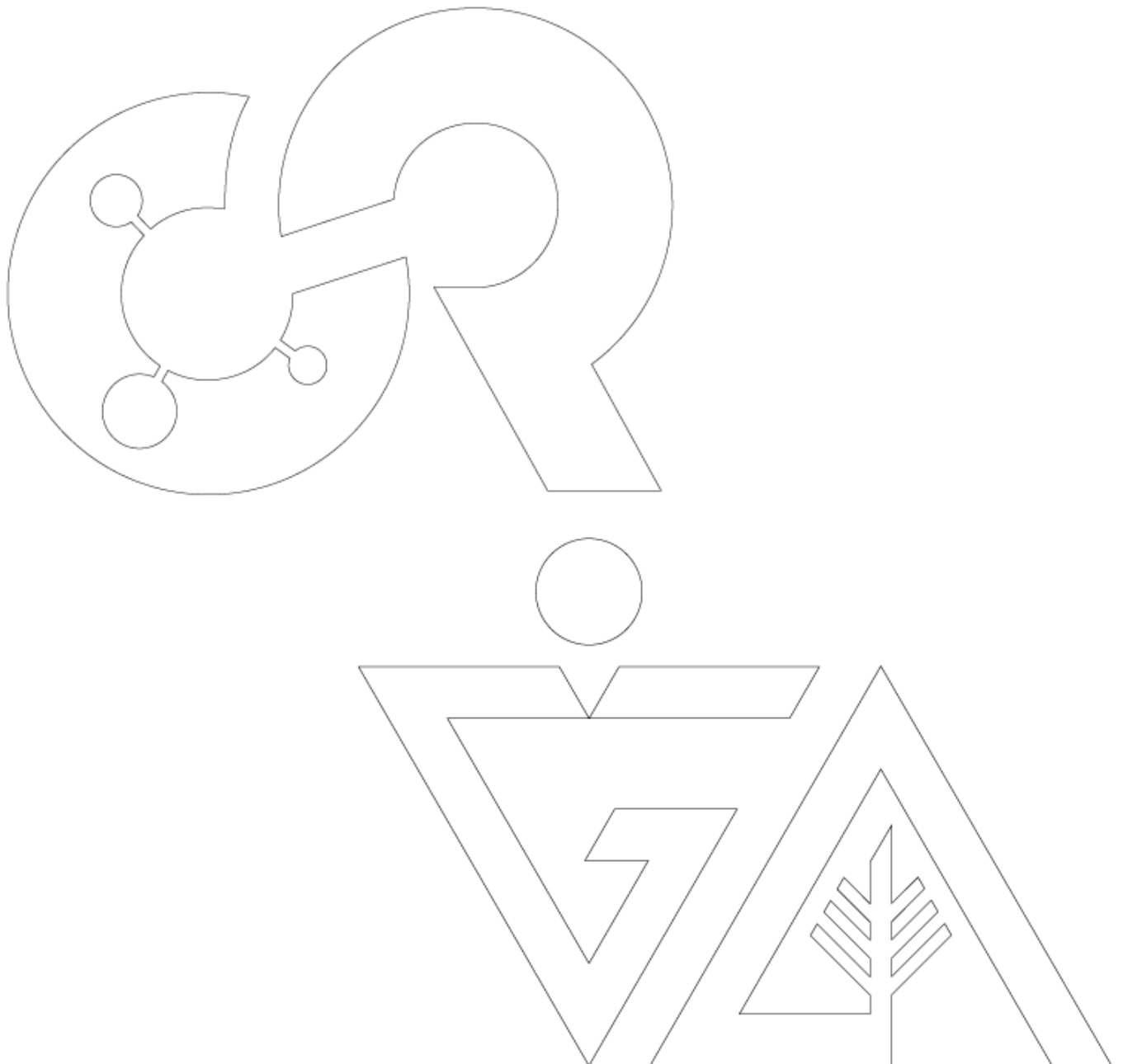

EVERGREEN

Volume.10

Issue.01 March 2023

Joint Journal of
Novel Carbon Resource Sciences & Green Asia Strategy



Editorial Board for
Evergreen – Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy

Editor-in-Chief

Jun Tanimoto

Executive Editor

Kyaw Thu

Subject Editors

Andrew Mark Spring, Osama Eljamal, Hiroshi Furuno, Michitaka Ohtaki, Jin Miyawaki

Kiichi Hamamoto, Naoji Yamamoto

Regional Editors

Nasruddin, Agung Tri Wijayanta, Muhammad Sultan

Secretary

Mieko Inoue

Honorary Advisor

Bidyut Baran Saha

Editorial Board

Akira Harata, Aya Hagishima, Kazuhide Ito

Evergreen – Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy
Volume 10 Issue 1 (March 2023)

Published by

Transdisciplinary Research and Education Center for Green Technologies, Kyushu University

6-1 Kasuga-koen, Kasuga, Fukuoka 816-8580 Japan

Tel: +81-92-583-7823

Fax: +81-92-583-8909

Journal Website: http://www.tj.kyushu-u.ac.jp/leading/en/c_publication/evergreen.php

E-mail: evergreen@ga.kyushu-u.ac.jp

Copyright: 2023 by

Transdisciplinary Research and Education Center for Green Technologies, Kyushu University

All rights reserved. ISSN: 2189-0420 (Print) ISSN: 2432-5953 (Online)

Evergreen

Joint Journal of Novel Carbon Resource Sciences & Green Asia Strategy

Volume 10, Issue 01, March 2023

CONTENTS

Mir Shariful Islam, K M Ariful Kabir, Md. Shariful Islam, Bidyut Baran Saha The Perception of Consumers Towards Microalgae as an Alternative Food Resource in Bangladesh: A Contingent Valuation Approach	1
Minakshi Kar, Neha Bothra Pandemic and Indian Education: Evolving Perspectives from Higher Education	18
Nailya Moldakhanova, Sayat Alimkulov, Zhanibek Smagulov Analysis of Changes in the Ecological Space of the Ili River Delta (due to Reduced Flow of the Ili River)	29
Lalit Kumar Sharma, Manoj Kumar Sain, Makkhan Lal Meena, and Govind Sharan Dangayach An Investigation of Ergonomic Risk for Work-Related Musculoskeletal Disorders with Hand-Held Drilling	36
Veronica Ordonez, Haci Baykara, Ariel Riofrio, Mauricio Cornejo, Ricardo Rodríguez Preparation and Characterization of Ecuadorian Bamboo Fiber-Low-Density Polyethylene (LDPE) Biocomposites	43
Dipak S. Patil, M. M. Bhoomkar Investigation on Mechanical Behaviour of Fiber-Reinforced Advanced Polymer Composite Materials	55
Naveen Kumar Yadav, Nitesh Singh Rajput, Shweta kulshreshtha, Manoj Kumar Gupta Investigation of the Mechanical and Wear Properties of Epoxy Resin Composite (ERCs) Made With Nano Particle TiO₂ and Cotton Fiber Reinforcement	63
Harsh Kumar, Vikas Kumar, Dinesh Kumar, Satnam Singh Wear Behavior of Friction Stir Processed Copper-Cerium Oxide Surface Composites	78
Atmanto Heru Wibowo, Husen Al Arraf, Abu Masykur, Fitria Rahmawati, Maulidan Firdaus, Felix Pasila, Ulya Farahdina, and Nasori Nasori Composite of Polyaniline/Reduced Graphene Oxide with The Single-, Bi- and Tri-metal Oxides Modification and the Effect on the Capacitance Properties	85
Dinesh Kumar, Satnam Singh, Surjit Angra Morphology and Corrosion Behavior of Stir-Cast Al6061-CeO₂ Nanocomposite Immersed in NaCl and H₂So₄ Solutions	94

Pardeep Kumar, Vipin Sharma, Dinesh Kumar, Shalom Akhai Morphology and Mechanical Behavior of Friction Stirred Aluminum Surface Composite Reinforced with Graphene	105
Murni Awi, Ahmad Sufian Abdullah A Review on Mechanical Properties and Response of Fibre Metal Laminate under Impact Loading (Experiment)	111
Anil K C, Kumaraswamy, Mahadeva Reddy, Mamatha K M Air Jet Erosion studies on Aluminum - Red Mud Composites using Taguchi Design.	130
Hendri Widiyandari, Yahya Ayash, Muhammad Shalahuddin Al Ja'farawy, Agus Subagio, Wahyu Bambang Widayatno Synthesis of WO₃/Pt Nanoparticle by Microwave-assisted Sol-gel Method for Enhanced Photocatalytic Property in Visible Light	139
Heru Suryanto, Uun Yanuhar, Ahmad Atif Fikri and Gunanti Mahasri <i>Chlorella vulgaris</i>-Mediated Nanosilver Synthesis with Chitosan Capping Agent	146
Arif Budianto, Arinto Yudi Ponco Wardoyo, Masruroh, Hari Arief Dharmawan, Kasnawi Al Hadi, Laili Mardiana Graphene Oxide-Coated Quartz Crystal Microbalance for Bioparticle Detection (A Case Study for <i>Bacillus sp.</i>)	155
Ashish Kumar, Dipti Bharti, Navneet Kumar, Mamta Mishra Exploration of <i>in vitro</i> Antiherpetic Activity of Coumarin-sulphonamide Derivative against Genital Herpes	162
Dinesh Kumar Saini, Chandrashekara M Experimental Investigation of Stearic Acid in the Thermal Battery Comprising a Fin and Tube Heat Exchanger	170
Shivasheesh Kaushik, Vipin Uniyal, Ajay Kumar Verma, Abhishek Kumar Jha, Sumit Joshi, Mahesh Makhloga, Pankaj Singh Pargai, Saurabh Kumar Sharma, Raja Kumar, Siddharth Pal Comparative Experimental and CFD Analysis of Fluid Flow Attributes in Mini Channel with Hybrid CuO+ZnO+H₂O Nano Fluid and (H₂O) Base Fluid	182
Neeru, Nitesh Singh Rajput, Arun Patil Reducing Oil Leakage in Heavy Duty Transformers Made in Small-Scale Manufacturing Industry Through Six Sigma DMAIC: A Case Study for Jaipur	196
Ardhya Fadhila Pachman, Djamel Hisein Didane, Wijianto, Mohanad Al-Ghriybah, Nurul Fitriah Nasir, Sami Al-Alimi, Bukhari Manshoor A Study of Global Solar Radiations Measurement in Java Island, Indonesia	212
Ruan Li, Mohamed Karma, Changhong Hu Two-Dimensional VIV Simulation of a Cylinder Close to a Wall with High Reynolds Number by Overset Mesh	219

Indri Yaningsih, Dominicus Danardono Dwi Prija Tjahjana, Eko Prasetya Budiana, Mohamad Muqoffa, Zainal Arifin, Suyitno, Koji Enoki, Takahiko Miyazaki Numerical study on the Effect of Rectangular and Triangular Counter-Rotating Vortex Generators on the H-Rotor Wind Turbine Performance	230
Muhammad Nuriyadi, Nandy Putra, M.I. Alhamid, Arnas Lubis, Nasruddin Performance Enhancement of Electric Bus Air Conditioning System by Heat Pipe Equipment (Experimental Study)	242
Gulshan Sachdeva, Bharat Sharma, Parinam Anuradha, Sameer Verma Irreversibility Analysis of an Ejector Refrigeration Cycle by Modified Gouy-Stodola Formulation	252
Mirza Hanif Al Falah, Tri Retnaningsih Soeprbowati, Hadiyanto Hadiyanto, Aulia Rahim, Barra Madini Noor, Nur Permatasari Diatom Stratigraphy as a Flood Record in the Lower Tuntang River, Demak, Central Java	272
K. Sujatha, NPG. Bhavani, VictoSudha George, T.Kalpatha Reddy, N. Kanya and A. Ganesan Innovation in Agriculture Industry by Automated Sorting of Rice Grains	283
Hemant Kumar Chaudhary, Kartikeya Saraswat, Harshita Yadav, Hrithik Puri, Asha Rani Mishra, Sansar Singh Chauhan A Real Time Dynamic Approach for Management of Vehicle Generated Traffic	289
Alibek Yussupov, Raya Z. Suleimenova Use of Remote Sensing Data for Environmental Monitoring of Desertification	300
Pinku Ranjan, Swati Yadav, Harshit Gupta, Amit Bage Design and Development of Machine Learning Assisted Cylindrical Dielectric Resonator Antenna	308
Sumit Chaudhary, Pardeep Kumar, Sonia Dangi Performance Study of Mustard Oil Bio-diesel Blend in a Single Cylinder 4-stroke Diesel Engine♦	317
Roop Singh Sinsinwar, Munna Verma Analysis of pH Value of Water for Treatment Plant of Kekri and Surajpura (Rajasthan) India♦	324
Gokul Raj R, J V Muruga Lal Jeyan A Review on Advancements and Characteristics of Cryogenic Propulsion Rocket Engine♦	329
Nidhi Priya, P.Kour, S.K.Pradhan, K.K.Senapati Quantum Computing using Superconducting Qubits: A Review♦	340
Jaswinder Singh, Prateek Srivastava, Deepam Goyal Study of Biomass Torrefaction Fundamentals and Properties♦	348

Komal Madan, Omendra Kumar Singh Second Law-Based Assessment of Combined Cycle Power Plant◆	..... 356
Smriti Mishra, Abhishek Yadav, Prashant Bhardwaj An Experimental Analysis of Natural Heat Transfer between Rectangular Solid and Perforated Fins Having Different Perforation Characteristics◆	..... 366
Akhila Rupesh Experimental Investigation of Conical Flow Meter for Truth-Flow Analysis of Wind Tunnel◆	..... 372
Janpriy Sharma, Mohit Tyagi, Arvind Bhardwaj, Ravinderjit Singh Walia Factors Assessment for Encumbering the Implementation of Sustainability Based Lean Six Sigma Practices in Food Supply Chain◆	..... 379
Somesh Agarwal, Mohit Tyagi, R. K. Garg Circular Economy Reinforcement to Diminish GHG Emissions: A grey DEMATEL Approach◆	..... 389
Manoj Kumar Gupta Simulating the Fluid Flow via Ceiling Diffuser Using OpenFOAM◆	..... 404
Dhawan Singh, Abinash Singh Role of Building Automation Technology in Creating a Smart and Sustainable Built Environment◆	..... 412
Mohit Kalsia, Ankit Sharma, Rajneesh Kaushik, Raja Sekhar Dondapati Evaporative Cooling Technologies: Conceptual Review Study◆	..... 421
Ruchi Sharma, Gurcharan Singh, Ashutosh Pandey, Shiv Kumar Sharma An Economic Inventory Model Comparing Stock Dependent and Fixed Demand for Random Machine Breakdown, Repair Time and Deterioration◆	..... 430
Manpreet Kaur, Nisha Mittal, Abhishek Charak, Amrit Pal Toor, Vasundhara Singh Rice Husk derived Activated Carbon for the Adsorption of Scarlet RR an Anionic Disperse Dye◆	..... 438
Kamesh Verma, Om Prakash, A.S. Paikra, Piyush Tiwari Photovoltaic Panel Integration Using Phase Change Material (PCM): Review◆	..... 444
Jayesh Nagpal, Roop Lal, Ramakant Rana Novel Robotic Platform for Affordable and Customizable Testing and Prototyping◆	..... 454
Piyush Sikka, Rishabh Arora, Prabhsharan Singh, Monsoon Behl, Rakesh Chander Saini, Ramakant Rana Suspension and Steering Setup for a 4-wheel All-terrain Vehicle◆	..... 463

Catur Harsito, Mufti Reza Aulia Putra, Daniel Aquino Purba, Teguh Triyono Mini Review of Thermoelectric and their Potential Applications as Coolant in Electric Vehicles to Improve System Efficiency★	469
Yuli Setyo Indartono, Aditya Muhammad Nur, Ameirza Divanto, Aura Adiyani Design and Testing of Thermosiphon Passive Cooling System to Increase Efficiency of Floating Photovoltaic Array★	480
Boby Rusdyanto, Fitriani Imaduddin, Ubaidillah, Dody Ariawan The Tensile Properties of Recycled Polypropylene Filament (rPP) as 3D Printing Material★	489
Bayu Anggara, Eko Prasetya Budiana, Catur Harsito, Koji Enoki, Kim Ki-Seong, Indri Yaningsih, Dominicus Danardono Dwi Prija Tjahjana Performance Improvement of H-Darrieus Wind Turbine with High Efficiency Vortex Structure Attachment★	496
Denny Widhiyanuriyawan, Zainal Arifin, Abyan Muwaffaq, Suyitno Suyitno, Syamsul Hadi, Singgih Dwi Prasetyo, and Bayu Sutanto The Effect of Electrospinning Precursor Flow Rate with Rotating Collector on ZnO Nanofiber Size Results on Double-Layered DSSC Photoanode Fabrication★	504
Danar Agus Susanto, Mokhamad Suf and Putu Dana Karningsih Level of Implementation of GMP and SSOP in SMEs Wet Noodle Production Process with Gap Analysis Tools★	510
Dandun Mahesa Prabowoputra, Aditya Rio Prabowo, Indri Yaningsih, Dominicus Danardono Dwi Prija Tjahjana, Fajar Budi Laksono, Ristiyanto Adiputra, Hendri Suryanto Effect of Blade Angle and Number on the Performance of Bánki Hydro-Turbines: Assessment using CFD and FDA Approaches★	519
Muhammad Reza Kusuma Wardana, Wahyudi Sutopo, Yuniaristanto, Muhammad Hisjam A Game Theory Model of Salt Price Stabilization Using Warehouse Receipt System★	531
Joko Waluyo, Muhammad Muadz Setianto, Nadiya Rizki Safitri, Sunu Herwi Pranolo, Ari Diana Susanti, Margono, Paryanto Characterization of Biochar Briquettes from Coconut Shell with the Effect of Binder: Molasses, Cow Manure and Horse Manure★	539
Fadilah, Sperisa Distantina, Ari Diana Susanti, Elisa Fitriyani, and Anastasia Devina Damayanti Microencapsulation of Rice Bran Oil by Complex Coacervation Using Chitosan – k-carrageenan: Influence of Glutaraldehyde and Tween 20★	546
Meilinda Ayundyahrini, Danar Agus Susanto, Hermawan Febriansyah, Fariz Maulana Rizanulhaq, and Gama Hafizh Aditya Smart Farming: Integrated Solar Water Pumping Irrigation System in Thailand★	553

Ari Prasetyo, Muhamad Dwi Septiyanto, Eki Rovianto, Syamsul Hadi, Eko Prasetya Budiana, Dominicus Danardono Dwi Prija Tjahjana, Indri Yaningsih Investigation of Blade Modifications to Enhance Savonius Water Turbine Performance Through Vertical Pipe Flow★	..... 564
Jaka Sulistya Budi, Ubaidillah, Aditya Rio Prabowo, Ardi Esdiyanto, Zainal Arifin, Zilmy Efis Priyatama Numerical Analysis of Bifilar Coil Geometry on Induction Heating Performance for Self-healing Asphalt★	..... 574
Rabi K Ahmad, Shaharin A Sulaiman, M Amin B A Majid, Suzana Yusuf, Sharul S Dol, Muddasser Inayat, Hadiza A Umar Assessing the Technical and Environmental Potential of Coconut Shell Biomass: Experimental Study through Pyrolysis and Gasification▼	..... 585
Ahmed T Raheem, A Rashid A Aziz, Saiful A Zulkifli, Abdulrazak T Rahem, Wasiu B Ayandotun, Salah M Elfakki, Masri bin Baharom, and Ezrann Z Zainal Combustion Characteristics of a Free Piston Engine Linear Generator using Various Fuel Injection Durations▼	..... 594
Rabiahatul Zulkafli, Norinsan Kamil Othman, Najmiddin Yaakob, Fathul Karim Sahrani, M.S.H Al-Furjan Electrochemical Studies of Microbiologically Influenced Corrosion on API 5L X65 by Sulfate-Reducing Bacteria in CO₂ Environments▼	..... 601
Mohamad Hafizi Zakria, Amirah Jaafar, Mohd Ghazali Mohd Nawawi, Mohd Rizal Abdul Rahman Propylene Yield Assessment utilizing Response Surface Methodology for Naphtha Pyrolysis Cracking▼	..... 608

◆ 2nd International Conference On Industrial And Manufacturing Systems(CIMS2021NIT)

★ The 7th International Conference on Industrial, Mechanical, Electrical and Chemical Engineering (ICIMECE 2021)

▼ The 7th International Conference on Production, Energy and Reliability (ICPER2020)