



Contents

Malaysian Journal of Chemistry
Volume 28(3), 2026

Converting Waste Paper into Functional Advanced Carbon Materials for the Circular Economy: A Systematic Review and Bibliometric Analysis Farihahusnah Hussin* and Shajaratuldur Ismail	1
Influence of BaSO₄ Microfiller on Mechanical, Dynamic, and Interfacial Behavior of Banana/Sisal Hybrid Epoxy Composites for Automobile Application Parthipan, K. *, Pazhanivel, K., Muthukumar, K., Vijayakumar, S., Prakash, K. B., Tamilarasan, V. D. and Vignesh Kumar, S.	11
From Boron to Borophene: Experimental Insights into 2D Material Synthesis and Characterization Zaed, M. A. *, Tan, K. H. * and Saidur, R.	21
Nano-Curcumin as a Green Additive for Algae Biodiesel: Experimental Insights into Diesel Engine Combustion and Emission Performance Ramesh, C. *, Dhamodharan, N., Velmurugan, S., Ramachandra Raju, K. , Subramaniyan Chinnasamy, Prakash, K. B. and Arul. M.	26
Thermogravimetric Characteristic of <i>Spirulina platensis</i> for Production of Bio-oil by using Subcritical Hydrothermal Liquefaction Noor Shahirah Shamsul and Nabila A. Karim*	38
Nanoparticle-Engineered Solar PV Cells: A Comprehensive Review on Performance Enhancement Subramaniyan Chinnasamy*, Ponmurugan, M., Rajasubramanian, V., Vinod, J., Navaneeth, B. S., Muthukumar, K. and Ramachandra Raju, K.	48
Volumetric Interaction Mechanisms in 2-Ethylhexylamine–DMSO Mixtures for CO₂ Capture: Experimental Excess Molar Volume Analysis and COSMO-RS Modelling Mohd Azlan Kassim*, Abdul Azim Abdul Manam and Rozita Yusoff	61

Effect of Hydrogen Enrichment and Titanium Dioxide Nanoparticles on Diesel Engines Running on Pyrolysis-Derived Plastic Oil	70
Ramesh, C. *, Sasikumar, C., Arul. M. , Poyyathappan, K., Dinesh, S., Harish, S. and Naveen Kumar, G.	
Carbon Emission in Supply Chain: A Comprehensive Bibliometric Analysis	81
Deepak Chandola, Mukul Jain, Mukesh Kumar* and Neha Rani	
Water Quality Evaluation of the Himalayan Lake through Chemometric, Indexical, and Multivariate Statistical Approach: A Case Study	100
Sunaina Alok, Kishan Singh Rawat* and Sudhir Kumar Singh	
Synthesis and Performance of Green Synthesized CuO Nanoparticles for Degradation of Noxious Bromocresol Green	112
Shilpi, Avantika, Anamika and Shivam Pandey*	
Comparative Phytochemical Profiling and Study on Biological Activities of Leaves, Seeds, and Stem of <i>Clitoria ternatea</i>	126
Nishesh Sharma*, Jerin James, Anshika Saroj, Smriti Mishra, Florence Remruadiki and Nitin Pandey	
Graphene–Yb₂O₃ Nanocomposites for Enhanced Photocatalytic and Electrochemical Properties using Data-Driven Analysis	141
Kusum, Nitu Sehrawat and Srishti Vashishtha*	
Green Chemistry (GC) for Sustainable Development Goals (SDGs)	151
Anil Kumar and Ruchi Sharma*	
Compositional and Thermal Impacts on the Thermophysical Performance of Acetophenone and Ethyl 2-Methylbutyrate using Computational Modeling	161
Bhavika, Nitu Sehrawat, Srishti Vashishtha* and Hardika Sharma	
Eco-Friendly Oxygen Bleaching of <i>Anthocephalus indicus</i> Pulp for the Reduction of Chemical Consumption and Pollutant Generation	173
Rakesh Dhoundiyal, Bhawana Bisht*, Neetu Sharma, Reetika Bagauli, Promila Sharma, Anupriya Adhikari and Shweta Bisht	
Effect of Ce₂O₃-Based ETL for High-Efficiency Lead-Free Perovskites	178
Abid Iqbal, Syed M. Hasnain*, Irfan Qasim, Amin Mir, M. and Ercan Bursal	
Sustainable Algae-Mediated Production of the Copper Oxide Nanoparticles: Progress, Prospects, and Environmental Applications	186
Disha Agarwal, Shreyoshi Sarkar, Poonam Negi, Harish Chandra Joshi, Waseem Ahmad* and Shalini Upadhyay	

Fluorescent Nanoprobes for Selective Detection of Toxic Pollutants	203
Shalini Tiwari, Priyanshi Gupta, Richa Saxena*, Poonam Negi, Rawat, B. S.*, Badrish Badoni and Kunwar Singh	
Sol-Gel Synthesis of Metal Oxides and their Comparison	212
Neha Bhatt, Adeeba Mirza and Abhilasha Mishra*	
Biosynthesis of Silver Nanoparticles using Aqueous Extract of Waste <i>Kigelia africana</i> Flowers and their Photocatalytic Degradation of Dyes from Polluted Water	224
Lakshya, Amanpreet Kaur*, Utkarsh Tyagi, Neha Bhatt, Neelaxi Pandey, Pankaj Singh Rawat and Man Vir Singh	
Heavy Metal Contamination in Agricultural Soil and Ground Water Paonta Sahib	234
Yashveer Kumar and Anupama Sharma*	
Green Synthesized γ-Fe₂O₃/Carrageenan Nanocomposites from <i>K. alvarezii</i> for Photocatalytic Degradation and Anti-oxidant Potential	250
Jerin James, Nishesh Sharma*, Tafadzwa Joel Chanetsa, Lakshit Singh Supyal, Himani Badoni and Harish Chandra Joshi	
Micro Plastics as Critical Micro Pollutants in Green Chemistry for Sustainable Environmental Protection	267
Anil Kumar and Bhavika*	
Simulation-Based Investigation of Tunable Luminescence and Optical Behavior of Polycarbazole-Based Metal Oxide Nanocomposites SnO₂ and TiO₂	274
Manish V. Patel, Divyanshi Mangla, Vandana Yadav and Niharika*	
Recent Advances and Integrative Approaches in Biochemical Research Methodologies: A Short Review	283
Vibha Joshi*, Vishwajeet Bachhar*, Manisha Duseja and Rajesh Haldhar	