Key Indicator 3.3- Research Publication and Awards

3.3.1 Number of research papers published per teacher in the Journals notified on UGC website during the last five years

Sr. No.	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		
							Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
1	Energy and exergy studies on the receiver models with materials	Dr. Rajendran Duraisamy Ramalingam	Mechanical Engineering	Environmental Science and Pollution Research	2023	4764–4778	https://doi.org/10.1007/s11356-023-31428-1	https://doi.org/10.1007/s11356-023-31428-1	Yes
2	Redefining agile supply chain practices in the disruptive era: a case study identifying vital dimensions and factors	Dr. ShyamKumar Chaudhary	Mechanical Engineering	Global Supply Chain	2024	2398-5364	https://www.emerald.com/insight/content/doi/10.1108/JGOSS-04-	https://www.emerald.com/insight/content/doi/10.1108/JGOSS-04-	Yes
3	Review Paper on Experimental Investigation on Self Sustainable Building Material Used for Low-Cost Housing	Prof. Pravin Thorat	Civil Engineering	International Journal of Scientific Research in Engineering and Management	2024	2582-3930	https://ijsrem.com/download/review-paper-on-experimental-investigation-on-	https://ijsrem.com/download/review-paper-on-experimental-investigation-on-	Yes
4	Experimental Investigation on Self Sustainable Building Material Used for Low-Cost Housing	Prof. Pravin Thorat	Civil Engineering	International Journal of Science and Social Science Research	2024	2583-7877	https://ijsrem.com/download/review-paper-on-experimental-		Yes
5	Impact of tailing issue in chemical processing unit of textile industry in man made textiles in india	Dr. Sachin Munde	Desh Department	Man Made Text tiles in india	2024		https://www.sasmira.org/publication.html		Yes

Environmental Science and Pollution Research
https://doi.org/10.1007/s11356-023-31428-1

RESEARCH ARTICLE

Energy and exergy studies on the receiver models with materials and heat transfer fluids

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Abstract

This work focuses on meeting the growing demand in solar energy conversion for small-scale applications. In this regard, experimental and CFD research has been done to examine the thermal performance (energy and exergy efficiencies) of a dish collector (reflector and receiver) system with different receiver models. In this work, receivers with uniform absorber cavity areas having cylindrical and hemispherical shapes were modeled for length-to-diameter ratios (L/D) of 1.5, 1, and 0.75. The modeled receivers having coil tube configurations concerning the geometrical shape of the models were tested with two different materials of aluminum and copper. The performance of the receiver models was compared by experimental and CFD methods for the average solar direct normal irradiations of 860 W/m^2 by the dish reflector area of almost 12 m^2. The supplied average heat flux by the dish reflector was 7 kW/m^2 at the absorbing area of the cavity receivers. The energy and exergy efficiencies from the experimental and CFD analyses on the models were determined based on the cavity surface temperature distribution of receiver walls, and heat gain for different mass flow rates by the heat transfer fluid water. The receiver with copper material and L/D ratio of 0.75 has been found as the optimized one among all other models with the maximum obtained energy and exergy efficiencies of 73.64 and 7.31% when water is used as the heat transfer fluid. The performance of the optimized receiver model was also validated with a few other heat transfer fluids such as SiC + water nanofluid and therminol VP1.

Keywords Heat transfer fluids · Receiver geometries · Cavity receiver · Nanofluid · Energy · Exergy

Nomenclature

A_R	Area of the receiver (m^2)
A_{ref}	Area of the reflector (m^2)
T_{atm}	Atmospheric temperature (°C)
c_{av}	Average specific heat capacity (J/kg K)
T_{avg}	Average wall temperature (°C)
DNI	Direct normal irradiation (Wh/m^2)
E_a	Energy focused on the receiver (kWh)
E_R	Energy gained by the receiver (kWh)
T_{in}	Fluid inlet temperature (°C)
$\dot{m}$	Mass flow rate of heat transfer fluid (kg/s)
η_{EnR}	Receiver energy efficiency
η_{ExR}	Receiver exergy efficiency

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Introduction

The existing concentrated solar power (CSP) collectors are focusing on high-temperature applications, where the optimization of design parameters, material selection, and construction of reflectors and receivers are given foremost importance. Development of the reflectors and the receivers is also too expensive from the economical viewpoint; hence, in

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Redefining agile supply chain practices in the disruptive era: a case study identifying vital dimensions and factors

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Abstract

Purpose – This paper aims to uncover the key enablers of an agile supply chain in the manufacturing sector amidst disruptions such as pandemics, trade wars and cross-border challenges. The study aims to assess the applicability of existing literature to manufacturing and identify additional industry-specific enablers contributing to the field of supply chain management.

Design/methodology/approach – The research methodology is comprehensively described, detailing the utilization of extent literature and semistructured interviews with mid- and top-level executives in a supply chain. The authors ensure the robustness of the data collection process and results interpretation.

Findings – The study identifies six essential dimensions of an agile supply chain: information availability, design robustness, external resource planning, quickness and speed, public policy influencing skills and cash flow management. The study provides valuable insights for industry professionals to develop agile supply chains capable of responding to disruptions in a rapidly changing world.

Research limitations/implications – This study is limited by its focus on the manufacturing sector, and future research may explore the applicability of these findings to other industries. By focusing on these essential dimensions identified in the study, managers can develop strategies to improve the agility and responsiveness of their supply chains. In addition, further research may investigate how these enablers may vary in different regions or contexts.

Practical implications – The COVID-19 pandemic has forced executives to reconsider their sourcing strategies and reduce dependence on suppliers from specific geographies. To ensure business continuity, companies should assess the risk associated with their suppliers and develop a business continuity plan that includes multisourcing their strategic materials. Digital transformation will revolutionize the supply chain industry, allowing for end-to-end visibility, real time insights and seamless integration of business and processes. Companies should also focus on creating a collaborative workforce ecosystem that prioritizes worker health and well-being. Maintaining trust with stakeholders is crucial, and firms must revisit their relationship management strategies. Finally, to maintain business leadership and competitiveness during volatile periods, the product portfolio needs to be diversified and marketing and sales teams must work in tandem with product teams to position new products accordingly.

Social implications – This work contributes substantially to the literature on supply chain agility (SCA) by adding several new factors. The findings result in a more efficient and cost-effective supply chain during a stable situation and high service levels in a volatile situation. A less complex methodology for understanding SCA provides factors with a more straightforward method for identifying well-springs of related drivers. First, the study contributes to reestablish the factors such as quickness, responsiveness, competency, flexibility,

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Review Paper on Experimental Investigation on Self SustainableBuilding Material Used for Low-Cost Housing

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Abstract:

The global challenge of providing adequate housing for burgeoning populations, especially in economically disadvantaged regions, necessitates innovative approaches to construction. This study presents an experimental investigation into the feasibility and effectiveness of self-sustainable materials for low-cost housing solutions. By leveraging sustainable materials, this research aims to address the dual challenges of affordability and environmental impact in housing construction.

The study employs a combination of quantitative analysis and qualitative assessment to evaluate the performance of various self-sustainable materials in the context of low-cost housing. These materials encompass a range of options including recycled materials, locally sourced natural resources, and innovative composites designed for affordability, durability, and eco-friendliness.

Key parameters examined include structural integrity, thermal insulation properties, moisture resistance, and overall environmental footprint.

Experimental methodologies include laboratory testing, field trials, and computational modelling to comprehensively assess the suitability of the selected materials for low-cost housing applications. Findings from this investigation contribute valuable insights into the viability of self-sustainable materials for addressing housing challenges in resource-constrained communities. The results not only inform the development of cost-effective housing solutions but also underscore the importance of sustainable practices in mitigating environmental impacts associated with construction activities.

Ultimately, this research endeavours to bridge the gap between sustainable materials innovation and practical implementation, offering tangible pathways towards the realization of affordable, eco-friendly housing solutions for communities worldwide.

Keyword: sustainable material , low-cost housing, eco-friendly,

Experimental Investigation on Self Sustainable Building Material Used for Low-Cost Housing

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Abstract—The pursuit of sustainable housing solutions, particularly for low-income communities, remains a critical challenge worldwide. In response, this study investigates the viability of self-sustainable building materials for low-cost housing. The research explores novel materials and techniques that aim to minimize environmental impact, reduce construction costs, and enhance the durability and efficiency of housing units. Using a combination of experimental analysis and field assessments, various self-sustainable building materials were evaluated for their structural integrity, thermal performance, and environmental sustainability. Key factors such as material composition, manufacturing processes, and long-term performance were scrutinized to determine their suitability for low-cost housing applications. The findings highlight promising advancements in the development of self-sustainable building materials, including recycled aggregates, natural fibers, and alternative binders. These materials demonstrate potential in providing affordable housing solutions while mitigating the environmental footprint associated with traditional construction practices. Moreover, the study assesses the economic feasibility and scalability of adopting self-sustainable building materials in low-cost housing projects. By comparing the costs and benefits of alternative materials, insights are gained into the potential challenges and opportunities for widespread adoption within the construction industry. Overall, this research contributes to the ongoing discourse on sustainable housing by presenting empirical evidence of self-sustainable building materials' efficacy in addressing the housing needs of low-income communities. The findings underscore the importance of innovation and collaboration in creating affordable, eco-friendly housing solutions that prioritize social equity and environmental stewardship.

Keyword: sustainable material, low-cost hous- ing, eco-friendly

I. INTRODUCTION

The global challenge of providing adequate housing for low-income communities necessitates innovative approaches that balance affordability, sustainability, and quality. Traditional construction materials and methods often pose significant barriers due to their high costs, environmental impact, and limited availability in resource-constrained regions. In response, there is a growing interest in exploring self-sustainable building materials as a viable alternative for low-cost housing initiatives. Self-sustainable building materials encompass a diverse range of innovative solutions designed to minimize resource consumption, reduce carbon emissions, and enhance building performance over their lifecycle. These materials leverage principles of circular economy, renewable resources, and low-impact manufacturing processes to address the complex challenges associated with affordable housing provision.

This study seeks to investigate the feasibility and efficacy of self-sustainable building materials specifically tailored for low-cost housing applications. By conducting experimental investigations, the research aims to evaluate the structural, thermal, and environmental performance of these materials in real-world scenarios. Key objectives include:

Impact of tailing issue in chemical processing unit of textile industry

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Abstract

In the textile processing industry, there are many problems during the process, out of them staining is also a very big issue. This stain problem occurs due to the D-graded and wasted fabric of about 18000 to 20000 meters per month. It is the most important factor in reducing this staining problem in the chemical processing department. Several precautions to prevent this problem have been discussed in this paper. Different types of stains were collected with detailed information. Based on the data of their sources, studied were conducted to correct stains by using some remedies. The stains are caused by majorly three things viz., machines, the concentration of chemicals and unskilled workers. Taking precautions measures and remedial actions, the stain was majorly reduced and the resulting the fabric was less wasted. It means the production rate of fabric somewhat increased, and the amount of reprocessing (RP Cost) was saved.

Key Words: Staining, Inspection department, Reprocessing, D-graded fabric

Introduction

The term or phrase "tailing" is referring to the progressive loss of dye concentration in the pad liquor throughout in continuous process. The shade gradually loses strength and becomes lighter or paler than the surrounding material. When the condition becomes critical at the time of applied depth is smaller and the dye substantivity is higher, the tailing effect is more noticeable. It has also been noticeable if the constituent dyes in a trichromatic combination vary considerably in substance because it appears as a gradual change in hue. In this process reactive dyes, altering dyeing equipment and procedures, chemically altering cotton fibre before dying, and utilising biodegradable organic compounds in effluent treatment procedures, it is possible to increase the sustainability of the dyeing process [1]. In accordance with the laboratory pad, stock tank, and pad liquor formulations must also be meticulously considered. The shade produced by bulk-scale running may be considerably paler or off-shade in comparison to the lab result, whereas the shade produced by lab-scale padding is like the shade of the first few meters dyed in bulk. To ensure that the pad liquor at equilibrium produces the desired shade on the finished goods. The cost-effectiveness of the dyeing process and strategies that assist