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Renewable Energy Its Cause and Effects on Environment

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Short Communication

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INTRODUCTION

Ozone consumption, an Earth-wide temperature boost phenomena and other natural issues energized the utilization of renewable vitality. Exceptional consideration is given to wind vitality in view of its focused capacity [1].

Sun is direct wellspring of all renewable vitality sources. It gives clean and ecologically agreeable vitality. The movement of earth and moon around sun is capable to make waves and tides in sea as active vitality which is changed over into mechanical vitality and subsequently electrical power likewise a renewable wellspring of vitality source [2].

CHARACTERISTICS OF RENEWABLE ENERGY SOURCES

The sunlight based earth water still is a gadget to create refined water, by buildup of dampness in the ground. It is basically a traditional bowl sun oriented still, without a base, set specifically on the ground. The dampness on the surface of the ground gets dissipated at the high surface temperature, achieved by the frequency of daylight; the dampness is supplanted by dissemination from underneath the surface and the encompassing soil [3].

Demonstrating and reenactment of biosorption procedure is exceptionally troublesome as component included in bio sorption courses of action is exceptionally intricate and it includes the communication of more number of procedure variables in a non-direct way. The ordinary established systems don't portray the association impacts of every last one of variables included in biosorption process [4].

A basic, proficient, and plentifully accessible rural waste material, banana pseudo-stem was analyzed as crude material for the extraction of potassium. The impacts of different procedure parameters, for example, temperature, starting pH, contact time, banana pseudo-stem measurements and size of banana pseudo-stem particles on potassium extraction effectiveness were examined by running clump analyzes in Erlenmeyer flagons. Reaction Surface Methodology was utilized to outline the test runs [5].

A straightforward, proficient, and copiously accessible horticultural waste material, banana pseudo-stem was analyzed as crude material for the extraction of potassium. The impacts of different procedure parameters, for example, temperature, starting pH, contact time, banana pseudo-stem measurement and size of banana pseudo-stem particles on potassium extraction productivity were mulled over by running bunch tests in Erlenmeyer jars [6].

Biofuel is the new prerequisite of the worldwide society. The renewable sources have a significant concern of absence of ceaseless supply of vitality to the clients, as the assets are discrete in nature. Biofuel creation strategies broadly change, contingent upon the kind of crude material, proficiency level, generation volume, encompassing circumstance and end-clients prerequisite. Green growths have been in discord as one of the real wellspring of biodiesel in not so distant future [7].

Most encouraging renewable hotspots for power era are wind and sun oriented. The mechanical advancement of both has enhanced consistently all through the most recent two decades or thereabouts. In addition, expenses

have gone down obviously also. It must be conceded that there are still real issues confronting the boundless of renewable vitality advancements or green power as it is called. These incorporate institutional lacks, economy of scale, valuing bends, and constrained data on asset base ^[8].

One of the antiquated, naturally amiable and common routines utilized for cooling is known as Evaporative Cooling frameworks that utilization just water and a blower to circle air. The warm, dry air is pulled through a water-doused cushion. As the water dissipates, a cooling impact on the encompassing air happens. Evaporative Coolers utilize just a small amount of the vitality utilized by conventional ventilating frameworks ^[9].

So as to advance the advancement and utilization of wind vitality, substantially more exertion need to be advanced in the impending years with a specific end goal to defeat the current difficulties identified with the absence of the wind estimation and evaluation of wind asset, absence of human asset, absence of extensive wind vitality advancement arranging, and absence of money related steady component ^[10].

Exergy is an estimation of how far a material veers off from a condition of balance with nature. The vitality estimations of the grain, oat, rye and wheat straws were dead set and the impacts of LHV, dampness substance, and cinder substance, S, C, O, H and N on the exergy of cereal straws were assessed ^[11]. Oat straws are presently utilized as feedstuff, as manure, in the mash and paper industry, for generation of nano-materials and for creation of biofuels

ANALYSIS OF RENEWABLE ENERGY SOURCES

The upstream of the biomass power era is electrical hardware producer and fuel suppliers. Lately, household power hardware market and the biomass fuel business sector have solid business sector power. Suppliers have solid dealing power so they can get a handle on the value and press the net revenues of biomass force era industry from extension to the downstream ^[12].

It is realized that the concoction arrangement of oil shifts as per the atmosphere and territory. *Jatropha* seeds are the principle food stock accessible for biodiesel generation. Additionally, it is high in corrosive, tends to corrupt rapidly, and especially if not took care of appropriately through the production network. In the vicinity of high dampness content, the poly chains of unsaturated fat gets oxidized and free unsaturated fat radicals are produced that break down the oil quality regarding expanded consistency, diminished trans-esterification; lessened vitality proficiency and high erosion to the IC motors ^[13].

A profoundly delicate spectrofluorimetric technique has been produced for the determination of 2-ethylhexyl nitrate in diesel fuel. Typically, this compound is utilized as an added substance as a part of request to enhance cetane number. The explanatory system comprises in building the chemometric model as a first step. At that point, it is conceivable to evaluate the analyte with just recording a solitary excitation-outflow fluorescence range (EEF), whose information is presented in the chemometric model aforementioned. Another critical normal for this strategy is that the fuel test was utilized with no pretreatment for EEF ^[14].

The nourishment security will dependably be one of the significant difficulties over the long haul. Enough water and vitality supply is the preconditions for nourishment security. Notwithstanding, worldwide environmental change has heightened uneven conveyance of water asset in fleeting and spatial scales. Likewise, populace development and watering system increment have made water assets even rare. Consequently, it is incredible direness to scan for advances or pathways to spare water and vitality, and advance their proficient use in extensive scale horticulture territories ^[15].

Slight film photovoltaic frameworks can be introduced in remote and rustic regions to satisfy the fundamental power prerequisites in homes, healing centers and in homesteads for watering system. The expense of power era from meager film formless silicon photovoltaic innovation is pretty nearly equivalent to power era from warm power plants ^[16].

Drying of rural item is one of the essential postharvest operations to spare the grain from postharvest misfortunes. Among the numerous components which influence the rate of drying, the air temperature and air speed are the most imperative and vitality expending elements which make the drying process as a vitality serious operation ^[17].

Sun powered drying innovation makes utilization of renewable sunlight based vitality to dry biosolids in nursery sort establishments. In this kind of establishment, biosolids are stacked and dried in a group or consistent procedure. The nursery serves to catch and contain warmth produced by sun powered radiation. The ventilation framework setup in any biosolids sun based drying unit ought to permit free trade of air between the inside and outside of the

nursery gas unit, so as to guarantee that the air engrossing dampness from the biosolids does not achieve a state of immersion so that the drying procedure keeps on being driven by moistness [18].

The compound business is at present experiencing an ideal model change from the utilization of fossil fills to plants (cellulose) for the creation of fine and mass chemicals. Move from nonrenewable carbon assets to renewable bioresources is unavoidable to meet the developing societal needs. Notwithstanding taking care without bounds societal requests such a move likewise keeps the unfavorable environmental change because of an Earth-wide temperature boost [19].

Store portrayal fuses all the qualities of the supply that are significant to its capacity to store hydrocarbons furthermore to create them. Models for repository portrayal are utilized to propose the conduct of the liquids inside the store under diverse arrangements of circumstance and to locate the best conceivable creation strategies that will amplify the generation [20].

Vitality generation can add to neighborhood environment corruption, for example, air contamination and worldwide ecological issues, primarily environmental change. Practical advancement has been at the focal point of late approaches and improvement arrangements of numerous creating nations. From a worldwide point of view, more than a quarter of the human populace encounters a vitality emergency, particularly those living in the provincial regions of creating nations [21].

Exergy ideas and exergy based routines are connected to vitality frameworks to assess their level of maintainability. Life Cycle Exergy Analysis (LCEA) is a system that consolidates LCA with exergy, and it is connected to sunlight based vitality frameworks. It offers a brilliant visualization of the exergy streams included over the complete life cycle of an item or administration [22].

Drying of fuel with low temperature waste or sun oriented warmth is intends to expand the accessibility of vitality from biomass by expanding the warming quality. Biomass powers contain an extensive group of unstable matter, which is considerably higher than the proximate esteem because of high warming rate in the heater, which builds the piece of fuel discharged as volatiles and decreases the measure of burn [23].

Coal, as a reasonable and effortlessly acquired fossil vitality, assumes a noteworthy part on the planet's vitality portfolio. While, this usage of coal asset brings some ecological issues, for example, corrosive downpour, ozone exhaustion, and the nursery impact. Coal gasification is acting like an alluring choice for coal usage in that it can change over coal into syngas, and taking after create power or blend other substance items, similar to methanol, manufactured regular gas and petrol [24].

Bio Methane is a treatment methodology of the strong and fluid natural, which comprises in corrupting them by a bacterial group working there anaerobes in a domain immersed in water. It shapes then of the biogas and the manure [25].

A warming framework once in a while needs a low temperature source, for example, low-weight steam. The requirement for lower temperature warmth can be supplanted utilizing a warmth pump. A warmth pump is a machine or gadget that moves heat starting with one area then onto the next area mechanically [26].

Microalgae biomass can be utilized to create various quality included items, for example, biodiesel, bioethanol, biogas and bio hydrogen, fish sustain, creature nourish, human nourishment supplements and healthy skin items. Creation of quality included items from microalgae biomass obliges developing and recuperation of the green growth biomass and extraction and downstream transforming of the craved item [27].

In a journey for natural amicable vitality source with minimum toxins outflow because of issues of a dangerous atmospheric deviation coupled with waning store of the fossil fuel, analysts have strengthened study on renewable energizes. Among these renewable vitality sources, biodiesel stands unmistakable. Biodiesel generation is to a great extent by transesterification of transglycerides of unsaturated fats quite often in a group reactor. Of significance in the yield era and unsaturated fat methyl esters change is the feedstock immaculateness, control of reagents use underway and operation parameters adjustment [28].

The popularity for fossil powers, their restricted and unstable supply and their ecological effect provoked the quest for option renewable fuel sources, for example, biodiesel from biomass materials. It is without sulfur, non-harmful and biodegradable. These qualities make it more greener and eco-accommodating than diesel [29].

Dewatering of the oil is utilized for power demineralization establishment including successive three-stage desalting and drying out of substantial unrefined petroleum when it goes through the electrical dehydrators [30].

REFERENCES

1. Charles NOK, et al. Investigation of Some Factors that Lead to Improved Performance vis-a-vis the Efficiency of Single Basin Solar Stills. *Journal of Fundamentals of Renewable Energy and Applications*. 2010;1:6
2. Tiwari GN. Editor Note: Renewable Energy Sources. *J Fundam Renewable Energy Appl*. 2014;4:e102
3. Sodha MS, et al. Solar Earth Water Still for Highly Wet Ground. *J Fundam Renew Energy Appl*. 2014;4:e103
4. Narayana SKV and King P. Modelling and Optimization of Dye Removal Process Using Hybrid Response Surface Methodology and Genetic Algorithm Approach. *J Fundam Renewable Energy Appl*. 2013;4:126.
5. Narayana Saibaba KV, et al. Response Surface Optimization of Potassium Extraction from Waste Banana Pseudo-Stem. *J Fundam Renewable Energy Appl*. 2013;4:127
6. Somwanshi A, et al. Shape Factor for Steady State Heat Transfer between Swimming Pool Water and Surrounding Ground. *J Fundam Renewable Energy Appl*. 2013;4:128.
7. Swain KC. Biofuel Production in India: Potential, Prospectus and Technology. *J Fundam Renewable Energy Appl*. 2014;4:129
8. El-Karmi FZ and Abu-Shikhah NM. Promoting Renewable Energy in Jordan by Employing Economic Incentives. *J Fundam Renewable Energy Appl*. 2014;4:130.
9. Ibrahim H, et al. Approach for Integrating Indirect Evaporative Cooling System into Contemporary Architecture. *J Fundam Renewable Energy Appl*. 2014;4:131.
10. Nguyen DL. A Brief Overview on Assessments of Wind Energy Resource Potential in Vietnam. *J Fundam Renewable Energy Appl*. 2014;4:132.
11. Zhang Y, et al. Influences of Physical and Thermochemical Properties on the Exergy of Cereal Straws. *J Fundam Renewable Energy Appl*. 2014;4:134.
12. Zhao X and Feng T. Dilemma and Strategy of Biomass Power Generation Industry Development in China: A Perspective of Industry Chain. *J Fundam Renewable Energy Appl*. 2014;4:135.
13. Sahay S and Shyam M. Storage Conditions to Improve the Shelf Life of *Jatropha curcas* Seeds in Terms of Quality of Oil. *J Fundam Renewable Energy Appl*. 2014;4:136.
14. Insausti M and Fernández Band BS. Determination of 2-ethylhexyl Nitrate in Diesel Oil Using a Single Excitation Emission Fluorescence Spectra (EEF) and Chemometrics Analysis. *J Fundam Renewable Energy Appl*. 2014;4:137.
15. Qiu GY, et al. Water and Energy Nexus in China: Current Situation and Future Perspective in Energy Industry, Water Industry and Agriculture. *J Fundam Renewable Energy Appl*. 2014;4:138.
16. Lamba R, et al. Life Cycle Cost Assessment and Enviroeconomic Analysis of Thin Film Amorphous Silicon Photovoltaic System. *J Fundam Renewable Energy Appl*. 2014;4:140.
17. Shyam and Tiwari GN. Performance Evaluation of PVT Mixed Mode Dryer with Load Condition. *J Fundam Renewable Energy Appl*. 2014;4:141.
18. Jolis D and Sierra N. Enhanced Biosolids Drying with a Solar Thermal Application . *J Fundam Renewable Energy Appl*. 2014;4:142.
19. Neel Pulidindi I, et al. Isosaccharinic Acid Mediated Fine Chemicals Production from Cellulose. *J Fundam Renewable Energy Appl*. 2014;4:143.
20. Islam SMA, et al. Reservoir Characterization by Investigating the Reservoir Fluid Properties and their Effect on Seismic Response of Fenchuganj Gas Field, Bangladesh. *J Fundam Renewable Energy Appl*. 2014;4:144.
21. Oyedepo SO, et al. Transmission Network Enhancement with Renewable Energy . *J Fundam Renewable Energy Appl*. 2014;5:145.
22. Gong M and Wall G. Life Cycle Exergy Analysis of Solar Energy Systems. *J Fundam Renewable Energy Appl*. 2014;5:146.
23. Saastamoinen J. Release Profile of Volatiles in Fluidised Bed Combustion of Biomass. *J Fundam Renewable Energy Appl*. 2014;5:148.

24. Fan J and Zhu L. A Novel Technique based on Coal Gasification Integrated with Chemical Looping Air Separation. *J Fundam Renewable Energy Appl.* 2014;5:150.
25. Hamissou EA and Oumarou A. Generation of Biogas from Household in Maradi. *J Fundam Renewable Energy Appl.* 2015;5:151.
26. Kralj AK. The Use of Formaldehyde as a Refrigerant in Heat Pumps. *J Fundam Renewable Energy Appl.* 2015;5:152.
27. Al hattab M, et al. Microalgae Harvesting Methods for Industrial Production of Biodiesel: Critical Review and Comparative Analysis. *J Fundam Renewable Energy Appl.* 2015;5:154.
28. Kabbashi NA, et al. Effect of Process Parameters on Yield and Conversion of Jatropha Biodiesel in a Batch Reactor. *J Fundam Renewable Energy Appl.* 2015;5:155
29. Kumar S, et al. Production of Biodiesel from Animal Tallow via Enzymatic Transesterification using the Enzyme Catalyst Ns88001 with Methanol in a Solvent-Free System. *J Fundam Renewable Energy Appl.* 2015;5:156.
30. Boytsova AA, et al. Investigation of the Effect of Ultrasonic Treatment on The High-Viscosity Oil from Yarega Field In Komi Republic (Russian Federation). *J Fundam Renewable Energy Appl.* 2015;5:157.