjustable output voltage, high efficiency. It converts the input voltage of 5-32V DC to an output voltage of 4-38V DC.

- Wide input voltage 3V ~ 32V, optimum operating voltage range is 5 ~ 32V;
- Wide Output voltage 5V ~ 35V;
- Built-4A efficient MOSFET switches enable efficiency up to 94%; (LM2577 current is 3A)
- High switching frequency 400 KHz, can use a small-capacity filter capacitor that can achieve very good results, the ripple smaller and smaller.

Power inverter

A power inverter, inverter or inverter is a power electronic device or circuitry that changes direct current (DC) to alternating current (AC), 40W Inverter Circuit Board (12V DC to 220V AC).

Heating Element-

•Nichrome

Nichrome, a non-magnetic 80/20 alloy of nickel and chromium, is the most common resistance wire for heating purposes because it has a high resistivity and resistance to oxidation at high temperatures. When used as a heating element, it is usually wound into coils.

9. CONCLUSION

We aim to make our society ready to face the upcoming challenges. Having strong immunity will lead them to live healthy lives. Being responsible citizens we also try to conserve energy as we had used the renewable energy resource.

ACKNOWLEDGEMENTS

We would like to express our deep gratitude to our honourable **Director Dr. Rohit Garg**, our guide, **Dr Kshitij Singhal**, H.O.D Department of Electronics and Communication Engineering, Moradabad Institute of Technology, Moradabad, for his inspiring guidance, meticulous support, constructive criticism, and valuable gift of time that we have devoted to encouraging us to successfully carry out the project. We are also thankful to **Dr Amit Saxena**, Project Head, Department of Electronics and Communication Engineering, Moradabad Institute of Technology and most importantly Faculty and Staff Members of Electronics and Communication Engineering Department for their advices and help for this project.

REFERENCES

- [1] Mohd. Rizwan Sirajuddin Shaikh, Santosh B. Waghmare, Suvarna Shankar Labade, Pooja Vittal Fuke, Anil Tekale, Department of Electrical Engineering, Savitribai Phule Pune University: A Review Paper on Electricity Generation from Solar Energy
- [2] Shandong Vocational University of Foreign Affairs, Weihai, China: Research on the Impact of COVID19 on Global Economy
- [3] Itbar Khan, Lei Han, Hayat Khan and Le Thi Kim Oanh: Analyzing Renewable and Nonrenewable Energy Sources for Environmental Quality: Dynamic Investigation in Developing Countries
- [4] Ratheesh P., Rajesh T.G., Jayakrishnan K. and Abhayadev Ashokan: Abhishyanda: the concept behind Ayurveda ophthalmic clinical practice
- [5] Mahaveer Golechha: Time to realize the true potential of Ayurveda against COVID-19
- [6] Lisa Corbin Winslow, MD; David J. Kroll, PhD, Author Affiliations Article Information: Herbs as Medicines.
- [7] Sumit Das, Ripunjoy Bordoloi, Nishant Newar: A Review on Immune Modulatory Effect of Some Traditional Medicinal Herbs
- [8] Tutorial Review on Renewable: Submitted 11 Mar 2009 First published 23 Jun 2009
- [9] Lisa Corbin Winslow, MD; David J. Kroll, PhD, Author Affiliations Article Information: Herbs as Medicines
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