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MONTHLY APPRECIATION
SEPTEMBER -2025

CIRCULAR

Sir CV Raman Research Council, Office of Joint Registrar (Research), is happy to appreciate the staff members who have made due efforts to publish their papers in WOS & SCOPUS Indexed Publications, which are updated in September 2025. We are also pleased to announce the “STAR FIRST AUTHOR”, “STAR CO-AUTHOR” and “STAR RESEARCH SCHOLAR / STUDENT” of SEPTEMBER 2025.

	STARFIRSTAUTHOR (FA-CATEGORY)	Ms. NAVEEDUNISSA SYED SAFIULLAH (PHARMACY)	
	STARCO-AUTHOR (CA-CATEGORY)	Dr. RAJSHREE CHOUDHARY (RRMCH)	
	STAR RESEARCH SCHOLAR/ STUDENT	Ms. SRIVIDHYA SANTHIS (FOCA) GUIDE : DR.R.SHOBARANI Addl. HoD - AI	

The details of the author's publications are listed herewith, reference to MGR Research Engine @ <http://drmgrdu.researgence.com>

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	CLINICAL UTILITY OF RETICULOCYTE HAEMOGLOBIN CONTENT (CHR) AS AN EARLY MARKER IN THE DIAGNOSIS OF IRON DEFICIENCY ANAEMIA: A CASE-CONTROL STUDY.		 Dr.RAJSHREE CHOUDHARY (RRMCH)
AUTHORS	SHOUBHIK PATRA RAJSHREE CHOUDHARY MANISH KUMAR SONI DEEPAI SINGH		
JOURNALNAME	INDIAN JOURNAL OF APPLIED RESEARCH		
SNIP-3.548	IMPACTFACTOR-15.2	INDEXED- SCOPUS/WOS	

ABSTRACT

Iron Deficiency Anaemia (IDA) remains one of the leading causes of morbidity among women of reproductive age worldwide. Early identification of iron deficiency is vital for effective intervention. Conventional biomarkers such as serum ferritin and transferrin saturation are often influenced by inflammation and other systemic conditions, limiting their reliability. Reticulocyte Haemoglobin Content (CHr), which reflects immediate iron availability for erythropoiesis, has gained attention as a potential early diagnostic marker. This is an observational case-control study conducted from January 2024 to July 2025 in Medical college associated hospital. A total of 200 adult female participants were enrolled, comprising 100 confirmed IDA cases and 100 age-matched healthy controls. Blood samples were analyzed for CHr, CBC using Sysmex XN 1000 automated analyzers and serum ferritin was measured using Atellica CI 1900. Result: IDA cases have significantly lower Hb, CHr, and ferritin. CHr correlated strongly with Hb and ferritin. ROC analysis (AUC 0.92, sensitivity 91%, specificity 89%) confirmed CHr's excellent accuracy for early IDA detection. Descriptive and inferential statistics were computed using SPSS. CHr serves as a sensitive, early marker for IDA and Conclusion: has potential utility in routine screening protocols, especially in settings with limited resources

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	TAILORED NICKEL-BISMUTH PHOSPHATE COMPOSITES VIA MICROWAVE-ASSISTED SYNTHESIS FOR ENHANCED ELECTROCHEMICAL PERFORMANCE IN SUPERCAPACITORS	
AUTHORS	K PAVITHRA RAJESH V. PAULRAJ P CHITHRA LEKHA N. BALAGOWTHAM L MARINI	
JOURNALNAME	JOURNAL OF POWER SOURCES	
SNIP - NIL	IMPACTFACTOR - 7.9	INDEXED- SCOPUS/WOS



Dr.P CHITHRA LEKHA
(PHYSICS/
VIRGINIA TECH)

ABSTRACT

Nickel–bismuth phosphate (NBP) composites were explored as promising electrode materials for supercapacitor applications. Among the compositions studied, the NBP1 sample exhibited the most enhanced performance. Structural and morphological evaluations confirmed a well-defined crystalline framework, strong internal bonding, and a rod-like morphology with high nanoscale uniformity, all of which contributed to rapid charge transport. The presence of distinct lattice fringes indicated high crystallinity, while surface chemical analysis revealed electroactive species and stable oxidation states, supporting efficient redox reactions. In addition, the material demonstrated a high specific surface area and mesoporous structure, which enabled improved ion diffusion and electrolyte accessibility. In three electrode system, the NBP1 electrode delivered a specific capacity of 550 C g^{−1} at a current density of 1 A g^{−1} in alkaline medium. A symmetric device fabricated using NBP1 electrodes achieved an energy density of 34.16 Wh kg^{−1} and a power density of 820 W kg^{−1}, while maintaining 86 % of its initial capacitance over 10,000 cycles. These results highlight the potential of NBP1 as an efficient and durable electrode material for high-performance supercapacitor systems

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	ADVANCES IN CHITOSAN BASED NANOCARRIERS FOR TARGETTED WOUND HEALING THERAPIES: A REVIEW		 Ms.NAVEEDUNISSA SYED SAFIULLAH (PHARMACY)
AUTHORS	NAVEEDUNISSA SYED SAFIULLAH., MEENALOTCHANI R., MANISHA M., ANKUL SINGH SURESH PRATAP SINGH., S NIRENJEN., K ANITHA., HARIKRISHNAN N., BHUPENDRA G PRAJAPATI		
JOURNALNAME	CARBOHYDRATE POLYMER TECHNOLOGIES AND APPLICATIONS		
SNIP- NIL	IMPACTFACTOR - 6.5	INDEXED- SCOPUS/WOS	

ABSTRACT

Wound healing is a critical physiological process essential for restoring tissue integrity and function. Chronic wounds, often characterized by prolonged inflammation, infection, and impaired tissue regeneration, pose significant challenges to global healthcare systems. Chitosan, a naturally derived polymer, has gained attention for its biocompatibility, biodegradability, and inherent antimicrobial properties. Incorporating chitosan into nanoparticle systems enhances its therapeutic potential by enabling controlled drug release, targeted delivery, and improved stability of bioactive agents. Chitosan nanoparticles (CSNPs) exhibit unique properties such as antimicrobial activity, facilitation of hemostasis, and immune modulation, collectively promoting wound healing. This review highlights the various techniques used for chitosan nanoparticle preparation, including ionic gelation, polyelectrolyte complexation, and emulsification-solvent diffusion, emphasizing their impact on encapsulation efficiency and drug release profiles. Additionally, advancements in surface modification strategies, such as PEGylation and ligand functionalization, have improved nanoparticle targeting capabilities. Despite their immense potential, challenges related to scalability, regulatory frameworks, and translational gaps remain significant barriers to widespread adoption. Future efforts should focus on overcoming these barriers to enable clinical translation and maximize therapeutic impact

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	BACTERIAL TOXINS AS IMMUNOMODULATORY AGENTS IN CANCER THERAPY		
AUTHORS	KANTROL KUMAR SAHU SALEEMBASHA NAGOOR GANI MADHULIKA PRADHAN SUCHETA AKHILESH DUBEY KRISHNA YADAV		
JOURNALNAME	BIOCHEMICAL PHARMACOLOGY		
SNIP-1.236	IMPACTFACTOR - 5.6	INDEXED- SCOPUS/WOS	

Mr.SALEEM BASHA NAGOOR GANI (PHARMACY)

**Mr.SALEEM BASHA
NAGOOR GANI
(PHARMACY)**

ABSTRACT

Bacterial toxins have emerged as promising anticancer therapeutics, transforming from pathogenic agents to precision treatment modalities. They provide exceptional specificity for cancer cells while largely leaving healthy tissue unaffected, which solves one of the major limitations of traditional chemotherapy. This review explores the emerging trends of bacterial-derived immunotoxins and chimeric toxins for target specificity and their promise as future anticancer therapies. It defines the potential of bacterial toxins as anticancer agents through an immunomodular design using the targeting moieties of antibodies, affibodies, antimicrobial peptides (AMPs), and cytokines. Further, this encompasses current drug delivery applications of bacterial toxins and bacterial extracellular vesicles in cancer-targeted therapy and clinical translation challenges. This review represents a systematic approach by describing bacterial toxin-based immunotherapy as a new paradigm shift for the useful employment of bacterial components in precision oncology

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	NEURAL NETWORK-ASSISTED CARBON NANOTUBE ELECTROCHEMICAL SENSORS FOR AUTOMATED ENVIRONMENTAL RISK ASSESSMENT		
AUTHORS	CHAKRAVARTHY V J THONTADARI C BASAVARAJ G N SOWNDHARYA R ARAVINDAN N SANGEETHA VARADHAN		
JOURNALNAME	MICROCHEMICAL JOURNAL		
SNIP- 1.006	IMPACTFACTOR - 5.1	INDEXED- WOS/SCOPUS	
			Dr.CHAKRAVARTHY V J (FOCA)

ABSTRACT

The current research proposes an intelligent network system that continuously tracks the quality of water flow, with particular attention to pollutants frequently occurring in runoff water from agricultural practices. It deploys high-performance electrochemical sensors based on carbon nanotubes (CNT) combined with a small neural network that functions directly on the built-in microcontroller. It is deployed on floating buoys powered by solar energy, where it can detect some critical contaminants in the rural water bodies, including nitrates, phosphates, atrazine, cadmium, and lead. The sensors work by transmitting their electrical signals through the sensors to the neural network, which provides precise identification of the level of pollutants as one of three risk levels: safe (below detection levels), manageable (within regulatory levels), and hazardous (exceeding regulations). Regarding power performance, results can be delivered over a relatively small-time delay (1.2 milliseconds per reading) and with low memory usage (1.8 MB), making it ideal for remote and low-powered sensors. It is more accurate (93.6 %) than typical machine learning models. Should pollutants exceed the above-prescribed limits, an automated warning will be generated, and the information will be immediately uploaded to a cloud-based dashboard. The dashboard will be closely monitored via remote control, and trend analysis will be conducted. By eliminating the need for manual water sampling, the system offers a scalable and energy-saving method for autonomous environmental testing, particularly in inaccessible locations. In the future, the study will focus on the use of federated learning, a technique that retains data locally to protect privacy, enabling more intelligent and collaborative conclusions across sensor networks. This prepares the ground for more intelligent and secure environmental surveillance systems in the future.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	THERMOELECTRIC PERFORMANCE OF BA3CO2O6(CO3)0.6 NANOPARTICLE SYNTHESIZED BY SOL–GEL METHOD		Ms. PAPITHA PURUSHOTHAMAN (CSE)
AUTHORS	FAREENPOORNIMA RAFIQ MAGADEVI NIRNAL KUMAR PAPITHA PURUSHOTHAMAN PARTHIPAN GOVINDSAMY		
JOURNALNAME	JOURNAL OF INORGANIC AND ORGANOMETALLIC POLYMERS AND MATERIALS		
SNIP- NIL	IMPACTFACTOR - 4.9	INDEXED- SCOPUS/WOS	

ABSTRACT

A successful method that can be utilized to convert thermal energy to electrical energy is thermoelectric energy conversion. Since the structuration at the nanoscale materials may improve the transport properties, we provide the thermoelectric characteristics of a nanostructured powder sample, Ba₃Co₂O₆(CO₃)_{0.6} fabricated by the sol–gel method with a lesser annealing time. The thermoelectric properties, electrical conductivity, Seebeck coefficient, and power factor between 300 and 900 K in air and thermal conductivity at room temperature were studied and connected to their phase compositions and microstructures. The increase of electrical conductivity with temperature affirms the semiconducting behavior of the synthesized sample and the positive Seebeck coefficient's increase with temperature, maximum of 107μVK^{−1} at 549 K suggests the conduction mechanism with holes as charge carriers. Additionally, the calculated power factor values, though increasing with conductivity in the present case, are too low (1.3 10^{−5} Wm^{−1} K^{−2} at 746 K) to be taken into consideration for real-world applications and it can be concluded that doping can enhance the thermoelectric characteristics of the sample. The figure of merit of the synthesized sample, Ba₃Co₂O₆(CO₃)_{0.6} is found to be 6.8 × 10^{−8} K^{−1}, which is lesser than the earlier reported data and can become a potential thermoelectric material with a suitable doping strategy of Barium or Cobalt site. Keywords. Carrier concentration, Mobility, Seebeck coefficient, Grain boundary, Figure of merit

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	SYNTHESIS OF FUNCTIONALIZED QUINAZOLINES AND QUINAZOLINONES: A THEORETICAL AND EXPERIMENTAL INVESTIGATION OF PHOTOPHYSICAL PROPERTIES AND BIOLOGICAL ACTIVITIES		 2023/9/2 09:29 DR .KANNAYIRAM GOMATHI (BIOTECH)
AUTHORS	SUNDARARAJAN SURESH, PREDHANEKAR MOHAMED IMRAN, MURALIPOORNIMAA, KANNAYIRAMGOMATHI , RADHAKRISHNANVIDYA, RAMALINGAMRAJASEKARAN, FAZLUR RAHMAN NAWAZ KHAN		
JOURNALNAME	JOURNAL OF MOLECULAR STRUCTURE		
SNIP- NIL	IMPACTFACTOR - 4.7	INDEXED- SCOPUS/WOS	

**DR .KANNAYIRAM
GOMATHI
(BIOTECH)**

ABSTRACT

An efficient strategy has been developed for the metal-free synthesis of functionalized quinazolines and quinazolinones via C(sp³)-H functionalization. The protocol offers several advantages, including mild reaction conditions, broad substrate scope, excellent functional group tolerance, and the avoidance of metal catalysts. The synthetic utility was further demonstrated through gram-scale synthesis of functionalized quinazoline/quinazolinone derivatives, followed by diversification via Michael addition and spiroannulation reactions. The resulting compounds were comprehensively characterised for their photophysical properties and investigated through theoretical analyses, including the evaluation of quantum chemical parameters. Biological screening of the synthesized styryl derivatives revealed notable anti-inflammatory and anticancer activities, underscoring their potential pharmacological relevance. Density Functional Theory (DFT) and Time-Dependent DFT (TD-DFT) calculations at the B3LYP/6–31G(d) level provided detailed insights into their electronic structures, offering a theoretical basis for understanding their reactivity and bioactivity

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	BIOCL–CUO NANOCOMPOSITE AS A BIFUNCTIONAL MATERIAL FOR GLUCOSE DETECTION AND ENERGY STORAGE		 Dr.KAVITHA ESAKIMUTHU (PHYSICS)
AUTHORS	ANNIECANISIUS D, JOSELENE SUZAN JENNIFER P, GLADYS JOYSI M, MUTHUPANDI S, KAVITHA ESAKIMUTHU , MADHAVAN J, VICTOR ANTONY RAJ M		
JOURNALNAME	RESULTS IN CHEMISTRY		
SNIP- NIL	IMPACTFACTOR - 4.2	INDEXED- SCOPUS/WOS	

ABSTRACT

A BiOCl–CuO (BCC) nanocomposite was synthesized via a solvothermal method and characterized for its dual electrochemical applications in glucose sensing and supercapacitors. High-resolution scanning electron microscopy (HR-SEM) revealed a nanosphere morphology, while electrochemical impedance spectroscopy (EIS) and Brunauer–Emmett–Teller (BET) analysis demonstrated a low charge transfer resistance (6.95 Ω) and a high specific surface area (124.5 m²/g), respectively. The synergistic interaction between BiOCl and CuO enhanced glucose adsorption and oxidation, yielding a sensitivity of 0.718 mA mM^{–1} cm^{–2} and a detection limit of 0.48 mM, as determined by chronoamperometry. In supercapacitor applications, BCC exhibited superior electrochemical performance compared to pure BiOCl, with a higher specific capacitance of 684.92 Fg^{–1}, prolonged discharge time, and excellent cycling stability. These findings highlight the potential of BCC as a multifunctional material for high-performance glucose sensors and energy storage devices.

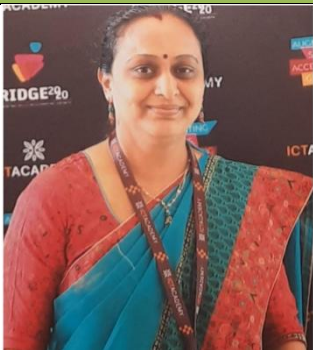
Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	FLEXIBLE SCREEN-PRINTED GRAPHENE OXIDE-BASED BIOSENSOR FOR SWEAT SODIUM DETECTION		
AUTHORS	L MARINI, P CHITHRA LEKHA, ROOP L MAHAJAN T DEVASENA		
JOURNALNAME	CURRENT APPLIED PHYSICS		
SNIP- 0.7	IMPACTFACTOR –3.1	INDEXED- SCOPUS/WOS	
			Dr.P CHITHRA LEKHA (PHYSICS)

ABSTRACT

Sweat contains valuable biomarkers indicative of physiological health conditions such as electrolyte imbalance, stress, and disease, enabling continuous, non-invasive monitoring through miniaturized wearable electrochemical biosensors. Here, a flexible, cost-effective electrochemical sweat Na⁺ ion sensor is fabricated using a screen-printing method on a flexible polyethylene terephthalate (PET) substrate. The sensor incorporates a low-cost Ion-Selective Layer (ISL) and graphene oxide (GO) enhancing sensitivity and electrochemical performance across a broad range of Na⁺ ions. The sensor exhibits a high sensitivity of 1.213 mA/mM.cm², low limit detection of 14.49 mM, and good stability. Real-time sweat analysis demonstrated Na⁺ ion levels of 19 mM in the morning and 23 mM in the evening aligning with the analytical range of Na⁺ ion concentration in sweat. This work addresses challenges in precision and individual variability in Na⁺ ion concentration highlighting the potential of scalable, affordable sensors in wearables technology for personalized health monitoring.

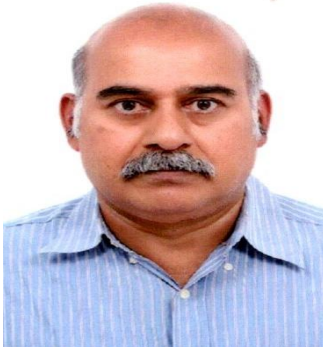
Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	ECO-FRIENDLY AIR POLLUTION CONTROL WITH BIODEGRADABLE FILTERS USING GLASS WOOL, ACTIVATED CARBON, COCONUT FIBRE AND GRASS		 Dr.NATARAJAN JAYA CHITRA
AUTHORS	SOWJANYA MADIREDDI, J SAI MANIDHAR, NATARAJAN JAYA CHITRA , PRABHU PARAMASIVAM, MOHAMED YUSUF		
JOURNALNAME	AEROSOL AND AIR QUALITY RESEARCH		
SNIP-0.672	IMPACTFACTOR –2.5	INDEXED- SCOPUS/WOS	

ABSTRACT

Pollution in the atmosphere leads to severe health-related diseases in living beings. The source of air pollution includes engines, factories, and mining leading to pollutants like CO, CO₂, HC, and NO_x along with dust and soot. Investigators have been working on reducing air pollution using different materials, however, the disposal of these filter materials upon usage in turn leads to pollution of the soil or water. In the present work, bio-degradable materials glass wool, coconut fiber, grass, and activated carbon have been tested and compared for their ability to reduce air pollution. The source of pollution shows that the CO and CO₂ emissions have been observed high for low compression ratios, whereas HC emissions have been found high for higher compression ratios and Nox emissions high at medium compression ratios. For a compression ratio (CR) of 2.5, glass wool is more efficient than other filter materials. For CR. of 3.5, glass wool and coconut fiber have been observed as more efficient than other filter materials. For a CR of 4.67, grass has been more efficient than other filter materials in reducing CO, CO₂, HC and NO_x pollutants. Grass has been observed as the most efficient in reducing the NO_x content for compression ratios 2.5 and 3.5. Coconut fiber has been effective in reducing NO_x for a 4.67 compression ratio.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	REPLY TO "LETTER TO THE EDITOR: COMMENTS ON GENDER DIFFERENCES IN ACUTE HEART FAILURE STUDY"		
AUTHORS	JAYAGOPAL P B C N MANJUNATH P R VAIDYANATHAN SOMA SEKHAR GHANTA MANOKAR P RAGHU T R RABIN CHAKRABORTY SHANTANU SENGUPTA		
JOURNALNAME	INTERNATIONAL JOURNAL OF CARDIOLOGY CARDIOVASCULAR RISK AND PREVENTION		
SNIP- NIL	IMPACTFACTOR - 2.1	INDEXED- SCOPUS/WOS	

Dr.RAGHU T R
(RRMCH)

**Dr.RAGHU T R
(RRMCH)**

ABSTRACT

We read with great interest the article “Gender Differences in Acute Heart Failure Study” and commend the authors for addressing the important issue of sex-based variations in the presentation and outcomes of acute heart failure. The study provides valuable insights into demographic characteristics, clinical profiles, treatment patterns, and prognostic outcomes among male and female patients. However, several aspects merit further discussion. Differences in age distribution, comorbidity burden, heart failure phenotype, and socioeconomic factors may have influenced the observed gender-specific outcomes. Additionally, variations in healthcare access, treatment adherence, and risk factor profiles could contribute to disparities in prognosis. We also highlight the need for more detailed subgroup analyses and consideration of potential confounding variables to strengthen the interpretation of the findings. A clearer understanding of biological and social determinants underlying gender differences in acute heart failure is essential for developing personalized management strategies and improving patient outcomes. We appreciate the authors’ contribution to this important field and hope that these comments will encourage further research into sex-specific approaches to heart failure care.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	DENTAL IMAGE SEGMENTATION FOR CARRIER DETECTION USING IMPROVED MLP-UNET MODEL IN DENTAL X-RAY IMAGES	
AUTHORS	SRIVIDHYA SANTHI,S R SHOBA RANI	
JOURNALNAME	INTERNATIONAL JOURNAL OF INTELLIGENT ENGINEERING INFORMATICS	
SNIP-NIL	IMPACTFACTOR - 1.6	INDEXED- SCOPUS/WOS



Ms. S.SRIVIDHYA
SANTHI

ABSTRACT

Dental X-ray picture segmentation assists tooth diagnosis. Too much chocolate and unhealthy diets have increased tooth diseases in recent decades. Dental radiography supports clinical diagnosis, treatment, and quality assessment. Clinical quality has been improved by digitalising dental X-ray image analysis systems. This inspires an early-detection dental disease prediction model. Dental X-ray image segmentation for disease diagnosis is gaining attention. Deep learning has grown in various image processing domains. Image segmentation is a key field of computer vision research. The U-Net, a popular picture segmentation method, has been widely applied to medicine. Here, a unique deep learning system, the UNet model improved with ANN, notably MLP, segments dental pictures better. An ANN-enhanced U-Net split the X-ray pictures, and a GLCM selected the features. CNN-mobile net classifier. Four metrics - global accuracy, mean accuracy, mean IoU, weighted IoU, and MeanBFScore - and classification with precision, recall, Fscore, specificity, and accuracy evaluate segmentation methodology. Our method is accurate and outperforms others in all segmentation and classification tasks

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	DEVELOPMENT OF CONSENSUS RECOMMENDATIONS ON THE MANAGEMENT OF VITILIGO AND THE ROLE OF DECAPEPTIDE IN VITILIGO BY THE DELPHI METHOD		 Dr.HARI KISHAN KUMAR SUBBARAO Y (RRMCH)
AUTHORS	DAVINDER PARSAD SANJEEV KANDHARI RACHITA DHURAT BELA SHAH IMRAN MAJID HARI KISHAN KUMAR SUBBARAO Y		
JOURNALNAME	INDIAN JOURNAL OF DERMATOLOGY		
SNIP- 0.629	IMPACTFACTOR –1.3	INDEXED- SCOPUS/WOS	

ABSTRACT:

Treatment of vitiligo is still a challenge in dermatology. Literature is sparse on the definitive clinical role of basic fibroblast growth factor (bFGF) in vitiligo patients. We decided to generate a consensus in an attempt to answer some critical questions related to the management of vitiligo and the role of bFGF. A Delphi method among 21 experts across India was conducted. A consensus (agreement was 75% or greater) was taken on 27 statements on the prevalence, epidemiology, and treatment of vitiligo and the role of bFGF in the management of vitiligo. The consensus process was completed after two rounds. Topical corticosteroid therapy is the first-line therapy for vitiligo; however, its adverse effects are widely known, especially in sensitive areas. Topical calcineurin inhibitors are preferred in stable vitiligo of the face, neck, genitals, or intertriginous regions as an alternative to topical corticosteroids. Topical bFGF is a relatively newer therapy with a promising role in stable vitiligo. bFGF is safe and effective in inducing repigmentation of vitiligo lesions. Combination therapy of bFGF with other topical therapies, phototherapy, and surgical procedures can be beneficial in patients of vitiligo. This consensus would complement the currently available literature on bFGF and help the practitioner to recognize the unmet need in the treatment of vitiligo.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	A CNN-ENHANCED AEROYOLOV3-C2F FRAMEWORK FOR VEHICLE DETECTION AND CLASSIFICATION IN AERIAL IMAGERY VIA HYBRID FEATURE OPTIMIZATION		 Mr.SAI KRISHNA PARACHOORI (ECE)
AUTHORS	SAI KRISHNA PARACHOORI K SUJATHA		
JOURNALNAME	JOURNAL OF CIRCUITS, SYSTEMS AND COMPUTERS		
SNIP- 0.497	IMPACTFACTOR - 1	INDEXED- SCOPUS/WOS	

ABSTRACT

This paper introduces an effective and fast deep learning model for detecting and classifying vehicles in aerial images to address typical problems of small size, background clutter and unfavorable weather. The AeroYOLOv3-c2f-LSKA pipeline is suggested, which combines improved pre-processing, a combination of handcrafted and deep features, optimized feature selection, attention-guided object detection, and transformer-based classification. The most important innovations are the application of biologically inspired hybrid optimization Piranha Foraging Optimization Algorithm-Secretary Bird Optimization (PFOA-SBO), for feature selection, and the addition of c2f and Large Separable Kernel Attention (LSKA) to the YOLOv3 backbone to enhance localization performance in complicated scenes. Multi-class vehicle classification is further improved using a Vision Transformer. Experimental analysis on VisDrone dataset demonstrates that the proposed model has a better performance with an accuracy of 99.81%, F1-score of 99.80% and inference speed of 41 FPS compared to YOLOv8 and other state-of-the-art models. These findings prove the applicability of the framework in real-time applications of aerial surveillance.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	A PRELIMINARY CLINICOPATHOLOGIC STUDY TO EVALUATE THE ASSOCIATION OF HUMAN PAPILLOMA VIRUS IN ORAL SQUAMOUS CELL CARCINOMA AND ITS INFLUENCE ON PROGNOSTIC SIGNIFICANCE	
AUTHORS	WINNIFRED CHRISTY A UMA SUDHAKAR SNOPHIA RANI RAJAMANI THALAIMALAI SARAVANAN DAVID PRAVEENKUMAR D ARUNKUMAR NANDAGOPAL	
JOURNALNAME	JOURNAL OF INDIAN ACADEMY OF ORAL MEDICINE AND RADIOLOGY	
SNIP-NIL	IMPACTFACTOR - 0.3	INDEXED-SCOPUS



Dr.WINNIFRED CHRISTY A (TMDCH)

ABSTRACT

In non-tobacco and non-alcohol users with oral cancer, oncogene viruses may play a significant role. To find the association of human papilloma virus (HPV) in oral squamous cell carcinomas (OSCC) and to find the influence of presence of HPV on survival in OSCC patients.: This observational study comprised of 51 patients with OSCC, who were non tobacco and non-alcohol users, whose tumor tissues were subjected to immunohistochemistry to evaluate *p16* expression. Overexpression of *p16* was compared with various clinical and histological parameters using Chi square tests, Fisher's test, and Wilcoxon rank sum test with *P* value less than 0.05 being considered significant. Out of the 51 patients, 14 of them overexpressed *p16* antigen. Only one *p16* overexpressed patient had sharp tooth. When disease free survival was calculated it was slightly more in *p16* overexpression patients than negative *p16* patients (21.4 ± 12.89 months vs 19.28 ± 7.19 months). Overall survival also followed a similar pattern (24.27 vs 21.28 months). HPV may be associated in the causation of OSCC. HPV positive tumors have marginal increase in survival rates that may give a prognostic advantage over HPV negative tumors.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	EXCITATION EMISSION MATRIX AND PARALLEL FACTOR ANALYSIS OF BLOOD PLASMA FOR EFFECTIVE DELINEATION OF POTENTIALLY MALIGNANT DISORDERS		 Dr. N.RAJ VIKRAM (TMDCH)
AUTHORS	NATARAJAN RAJVIKRAM DIVYAMBIKA C V GANESAN SINGARAVELU		
JOURNALNAME	JOURNAL OF INDIAN ACADEMY OF ORAL MEDICINE AND RADIOLOGY		
SNIP - NIL	IMPACTFACTOR - 0.3	INDEXED- SCOPUS	

ABSTRACT

Native fluorescence spectroscopy is a noninvasive real-time tool to probe the molecular alteration in tissues in pathological conditions by utilizing fluorescence properties of intrinsic fluorophores. Excitation emission matrix (EEM) is a technique to view multiple fluorophores simultaneously in single mapping. EEMs combined with parallel factor analysis (PARAFAC) is a useful technique to analyze the spectral profile and relative distributions of fluorophores present in tissues and body fluids. Analysis of the EEM of normal blood plasma and oral potentially malignant disorders (PMDs) provides useful insight into the biochemical changes occurring during the transformation of normal cells into premalignant condition.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	THE STUDY OF NON-TUBERCULOUS AEROBIC BACTERIAL AND FUNGAL PROFILE OF LOWER RESPIRATORY TRACT INFECTION IN TERTIARY CARE CENTRE	
AUTHORS	EUPHRASIA LATHA J, SINDUJA S, RENUGA S, ARUMAI AS	
JOURNALNAME	RESEARCH JOURNAL OF BIOTECHNOLOGY	
SNIP - NIL	IMPACTFACTOR - 0.2	INDEXED- SCOPUS



Dr. EUPHRASIA LATHA J (SLMCH)

ABSTRACT

Lower respiratory tract infections (LRTIs) cause significant morbidity and mortality, complicated by rising antimicrobial resistance and fungal co-infections. This prospective study at a tertiary care centre in Chennai analyzed 200 LRTI specimens for aerobic bacterial and fungal pathogens and antimicrobial susceptibility. *Klebsiella pneumoniae* (57.5%) was the predominant bacterium, followed by *Acinetobacter baumannii* (19.8%) and *Pseudomonas aeruginosa* (17.9%). Carbapenem resistance occurred in 34% of Gram-negative isolates, with *Acinetobacter* showing the highest rates. Colistin resistance was found in 2.5% of carbapenem-resistant *Klebsiella*. Carbapenemase production was confirmed in 60% and metallo- β -lactamase in 40% of *Klebsiella* tested. Fungal growth was detected in 15.5% of samples, mainly *Aspergillus fumigatus* among filamentous fungi. Eight cases had bacterial-fungal co-infections. The study underscores the urgent need for antimicrobial stewardship and accurate microbial diagnosis to improve LRTI management and control multidrug resistance.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

RESEARCH COUNCIL		
PAPERTITLE	UNLOCKING EFFECTIVE DECISION-MAKING AND CRITICAL THINKING IN ORTHOPAEDICS: INSIGHTS FROM A NARRATIVE REVIEW	
AUTHORS	SAKETH A S P V S, KRISHNA SUBRAMANYAM, SATVIK N PAI, KARTHIKA PADMAVATHY , KARTHICK RANGASAMY, PURUSHOTHAMAN MUTHU KANAGARAJ	
JOURNALNAME	JOURNAL OF CLINICAL ORTHOPAEDICS AND TRAUMA	
SNIP- 1.145	IMPACTFACTOR - NIL	INDEXED- SCOPUS
Dr. KARTHIKA PADMAVATHY (ACSMCH)		

ABSTRACT

Clinical decision-making and critical thinking are vital in [orthopaedic](#) practice, directly impacting patient outcomes. Surgeons often face complex cases requiring both experience and systematic reasoning to ensure the best treatment approach. This review aims to explore the factors influencing decision-making in orthopaedics, focusing on the role of critical thinking in enhancing clinical choices. It examines decision-making frameworks, cognitive biases, and the importance of evidence-based practices. Additionally, the review discusses the increasing role of artificial intelligence (AI) and decision support systems in aiding clinical decisions.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	BIOCOMPATIBLE SOFT ROBOTICS: INTEGRATING SMART MATERIALS FOR BIOMEDICAL INNOVATION	
AUTHORS	KEERTHIKA KARUNAKARAN VIJAY EBENEZER VINOTHINI VIJAYARAGAVAN KEERTHANA KESAVAN J BHUVANESHWARRI THILAKAVATHI R	
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)	
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS



Ms. KEERTHIKA KARUNAKARAN (AMRI)

ABSTRACT

Biocompatible soft robotics is a revolutionizing field of biomedical engineering that enables the development of devices which closely interact with the human body. This review examines the use of smart materials in soft robotic systems, highlighting their healthcare and therapeutic applications. Soft actuators based on natural muscle motion ensure safe and tunable mechanical response for applications in dynamic biological settings. Hydrogel-based soft sensors possess high stretchability and sensitivity and are well suited to physiological monitoring. Bioinspired soft sensors replicate natural proprioceptive and tactile systems, improving robotic perception and touch. The addition of nanomaterials adds multifunctionality, including electrical conductivity, self-healing, and stimuli response, essential for advanced biomedical application. Advances in 3D and 4D printing allow for custom-programmable structures that can change over time and conditions and enable personalized medicine. A broad perspective of soft materials in wearable robotics reflects their applications in real-time diagnosis, rehabilitation, and assistive technology. In addition, implantable robotic devices are addressed with an emphasis on biocompatibility, minimally invasive delivery, and long-term performance. Together, this review emphasizes the collaborative promise of smart materials and soft robotics to transform medical devices, providing safer, more efficient, and patient-friendly options for future clinical adoption

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	DISSECTING THE INTRICATE RELATIONSHIP BETWEEN OXIDATIVE STRESS AND BLOOD SUGAR LEVELS IN MIDDLE-AGED INDIAN POPULATIONS: A CROSS-SECTIONAL STUDY		 Dr.JYOTHI VYBHAVI VENKATESH SHANTHA (RRMCH)
AUTHORS	SUJATHA TALIKOTI JYOTHI VYBHAVI VENKATESH SHANTHA SABITA YOGRAJ VISHWAJEET M CHAVAN ANGSHUMAN DE AMRIT PODDER SONALI DASH JAYBALLABH KUMAR ARKAJIT DASGUPTA		
JOURNALNAME	JOURNAL OF CARCINOGENESIS		
SNIP – 0.87	IMPACTFACTOR – 0.4	INDEXED- SCOPUS	

ABSTRACT

The global prevalence of diabetes mellitus, particularly type 2 diabetes mellitus (T2DM), has reached alarming proportions, transforming into a major public health crisis. Among these mechanisms, oxidative stress has emerged as a pivotal factor influencing glucose metabolism and diabetic complications. The majority of studies examining oxidative stress biomarkers in diabetes have been conducted in Western populations, and there is a paucity of data from India, particularly among middle-aged individuals who are at high risk of developing metabolic disorders due to a combination of genetic, lifestyle, and environmental factors. Our study was conceptualized to bridge this crucial knowledge gap by exploring the association between oxidative stress markers and blood sugar levels in the middle-aged Indian population. We enrolled 300 age-matched participants in the current study and examined them for their serum malondialdehyde (MDA) levels, serum nitric oxide (NO) levels, fasting blood sugar (FBS) levels, post-prandial blood sugar (PPBS) levels, and HbA1C levels. Through convenience sampling, participants were divided into two groups according to their FBS and PPBS levels. Group-1 consisted of 150 participants with normoglycemia, and group-2 consisted of 150 participants with diabetes. The statistical analysis of the data was performed by using SPSS software version 27. Results: We observed a significantly ($p < 0.001$) higher value of oxidative stress marker in Group-2 individuals when compared with Group-1 individuals. Our data also revealed a positive correlation of markers of blood glucose with serum MDA and a negative correlation with serum.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	THE EFFECT OF SINGLE INTRAOPERATIVE DOSE OF DEXAMETHASONE ON THE BLOOD GLUCOSE CONCENTRATION IN DIABETIC AND NON-DIABETIC PATIENTS: A DOUBLE BLINDED RANDOMIZED CONTROL STUDY		 Dr. NADIA ROSE (RRMCH)
AUTHORS	NADIA ROSE GAJANAN BABU N K NAVANEETHAN K S SHRUTHI		
JOURNALNAME	ASIAN JOURNAL OF ANESTHESIOLOGY		
SNIP- 0.139	IMPACTFACTOR – 0.43	INDEXED- SCOPUS	

ABSTRACT

Dexamethasone is widely used in anesthesia practise as prophylaxis for postoperative nausea and vomiting (PONV). Our aims were to evaluate the postoperative glycemic profile after a single dose of intraoperative dexamethasone in non-diabetic and diabetic patients and to evaluate the PONV. This double-blinded, randomized, controlled study was done for 6 months from June to December 2024 in a tertiary care hospital after obtaining ethical committee clearance and CTRI registration. Patients were allocated to one of four groups: nondiabetics receiving saline, nondiabetics receiving dexamethasone, diabetics receiving saline, and diabetics receiving dexamethasone. The study drug or saline control was administered at the induction of anesthesia. Blood sugar values, two hours after dexamethasone/placebo administration as well as fasting blood sugar and postprandial blood sugar on postoperative day 1, 2 were taken as primary endpoints. PONV was assessed in the first 24 hours after surgery. The rise in blood glucose levels was higher in the group receiving dexamethasone compared to saline in both diabetics and nondiabetics ($P < 0.05$). None of the patients had blood glucose values more than 180 mg/dL after 2 hours and 8 hours of dexamethasone administration. Conclusions: Dexamethasone can be considered as prophylaxis for PONV in well controlled diabetics and nondiabetics despite the increase in blood glucose levels as a hyperglycemic response (blood glucose value 180 mg/dL) to a single dose was not observed in our study

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	ENHANCING CUBESAT PERFORMANCE WITH AFFORDABLE AND RELIABLE ELECTRICAL POWER SYSTEMS		 Dr.KAVITHA ESAKIMUTHU (PHYSICS)
AUTHORS	KAVITHA ESAKIMUTHU GOKULRAJ S ANDAL CHINNA GURUSAMY PERINBA ATHIBAN S THANUJA B		
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)		
SNIP - NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

This research presents the development of a highly efficient and cost-effective Electrical Power System (EPS) for a CubeSat designed to enhance communication with fishermen. Recognizing the need for reliable and affordable connectivity in remote maritime environments, this research paper focuses on creating a practical and accessible solution for supporting fishermen's operations. The EPS architecture, featuring a simple and robust design, prioritizes high efficiency and maximizes power utilization data for reliable communication. This system incorporates optimized solar panels to capture sunlight, even in challenging maritime conditions, and a battery management system to ensure consistent power delivery during periods of limited sunlight. Power management circuits regulate voltage and current values, ensuring the efficient power distribution to the whole communication system. The paper analyses the specific power requirements for LoRa communication, a technology well-suited for long-range and low-power data transmission in remote areas. The EPS design takes into account cost considerations, making it a practical and accessible solution for widespread adoption. Detailed analysis of the system's efficiency and reliability, including simulations of various environmental conditions, demonstrates its suitability for supporting fishermen communication. This research contributes to the growing field of Cube Sat applications for maritime operations, highlighting the potential of low-cost satellite technology for improving safety and enhancing communication capabilities for fishermen around the globe

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	DIGITAL TRANSFORMATION AND AUTOMATION IN DENTAL CLINICS: CURRENT APPLICATIONS, CHALLENGES, AND FUTURE PERSPECTIVES	
AUTHORS	RAMAKRISHNAN KESAVAN VINITA MARY A	
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)	
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS



Dr.RAMAKRISHNAN
KESAVAN
(TMDCH)

ABSTRACT

The dental health care delivery structure is undergoing a rapid change through the integration of computerisation technologies, which are aimed at improving clinical efficiency and enhancing patient care. Automation in dental clinics refers to the adoption of innovative and advanced technologies such as AI (artificial intelligence), machine learning, robotics, Internet of Things (IoT), and cloud-based storage systems in clinical dental practice. At present, automation is being extensively used in administrative roadmaps, which include scheduling of patient appointments, digital patient record maintenance, computerised billing, and communication systems. These modernisations significantly reduce administrative workloads, decrease patient waiting periods, and minimise human error. Recent technologies such as intraoral scanners, AI-assisted radiographic analysis, chairside dental milling machines, and 3D printing are being employed to augment diagnostic precision and deliver quicker outcomes. Apart from enhancing diagnostic and therapeutic capabilities, these technological innovations also empower active engagement of the patients in planning their own treatment modalities. These technological advancements also come with substantial challenges and barriers, which include the initial high cost of implementation, cybersecurity concerns, concerns over data privacy, the requirement for specific staff training, and system compatibility issues. Future prospects include the development, testing, and usage of predictive AI-integrated tools, which are capable of forecasting treatment outcomes, robotic-assisted dental surgeries, voice-controlled systems, and the use of virtual and augmented reality for both patient education and professional training. Furthermore, personalised oral health care is expected to advance through the integration of wearable tracking devices, smart toothbrushes, and health apps. The current paper aims to provide dental care professionals, students, and hospital administrators with a strong understanding of how automation is redesigning dental practice, the tactical steps needed for its effective implementation, and how this will define the future of oral healthcare delivery

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	REVIEW OF ROBOTICS IN HEALTHCARE EDUCATION INNOVATIONS, CHALLENGES, AND FUTURE DIRECTIONS		 Dr. MADHAN JEYARAMAN (ACSMCH)
AUTHORS	DR MADHAN JEYARAMAN NAVEEN JEYARAMAN SWAMINATHAN RAMASUBRAMANIAN SHRIDEAVI MURUGAN VINOTHINI VIJAYARAGAVAN		
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)		
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

Robotics is increasingly integral to healthcare, significantly transforming patient care, clinical workflows, and medical education. This review critically evaluates the multifarious applications and implications of robotics within healthcare education, including surgical, rehabilitation, social interaction, and logistics domains. Surgical robotics, such as the Da Vinci system, has notably improved skill acquisition through immersive virtual reality simulations, enhancing technical precision and reducing procedural errors. Rehabilitation robotics demonstrates substantial educational benefits in facilitating motor recovery through advanced exoskeletons and sensorimotor devices, emphasizing personalized therapeutic approaches. Social robots, leveraging sophisticated AI interactions, effectively cultivate empathy, communication skills, and clinical reasoning among healthcare students. Furthermore, automation and logistics robotics streamline clinical workflows, reduce infection risks, and allow healthcare workers to prioritize patient-centric care. However, significant barriers to widespread adoption persist, including prohibitive initial investments, ongoing operational costs, limited technological literacy among clinicians, and ethical concerns surrounding data privacy, accountability, and potential deskilling of healthcare professionals. Addressing these challenges requires integrated curricula emphasizing interdisciplinary collaboration, innovative funding strategies, robust regulatory frameworks, user-centered design, and sustained longitudinal research. Future developments in autonomous micro/nanorobots, immersive virtual environments, and human-robot interaction necessitate curricula that cultivate adaptive clinical judgment, empathetic patient care, and nuanced human-robot teaming skills. Proactive educational adaptation is essential for preparing technologically competent, compassionate healthcare providers, thereby ensuring patient safety and enhancing healthcare quality in an increasingly robotic future

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	WHY 7-KETOCHOLESTEROL MATTERS NOW: A RAPID REVIEW OF ITS PATHOGENIC AND THERAPEUTIC RELEVANCE		 Mr.EVELYN SHARON SUKUMARAN (PHARMACY)
AUTHORS	EVELYN SHARON SUKUMARAN ARIN NATANIA S		
JOURNALNAME	THE JOURNAL OF STEROID BIOCHEMISTRY AND MOLECULAR BIOLOGY		
SNIP-	IMPACTFACTOR -	INDEXED- SCOPUS	

ABSTRACT

Ketocholesterol (7-KC), a major oxysterol formed through cholesterol autoxidation, is increasingly recognized as a pathogenic mediator in ageing and chronic disease. Detected in atherosclerotic plaques, Alzheimer's cortex, aged retina, and lysosomal storage disorders, 7-KC actively drives oxidative stress, chronic inflammation, organelle dysfunction, and oxiapoptophagy. These mechanisms underpin its role in cardiovascular, neurodegenerative, and metabolic pathologies. Recent advances highlight nutritional antioxidants, pharmacological agents, microbial bioremediation, and nanotechnology as promising therapeutic avenues. Recognizing 7-KC as both a biomarker and therapeutic target offers opportunities for innovation in diagnostics and treatment of age-related and inflammatory disorders

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	COMPARATIVE EVALUATION OF ANTIMICROBIAL EFFECT, CALCIUM ION RELEASE, AND PH CHANGE USING HERBAL COMBINATIONS OF NANOPARTICLE CALCIUM HYDROXIDE: AN IN VITRO STUDY		 Dr.PRABHAKARA SOMANNA (RRMCH)
AUTHORS	PRAGNA S VIJAYA SHAKUNTALA BETHUR SIDDIAIAH PRABHAKARA SOMANNA		
JOURNALNAME	INTERNATIONAL JOURNAL OF CLINICAL PEDIATRIC DENTISTRY		
SNIP- NIL	IMPACTFACTOR - NIL	INDEXED-SCOPUS	

ABSTRACT

Microorganisms such as *Enterococcus faecalis* (E. faecalis), *Enterobacteriaceae*, and *Candida albicans* (C. albicans) are associated with persisting infections and causing endodontic failure. The addition of herbals to calcium hydroxide increases the microbial efficacy within the root canal. The study aimed at evaluating and comparing the pH change, calcium ions release, along with antimicrobial potential of various nanoparticle calcium hydroxide preparations as an intracanal medicament against E. faecalis and C. albicans. Decoronation of 40 single-rooted teeth was done, canals were enlarged, and segregated into four categories (each group containing 10 samples): Nano calcium hydroxide (CH) + sterile distilled water, nano CH + nano clove, nano CH + nano triphala, and nano CH + nano activated charcoal. The formulations were prepared, placed within the canals, and suspended in glass vials. Calcium ion concentration and pH changes were analyzed up to 30 days. The antimicrobial efficacy against E. faecalis and C. albicans was measured by agar diffusion test/disk diffusion test and direct contact test. To compare the zone of inhibition, absorbance values, and pH values, the one-way analysis of variance (ANOVA) test was employed. Kruskal–Wallis test was employed to measure colony-forming units (CFU) between four categories. Results: Calcium hydroxide with distilled water group was observed with maximum sustained release of calcium ions compared with the other three herbal combinations. The maximum mean zone of inhibition against C. albicans was achieved by nano CH + clove. Nano CH + with distilled water had maximum mean zone of inhibition against E. faecalis. Herbal combinations of CH showed enhanced antimicrobial activity against C. albicans and E. faecalis and can be used in endodontic treatment.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

RESEARCH COUNCIL		
PAPERTITLE	INTEGRATION OF ROBOTIC APPROACHES FOR REAL-TIME MONITORING IN CARDIOTHORACIC AND VASCULAR SURGERIES USING CARDIOPULMONARY BYPASS	
AUTHORS	J DEEPTHI S SARANYA T SREELEKHA	
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)	
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED-SCOPUS

Ms.J DEEPTHI
(AHS)

ABSTRACT

Artificial intelligence (AI) and robotic technologies are revolutionising cardiothoracic and vascular interventions by mimicking human cognition and enhancing clinical decision-making. AI-powered autonomous perfusion systems and robot-assisted surgical tools offer unprecedented precision, personalisation, and real-time adaptability, transforming patient care. In India, a developing nation, the integration of AI in healthcare requires substantial capital investment and strategic alignment with global technological advancements. This chapter explores the evolving role of AI across the surgical continuum—from diagnosis and preoperative planning through intraoperative assistance to postoperative monitoring and follow-up. Fusing imaging systems, monitoring tools, and electronic health records enables comprehensive data-driven decision-making, fostering a collaborative and responsive medical environment. Key innovations such as predictive analytics, advanced image interpretation, and data integration reshape surgical practice. However, ethical considerations, particularly concerning patient safety, remain paramount. Continuous professional development is essential for perfusionists and surgeons to effectively adopt and apply AI technologies in clinical settings

RESEARCH COUNCIL		
PAPERTITLE	THE ROLE OF ROBOTICS IN SHAPING MODERN DIGITAL PATHOLOGY WORKFLOWS	
AUTHORS	KARTHIKA PADMAVATHY VASUGI G A ELAKKIYAILAVARASAN	
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)	
SNIP-NIL	IMPACT FACTOR - NIL	INDEXED-SCOPUS

Dr.KARTHIKA PADMAVATHY (SLMCH)

ABSTRACT

The use of robotics in digital pathology has slowly but surely changed how diagnostic labs work. As healthcare systems come under more and more pressure to get findings quickly and accurately, many pathology departments are using robots to do activities that used to be done by hand and take a long time. This overview looks at how robotics is being employed right now in places including tissue processing, slide preparation, image scanning, and specimen storage, and how these uses are changing the way labs function and the health of patients. We did a full review of articles from 2013 to 2024 using PubMed, Scopus, and Web of Science. The research looked at all show the same thing: robots help cut down on mistakes, speed up sample handling, and make it easier to report from a distance. Laboratories who have switched to these technologies also say that their turnaround times are faster and their people and facilities are used more efficiently. Progress in robotic systems linked with AI has revealed considerable upgrades in diagnostic accuracy and workflow effectiveness, with some research facilities claiming a cut in processing times by as much as 40% together with improved uniformity in procedural guidelines. These shifts show the way robotics is altering the functional aspects of pathology practices, making them responsive and more trustworthy

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	ADVANCEMENTS IN THERANOSTIC NANOROBOTS FOR EARLY DETECTION AND TARGETED THERAPY OF THROMBOSIS		 Dr.IRFAUNUL AZEES A H (ACSMCH)
AUTHORS	DIVYAH VENGKADESVARARAMANA WONG YUNG KEONG EUGENE CHOW HO MENG DENSINGH SAMUEL RAJ RAJKUMAR IRFAUNUL AZEES A H		
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)		
SNIP- NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

The formation of thrombi within blood vessels plays a cardinal role in the mortality rate due to cardiovascular diseases, and recent advancements in nanotechnology have shown significant potential in addressing this issue. Standard medical treatments for thrombosis usually have drawbacks such as delayed detection, off-target effects, and increased bleeding risks. Due to the advancement of technology, theranostic nanorobots have emerged and offer a better solution for precise and safe thrombolysis. Aim: To investigate the possible application of multifunctional theranostic nanorobots in the diagnosis and treatment of thrombosis. Material and method: A systematic literature review search was performed across databases and journals including PubMed, Scopus, Google Scholar, ACS Nano, Journal of Nanobiotechnology using keywords related to theranostic nanorobots and thrombosis management. The searches were performed from studies published between January 2019 to March 2025 to compile the latest advancement in the field. Out of 41 studies selected, 31 articles were included for primary analysis, while 10 review and theoretical studies were used for introduction Conclusion: Theranostic nanorobot have been proven as a transformative strategy in thrombosis management due to its combination of therapy and diagnostics. Continued development and implementation are strongly recommended to overcome the current barriers and increase therapeutic efficacy.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	SECURING SMART SYSTEMS: A PARALLEL ORCHESTRATED LSTM-CNN MODEL FOR CYBER THREAT DETECTION IN INDUSTRY 4.0		 Dr.NALINASHINI G (ECE)
AUTHORS	SHILAJA C NABEEL MUHAMMED ASLAM RENUKADEVI S M NALINASHINI G SARATH S RAVULA RAMASWAMY		
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)		
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

Protecting Industry 4.0 networks against sophisticated cyberattacks is the only option by which industrial automation and intelligent manufacturing systems can be trustworthy, stable, and resilient. The increased count of IoT, IIoT, and cyber-physical elements installed within these systems makes them vulnerable to new and sophisticated categories of threats. Existing detection methods are typically non-real-time, non-adaptive, and imprecise mainly because current systems do not completely digitize temporal and spatial trends within industry data streams. In this scenario, this paper proposes an innovative deep learning-based technique known as Parallel Orchestrated LSTM-CNN Network (PLO-LCNet) to efficiently detect cyberthreats in Industry 4.0 networks. The approach includes Parallel Sequential Anomaly Detection using Long Short-Term Memory (LSTM) and Parallel Spatial Feature Learning using Convolutional Neural Networks (CNN) in a parallel design, which is performed to improve the efficiency of learning. The architecture allows pattern detection as well as performance improvement simultaneously. In contrast with the conventional benchmarking datasets like Edge-IIoTset and CSE-CIC-IDS2018, the detection accuracy of PLO-LCNet is 0.99 and precision and recall accuracy is 0.98 and 0.99, respectively. Experimental results indicate that the model is better than other existing methods in aspects of accuracy, response time, and fewer errors and thus ideal for Industry 4.0 system security.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

RESEARCH COUNCIL		
PAPERTITLE	ROBOTIC ASSISTED ECHOCARDIOGRAPHY: ENHANCING CARDIAC IMAGING THROUGH TELEOPERATION	
AUTHORS	T SREELEKHA J DEEPTHI	
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)	
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS

Ms.T SREELEKHA
(AHS)

ABSTRACT

Echocardiography, which provides real-time viewing of the anatomy and function of the heart, is still a fundamental component of cardiac diagnosis. Nevertheless, traditional echocardiography techniques are constrained by their dependence on operator skill, requirement for close physical contact, and picture quality fluctuation. A revolutionary approach is robotic-assisted echocardiography, which combines sophisticated robotic equipment with tele-operational capabilities to capture high-quality heart pictures remotely. In addition to enhancing picture consistency and diagnostic accuracy, this method increases access to specialist treatment in underserved or rural areas by enabling skilled doctors to operate ultrasound probes from a distance. It allows geographically distributed healthcare professionals to deliver timely and expert cardiac assessments, bridging gaps in care delivery and improving patient outcomes. Clinical studies and pilot implementations have demonstrated the feasibility and effectiveness of such systems in intensive care units, mobile clinics, and even extreme environments like space missions. Despite challenges like system cost, network stability, and training needs, robotic-assisted echocardiography has excellent potential for the future of cardiovascular care, especially in space medicine, critical care settings, and international telehealth programs. Remote tele-mentored ultrasound echocardiography can be used to evaluate left and right ventricular and valvular function and to aid in the diagnosis of pathologies such as tamponade. This paper examines the current technologies, clinical applications, advantages, and disadvantages of robotic-assisted echocardiography and describes how it could change the cardiac imaging landscape

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	TARGETING OBESITY IN PCOS: A REVIEW OF CURRENT PHARMACOLOGICAL INTERVENTIONS AND FUTURE DIRECTIONS		 Dr.B DHARANI (ACSMCH)
AUTHORS	B DHARANI SUBA ANGAPPAN		
JOURNALNAME	MEDICINA MODERN		
SNIP- 0.221	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

Obesity is a common and significant comorbidity of Polycystic Ovary Syndrome (PCOS), contributing to a range of metabolic and reproductive complications. The rising prevalence of obesity, particularly among women of reproductive age, exacerbates the symptoms of PCOS, such as Insulin Resistance (IR), hyperandrogenism, and menstrual irregularities, while increasing the risk of long-term conditions like Type 2 Diabetes Mellitus (T2DM), cardiovascular disease, and infertility. Despite the importance of addressing obesity in PCOS, current pharmacological treatments remain limited and often ineffective in providing sustained weight loss and metabolic improvements. This review aims to evaluate the available pharmacological options for managing obesity in women with PCOS, including well-established treatments such as Metformin, Orlistat, Liraglutide and Tirzepatide, as well as emerging therapies like Semaglutide, Cagrilintide, Bimagrumab and Leptin Sensitizers. These therapies target key mechanisms of obesity, including IR, appetite regulation and fat metabolism. While promising, these emerging therapies require further clinical investigation to confirm their long-term safety and efficacy. Additionally, the role of lifestyle interventions, such as dietary changes and physical activity, in combination with pharmacological treatments, is discussed to optimize outcomes for patients. The review also highlights the need for personalized treatment approaches that consider the complex metabolic and hormonal dysfunctions associated with PCOS. Finally, the article calls for future research to explore combination therapies and novel pharmacological agents, as well as the potential for multidisciplinary approaches in clinical trials. Addressing obesity in PCOS remains a critical public health challenge and ongoing advancements in treatment options are essential to improving the health and quality of life for affected women

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	LEARNING TEMPORAL PATTERNS FOR PROCESS REFINEMENT IN SMART MANUFACTURING USING CHRONGRU-TCN		 Dr.NALINASHINI G (ECE)
AUTHORS	SHILAJA C SARATH S RUBAN THOMAS D. NALINASHINI G NANCY W NABEEL MUHAMMED ASLAM		
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)		
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

AI-enabled process optimization is currently a way to achieve Smart Manufacturing, productivity enhancement, cost reduction of operation, and sustainable data-driven decision-making. Because manufacturing systems are dynamic and complex, AI implementation can bring intelligent automation, predictive maintenance, and real-time optimization. Nevertheless, deep learning models of today will be haunted by debilitating limitations in the form of temporal factors modeling abilities, inefficient sequencing relationship handling, inference latency, and failure to learn under dynamic production environments. With an aim to eliminate such constraints, the present paper presents a novel deep learning model known as ChronGRU-TCN, which encompasses the advantages of Gated Recurrent Units (GRUs) and Temporal Convolutional Networks (TCNs). The presented model can learn long-and short-term temporal interactions at low computation. GRU layers maintained temporal dynamics of sequential data, and TCN layers incorporating causal convolution and residual connections added more temporal information to achieve strong features. The above system enhances prediction task performance without side effect on inference speed or interpretability. It is obtained through gigantic experiments on a group of benchmark datasets where the proposed model surpasses its competitor architectures like CNN-LSTM, BiLSTM, Transformer, GRU-Attention, TCN, and ResNet-1D. The model demonstrates its potency and usability in using it in intelligent manufacturing by recording excellent retrievals—98% accuracy, 98.5% recall, 0.48s inference time, and 0.981 ROC-AUC

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	AI AND AUTOMATION IN ORGAN-ON-A-CHIP TECHNOLOGY: ADVANCING PERSONALIZED MEDICINE AND DISEASE MODELING		Dr.VINOTHINI VIJAYARAGAVAN (AMRI)
AUTHORS	VINOTHINI VIJAYARAGAVAN VIJAYAKUMAR M PRIYA DHARSHINI KEERTHIKA KARUNAKARAN KEERTHANA KESAVAN RAJKUMAR DENSINGH SAMUEL RAJ		
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)		
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED-SCOPUS	

ABSTRACT

Organ-on-a-Chip (OoC) technology is an advanced platform that replicates human organ functioning on a microfluidic chip, offering a more precise and moral substitute for conventional in vitro and animal testing. They recreate intricate tissue interfaces, mechanical signs and biochemical environments, making them of great utility for disease modeling, drug discovery and toxicity testing. With recent advancements, the use of Artificial Intelligence (AI) and robotic automation, the interpretation of real-time biosensor signals, facilitating accurate detection of tissue responses, early indicators of toxicity and predictive modeling of disease progression will be augmented in the healthcare industry. Robotic automation enables OoC platforms utility to advance through the high-throughput fabrication, fluid manipulation and maintenance of chip cultures with minimal human involvement. This enhances consistency and decreases the possibility of human error. In medicine, these OoCs are utilized in personalized medicine for drug screening and optimization of therapy using patient- derived cells. They are also used to model intricate medical conditions like cancer, cardiovascular disease, and neurological disorders. This review underscores the upcoming trends of automated and AI-based OoC systems with a focus on their increasing influence on clinical research, personalized medicines, diagnostics and future healthcare provisions.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	ROBOTIC PROCESS AUTOMATION STREAMLINING BUSINESS PROCESSES FOR OPERATIONAL EXCELLENCE		 Dr. MAGESH SANKAR (CSE)
AUTHORS	MAGESH SANKAR VIJAYALAKSHMI SIVARAMAKRISHNAN PALAMADAI SUBRAMANIAN RAJAKUMAR GEETHA S MANIKANDAN R		
JOURNALNAME	ARTIFICIAL INTELLIGENCE, MACHINE LEARNING AND IOT FOR SMART BUSINESS MANAGEMENT		
SNIP- NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

In the contemporary economic landscape, companies are required to comprehend complicated processes in detail, increase the effectiveness of resource utilization, and enhance the along without losing the overall performance capacity that has been built. Setting aside rigid systems, they do not scale well as they are unable to understand and control the changing workloads, which leads to crowded systems, overuse of electricity, and wastage of resources. This study suggests a sophisticated RPA operational management that seamlessly integrates advanced machine learning (ML) and reinforcement learning technology in operation to produce an ever-evolving set of intelligent practices. The development of configured task scheduling, dynamic resource provision, and system usage management are all targeted by the system to allow expansion and adaptability in working environments on a real-time basis. The model performance and prediction accuracy in complex environments are achieved by two new feature engineering techniques: adaptive particle swarm optimization (APSO) and opti-filter XGBoost. Moreover, latency is decreased and energy economy is improved by incorporating State-Action-Reward-State-Action (SARSA)-Tabu search-based reinforcement learning, which in turn enhances autonomous resource management operations. For control and monitoring purposes, the framework uses the autoregressive integrated moving average-whale optimization algorithm (ARIMA-WOA). This ensures efficient and accurate system supervision. The effectiveness of the proposed solution is demonstrated together with performance of quantitative metrics of interest,such as task execution time, resource consumption, and total throughput within specified threshold values. This research presents a practical solution that is scalable, intelligent, and flexible enough to implement rapid transformations in the organization, improve efficiency, and automate business processes. © 2026 selection and editorial matter

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	EVALUATION OF THE ROLE OF AGE IN MMP 9 AND MMP 2 LEVELS IN PULPAL BLOOD OF TEETH WITH SYMPTOMATIC IRREVERSIBLE PULPITIS		Mr.PRANEETH REDNAM (TMDCH)
AUTHORS	PRANEETH REDNAM SARATH SARATHY S		
JOURNALNAME	JOURNAL OF ORAL BIOLOGY AND CRANIOFACIAL RESEARCH		
SNIP- 1.146	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

Aim: To assess MMP 2 and MMP 9 levels in pulpal blood of human molar teeth with symptomatic irreversible pulpitis in 2 different age groups.

Materials and methods: Patients of two age groups young [18-40] and old [>60] with symptomatic irreversible pulpitis in molars were included in this study. Teeth were isolated using a rubber dam. The rubber dam, clamp, and tooth were decontaminated using a cotton swab drenched in 1 % NaOCl solution. Access cavities were then prepared using a diamond-coated bur in a contrangle handpiece under water-cooling. Subsequently, the caries was excavated using a sterile round bur. Pulpal blood was collected from the pulp chamber by placing the blunt end of a sterile inverted 60 size paper point for 1 min. The paper point was transferred into a sterile microcentrifugation tube and frozen at -20 °C immediately until further processing. The levels of MMP-9 and MMP-2 in these samples were measured using commercially available specific enzyme-linked immunosorbent assay (ELISA) kits. Data was analysed using an independent t-test.

Results: The mean pulpal blood levels of MMP-9 in patients above 60 years (220 ng/ml) were significantly lower than those aged 18-40 years (468 ng/ml) ([p value <0.05]The mean pulpal blood levels of MMP-2 in patients above 60 years (134 ng/ml) were significantly lower than in those aged 18-40 years (153 ng/ml [p value < 0.05].

Conclusion: MMP-9 and MMP-2 levels in pulpal blood of cariously exposed teeth with irreversible pulpitis can vary with age.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	INFLUENCE OF ANAEMIA AND GESTATIONAL DIABETES CO-RELATED WITH BEHAVIOURAL CHANGES FOR QUALITY OF LIFE DURING PREGNANCY: HOLISTIC INTEGRATION OF CLINICAL AND PSYCHOLOGICAL INTERVENTIONS FOR BETTER PREGNANCY OUTCOMES		Mr.VARAGANTI SAI CHITRA PRATHYUSHA (PHARMACY)
AUTHORS	VARAGANTI SAI CHITRA PRATHYUSHA FATIMA GRACE X NARAYANASWAMY HARIKRISHNAN EVELYN SHARON SUKUMARAN S PREMA		
JOURNALNAME	INTERNATIONAL JOURNAL OF ADVANCED SCIENCE AND ENGINEERING		
SNIP-0.216	IMPACTFACTOR -	INDEXED- SCOPUS	

ABSTRACT

Anaemia and gestational diabetes mellitus (GDM) are prevalent comorbid conditions during pregnancy that significantly affect maternal health and fetal development. This study investigates the interrelationship between anaemia and GDM, their individual and synergistic influence on behavioural alterations, and the consequent implications for quality of life (QoL) among pregnant women. Conducted at a tertiary healthcare facility, this research integrates clinical assessments with psychological evaluations, employing standardized tools and biochemical markers to evaluate the impact of these conditions. The results reveal that women affected by both anaemia and GDM exhibit exacerbated mood disturbances, higher stress indices, and reduced physical vitality, which collectively diminish QoL. A holistic approach, combining timely clinical interventions and structured psychological counselling, demonstrated improved outcomes. These findings underscore the importance of interdisciplinary maternal care in mitigating pregnancy-related complications and enhancing overall well-being.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	ASSESSING AWARENESS AND ATTITUDES OF POSTGRADUATE RESIDENTS ABOUT ORGAN DONATION AND TRANSPLANTATION PROTOCOLS: A CROSS-SECTIONAL STUDY IN CHENNAI, SOUTH INDIA		Ms.B RESHKMA (ACSMCH)
AUTHORS	B RESHKMA L RAVI HOSAHOLALU V HARI PRASAD R SREEKUMAR G SUBBULAKSHMI		
JOURNALNAME	JOURNAL OF PUNJAB ACADEMY OF FORENSIC MEDICINE AND TOXICOLOGY		
SNIP-0.125	IMPACTFACTOR -	INDEXED- SCOPUS	

ABSTRACT

Organ transplantation is a vital solution for end-stage organ failure, yet India faces a critical shortage of donor organs. The need for the transplants is higher than the availability of organs and this gap is widening globally. India's organ donation rate falls well short of both the actual demand and the global average. This study aims to evaluate the knowledge, attitudes, and barriers related to organ transplantation among postgraduate residents at tertiary care centres in Chennai, South India. A cross-sectional, questionnaire-based study was conducted among 180 postgraduate residents, selected through stratified random sampling. A validated self-administered questionnaire was used to collect data. It asked about demographics, knowledge of regulatory Acts (THOTA), attitudes towards organ donation, perceived barriers, and suggested actions. Descriptive and inferential statistics, including chi-square tests, were used to analyze the data. The mean age of participants was 26.43 ± 2.12 years. Awareness of THOTA was reported by 68% of participants, with 60% receiving training on organ transplantation. Attitudes were varied, with 42.5% supporting mandatory donation and 50% willing to counsel donor families. Significant barriers included legal challenges (22.5%), cultural beliefs (21.2%), and lack of awareness (20%). Participants suggested educational programs (50%), policy changes (57.14%), and public awareness campaigns (25%) as key measures to address these challenges. The study identified critical gaps in knowledge, attitudes, and perceived barriers among postgraduate residents, though they were generally supportive of organ donation. It highlighted the need for targeted training programs, policy reforms, and public awareness initiatives. Addressing these challenges can enhance organ donation advocacy and bridge the gap between organ demand and supply, ultimately improving patient outcomes.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	CLINICO-MYCOLOGICAL PROFILE AND ANTIFUNGAL SUSCEPTIBILITY PATTERNS OF ZYGOMYCOSIS DURING THE COVID-19 PANDEMIC AT A TERTIARY CARE CENTER		Ms.SINDUJA S (SLMCH)
AUTHORS	SINDUJA S ANUPMA JYOTI KINDO MAJ PRASANNA KUMAR S		
JOURNALNAME	INDIAN JOURNAL OF MICROBIOLOGY RESEARCH		
SNIP-0.11	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

Background: Zygomycosis has emerged as a significant opportunistic fungal infection, with a marked increase in incidence during the COVID-19 pandemic, particularly among immune compromised individuals such as those with diabetes mellitus.

Aim: To analyze the clinico-mycological profile of zygomycosis and determine the antifungal susceptibility patterns, including the minimum inhibitory concentrations (MICs) of commonly used antifungal agents.

Materials and Methods: A total of 57 culture-positive clinical isolates suspected of zygomycosis were included. Specimens were collected from paranasal sinuses, bronchoalveolar lavage, bronchial wash, wounds, nasal swabs, and lung and brain tissues. Identification was done via culture, microscopy, and gene sequencing. Antifungal susceptibility testing for itraconazole, posaconazole, voriconazole, and amphotericin B was performed using the CLSI M38-A2 broth microdilution method.

Results: Rhizopus spp. was the predominant isolate (83%), followed by Apophysomyces variabilis (7%), Lichtheimiacyrmbifera (7%), and Cunninghamellabertholletiae (2%). Amphotericin B showed the highest efficacy among the studied antifungal agents, followed by posaconazole. Itraconazole and voriconazole was largely ineffective.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	EVALUATION OF THE IMMUNOHISTOCHEMICAL EXPRESSION OF OXIDATIVE DNA DAMAGE MARKER 8-OHDG IN ORAL CANCER		Dr.NADEEM JEDDY (TMDCH)
AUTHORS	KHADIJAH MOHIDEEN CHADRASEKARAN KRITHIKA NADEEM JEDDY PRATIBHA RAMANI MUTAZ ALI HASAN UMA SUDHAKAR		
JOURNALNAME	JOURNAL OF ORAL AND MAXILLOFACIAL PATHOLOGY		
SNIP-	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

Objective: The present immunohistochemical investigation attempted to evaluate the concentrations of 8-hydroxy-2-deoxyguanosine (8-OHdG) as a prospective DNA damage biomarker in primary oral squamous cell carcinoma (OSCC) patients compared to healthy tissues to analyse the immunohistochemistry (IHC) staining intensity levels across different histopathological levels of OSCC.

Materials and methods: The control group consisted of tissue samples from the normal mucosa (n = 10). The study groups consisted of tissue blocks sourced from patients with primary OSCC (n = 55). The principal antibody utilised was 8-OHdG Antibody, and a control specimen was treated identically to the OSCC group but treated in non-immune serum rather than the primary antibody. The data were estimated using the Statistical Package for the Social Sciences (SPSS) version 26.0. The Fisher's exact test was employed to examine the variations between the sample groups at a 5% significance level.

Results: The OSCC group had 20 well-differentiated (WD), 20 moderately differentiated (MD), and 15 poorly differentiated (PD) samples. Compared to normal tissue samples, a marked elevation of 8-OHdG antigen production was observed in OSCC tissue samples ($P < 0.0001$). The WD cohort showed moderate expression of the 8-OHdG antigen in 50%, mild in 30%, and intense in 20%. In MD samples, 5% showed intense expression, moderate in 55%, and mild staining in 40%. In PD samples, 46.67% showed mild and moderate 8-OHdG expression, whereas 6.66% showed intense expression. However, the difference was insignificant ($P > 0.05$).

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	SHAPING THE FUTURE OF DENTAL EPIDEMIOLOGY: THE ROLE OF ROBOTICS AND AUTOMATION IN DATA- DRIVEN ORAL HEALTHCARE	
AUTHORS	KEERTHANA KESAVAN MYTHRIYEE B G VIDHYA REKHA UMAPATHY VINOTHINI VIJAYARAGAVAN KEERTHIKA KARUNAKARAN DHANASREE VETTATHU SANKAR NARAYANAN R RAJKUMAR DENSINGH SAMUEL RAJ	
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)	
SNIP-	IMPACTFACTOR - NIL	INDEXED- SCOPUS



**Ms. KEERTHANA
KESAVAN
(AMRI)**

ABSTRACT

The incorporation of robotics into dental epidemiology offers a new paradigm in terms of public oral health. Data collection and diagnosis have been traditionally based on human efforts subject to variability in human behavior, inaccuracies via manual methods, as well as access to the patient. Robotic systems are increasingly supplementing data collection and diagnosis in public oral health areas. These systems may vary in type from chairside diagnostic robots, to intraoral scanners, robots as mobile units, as well as educational/simulation robots. For all cases, robotics is associated with a level of precision, standardization, and reach not previously seen in dental or public health care contexts. Robotics provides reproducible oral health assessments, streamlines data collection for research studies, and offers remote diagnostics, especially for communities experiencing inequities in health. Other applications for robotics during clinical diagnostics, oral health status assessments, oral health rehabilitation, education, and surgical treatment procedures for cancers further illustrates the array of utility for robotics for prevention and treatment activities. While benefits are substantial, so too are concerns for safety, cost, quality of training, regulatory governance, and ethics such as data use and security, and human workforce displacement. While the field advances, guidelines for implementing, deploying, managing or administering robotics should be founded on evidence-based policies and participatory design principles to inform equitable, efficient, and safe public self-care options. This review article is intended to provide insight into the current state of dental robotics and the prospective effort to characterise and shape a healthier future for oral public health as a field based on a data-discipline and accessibility

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	FRACTIONAL ORDER PID CONTROLLED HYBRID CUK CONVERTER FOR ELECTRIC VEHICLE	
AUTHORS	NALLAMILLI P. G. BHAVANI S. DINAKAR RAJ KESAVAN SUJATHA N. NAVAPRAKASH D. EZHILARASAN	
JOURNALNAME	INTERNATIONAL JOURNAL OF APPLIED POWER ENGINEERING	
SNIP-	IMPACTFACTOR - NIL	INDEXED- SCOPUS



Dr.KESAVAN
SUJATHA
(EEE)

ABSTRACT

Choosing the right controller with the right approach is one of any power converter's biggest concerns. In order to optimise induction heating, a hybrid Cuk converter with a fractional-order proportional integral derivative (FOPID) controller is built. The findings show an improved time domain responsiveness in the FOPID controlled closed-loop hybrid DC-DC converter (CDHC) system. In order to improve the interface between the resonant inverter and DC source and to step up voltage with less output ripple, Cuk converters are used. The research project is concerned with modelling and simulating a hybrid closed-loop DC converter system. The findings show an improved time domain responsiveness in the FOPID controlled CDHC system. The suggested approach offers advantages such as high-power density and buck boost capability. After being inverted, the Cuk converter's output is applied to a DC load. The time responses of the closed loop proportional integral (PI) and FOPID controlled homogeneous charge compression ignition (HCCI) systems are compared. The hardware is implemented and tested for the CDHC system for electric vehicles. The results indicate that the FOPID controlled CDHC system has enhanced time response and benefits such as high-power density buck boost ability.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	A SELF-EVOLVING MULTI-AGENT ROBOTIC SWARM WITH REINFORCEMENT LEARNING AND QUANTUM FIREFLY-ANT COLONY OPTIMIZATION FOR ADAPTIVE ENVIRONMENTAL MONITORING		 Mr. VINOTHKUMAR ARUMUGAM (ECE)
AUTHORS	VINOTHKUMAR ARUMUGAM MARGABANDU ANAND B. RAJA ANU PRIYA GEORGE S MARIA SARLINA		
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)		
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED - SCOPUS	

ABSTRACT

This paper presents a self-evolving multi-agent robotic swarm for adaptive environmental monitoring in unstructured and dynamic terrains, addressing limitations of existing swarms that rely on static policies and centralized control. Integrate Vision Transformers (ViTs) within a decentralized multi-agent reinforcement learning (MARL) framework, enabling each robot to extract robust spatial and temporal features from on-board visual data, essential for complex task adaptation To optimize swarm behaviour and task allocation dynamically, develop a Hybrid Quantum Firefly-Ant Colony Optimization (HQFF-ACO) algorithm that merges firefly-inspired attraction and ant pheromone-based exploration enhanced by quantum-inspired encoding for faster convergence and better avoidance of local optima. The primary objective is to achieve scalable autonomy, efficient terrain coverage, and resilient obstacle avoidance. Extensive simulations and real-world field trials show that our swarm achieves over 20 % increase in coverage efficiency and 30 % faster task completion compared to baseline MARL-controlled and heuristic-optimized swarms. These gains stem from the ViT-driven feature extraction that improves decision-making in visual-rich environments, and the HQFF-ACO module that evolves optimal task assignments in real-time. The results demonstrate that this hybrid learning and optimization approach fosters robust, emergent cooperation without global coordination making the system well-suited for environmental monitoring applications such as habitat mapping, pollution detection, and disaster assessment. Proposed system paves the way for scalable, intelligent robotic swarms capable of real-time adaptation in complex, real-world environments

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

PAPERTITLE	SMART SYSTEMS POWERED BY K-NEAREST NEIGHBORS (KNN) AND BIDIRECTIONAL LSTMS FOR REAL-TIME DATA PROCESSING		Ms.MEENAKSHI S (CSE)
AUTHORS	RUKMANI DEVI S SELVARAJU P RAMPRASAD R MEENAKSHI S GOVINDASAMY C RAJASEKAR M		
JOURNALNAME	MATHEMATICAL METHODS IN ARTIFICIAL INTELLIGENCE		
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS	

ABSTRACT

Growing demands for smart and sensitive systems in industries such as healthcare, finance, and smart infrastructure have imposed growing demands on efficient means of real-time data processing. The paper suggests the adoption of a hybrid intelligent system through the marriage of K-nearest neighbors (KNN) and bidirectional long short-term memory (BiLSTM) networks as a means of enabling enhanced performance of classification in the management of dynamic contexts of data. The method is the combination of preprocessing and normalization of real-time streaming data, context-relevant temporal feature extraction, and utilization of a BiLSTM sequence learning and subsequent KNN-based classification layer. The two-model approach combines the low-latency characteristics of KNN with temporal feature awareness provided by BiLSTM to give high-accuracy, low-latency decisions. Experimental results demonstrate that the proposed hybrid model is superior to independent models in possessing a 94.7% classification and 0.93 F1 value with the identical latency measure of 42 ms, but also within reasonable thresholds for practical employment in real-time applications. Importance-based analysis involving XGBoost and random forest indicates that temporal frequency and intensity of signal are the dominant features affecting model responses. Confusion matrix metrics also estimate the system reliability with hardly any false classification. The outcomes reveal that the KNN-BiLSTM hybrid model is a scalable and efficient solution for smart systems in real-time awareness of data.

Dr. M.G.R. RESEARCH PUBLICATION APPRECIATION –SEPTEMBER 2025

RESEARCH COUNCIL		
PAPERTITLE	ANESTHESIA FOR ROBOTIC SURGERY: NAVIGATING HEMODYNAMIC, RESPIRATORY AND POSITIONING CHALLENGES	
AUTHORS	S SARANYA T SREELEKHA J DEEPTHI	
JOURNALNAME	2025 IEEE 6TH INTERNATIONAL CONFERENCE IN ROBOTICS AND MANUFACTURING AUTOMATION (ROMA)	
SNIP-	IMPACTFACTOR -	INDEXED-

Ms.S SARANYA (SLMCH)

ABSTRACT

Robotic surgery has moved forward and is currently highly significant to all medical professional, because they provide unmatched precision, minimally invasive and better patient outcome. As the surgical field develops further, anesthesiologists are essential to maintaining patient safety, maximizing results and managing anaesthesia is made more difficult and challenging by the intricate nature of these procedures. Requirements for patient positioning can lead to several difficulties and have a major physiological impact. Cardiovascular and respiratory efficiency can be severely compromised by the physiological changes pneumoperitoneum, patient posture (Trendelenburg and reverse Trendelenburg position) and extended surgical periods. Reduced lung compliance, ventilation-perfusion mismatch, raised airway pressures, increasing the risk of hypercapnia and hypoxaemia are frequently the causes of compromised breathing. Airway and facial edema, especially during prolonged procedures, makes airway management even more difficult, whereas increased intra-abdominal pressure and position-induced alterations in venous return may lead to hemodynamic instability. In addition, the risk of peripheral nerve injury, pressure sores, and ocular problems is increased by the rigid positioning required to perform robotic access. Major peri-operative factors in robotic surgery are discussed in this study, along with methods for maximizing hemodynamic (cardiac output, systemic vascular resistance) that ensures adequate breathing (airway pressure, gas exchange) while decreasing difficulties caused by positioning. Anesthetic management requires a proper preoperative assessment, ventilator settings, careful hemodynamic monitoring, and strategies to minimize complications which is associated with patient positioning. Increased interaction with the surgical team and the ability to troubleshoot limited access to the patient throughout the process are critical for robotic surgery for ensuring patient safety and the best outcomes

RESEARCH COUNCIL		
PAPERTITLE	ANTI-GOUT, ANTI-INFLAMMATORY AND ANTIOXIDANT POTENTIAL OF ONION JUICE POWDER – AN IN VITRO APPROACH	
AUTHORS	PREETHA S ANITHA ROY	
JOURNALNAME	RESEARCH JOURNAL OF PHARMACY AND TECHNOLOGY	
SNIP-NIL	IMPACTFACTOR - NIL	INDEXED- SCOPUS

Ms.PREETHA S (SLMCH)

ABSTRACT

Medicinal plants have been widely studied over the years, focusing majorly on their active phytochemical constituents and their inherent properties which contribute to the desirable pharmacological benefits. Onion is a culinary medicinal plant rich in phytochemical constituents. The aim of the study was to evaluate the anti-inflammatory and antioxidant activity of onion juice powder. Antigout potential was assessed using xanthine oxidase inhibitory activity. In vitro anti-inflammatory activity of onion juice powder was carried out using HRBC membrane stabilization method and Protein denaturation Inhibitory assay. The antioxidant activity was evaluated by DPPH assay as well as Nitric oxide inhibitory assay. Here the standard used was Vitamin C. One way ANOVA was used in the statistical analysis, and Duncan's multiple range test was used to determine the significance of each individual change between the groups. Significance was assessed in Duncan's test at the $p < 0.05$ level. The Xanthine oxidase inhibitory effect of onion juice powder was dose dependent as the concentration increased the xanthine oxidase inhibitory effect also increased. The onion juice powder also showed a dose dependent anti-inflammatory activity by inhibiting albumin denaturation in the study. The percentage of hemolysis decreased with increased concentration of the onion juice extract showing its excellent anti-inflammatory effect in this model. The juice powder extract also showed good antioxidant activity in the concentration range used for the study. The results of the study showed that this culinary plant has good antigout, anti-inflammatory and antioxidant property and can be included in the regular diet as a home remedy to support its traditional use.

PAPERTITLE	COMPARATIVE OUTCOME ANALYSES OF SUBCHONDRAL VS INTRA-ARTICULAR BONE MARROW ASPIRATE CONCENTRATE IN PRIMARY OSTEOARTHRITIS KNEE: A DOUBLE-BLINDED RANDOMIZED CONTROLLED TRIAL PROTOCOL	
AUTHORS	ARULKUMAR NALLAKUMARASAMY SANDEEP SHRIVASTAVA RAVI VELAMOOR RANGARAJAN NAVEEN JEYARAMAN SWAMINATHAN RAMASUBRAMANIAN SATHISH MUTHU DR MADHAN JEYARAMAN	
JOURNALNAME	WORLD JOURNAL OF EXPERIMENTAL MEDICINE	
SNIP- 0.503	IMPACTFACTOR - NIL	INDEXED- SCOPUS



**DR MADHAN
JEYARAMAN
(ACSMCH)**

ABSTRACT

Background: Knee osteoarthritis (OA) imposes a substantial burden through pain, functional limitation, and progressive cartilage loss. Bone marrow aspirate concentrate (BMAC) has emerged as a promising regenerative therapy for OA due to its rich composition of mesenchymal stromal cells (MSCs) and bioactive factors. While intra-articular BMAC injections provide short-term symptomatic relief, recent literature suggests that targeting the subchondral bone-an area crucial to OA progression-may offer superior and longer-lasting clinical benefits.

Aim: To compares the outcomes of subchondral vs intra-articular BMAC injections in patients with primary knee OA.

Methods: In this unicentric, double-blinded, randomized controlled trial, 30 patients with radiologically confirmed primary knee OA (Kellgren-Lawrence grades II and III) will be equally randomized to receive either subchondral (Group A) or intra-articular (Group B) BMAC injections. BMAC will be harvested from the posterior iliac crest, processed using a standardized centrifugation protocol to yield a product with > 85% cell viability, and administered under image guidance. The primary outcome is the change in pain intensity at 12 months as measured by the Visual Analog Scale (VAS). Secondary outcomes include functional improvement assessed by Knee Injury and Osteoarthritis Outcome Score (KOOS), International Knee Documentation Committee (IKDC), and Western Ontario and McMaster Universities Arthritis Index (WOMAC) scores, structural changes evaluated through advanced magnetic resonance imaging using (MRI) the whole-organ MRI Score, and safety as determined by the incidence of adverse events.

PAPERTITLE	COMPARATIVE OUTCOME ANALYSES OF STROMAL VASCULAR FRACTION VS NANOFAT IN PRIMARY OSTEOARTHRITIS KNEE: A DOUBLE-BLINDED RANDOMIZED CONTROLLED TRIAL PROTOCOL	
AUTHORS	NAVEEN JEYARAMAN SANDEEP SHRIVASTAVA RAVI VELAMOOR RANGARAJAN ARULKUMAR NALLAKUMARASAMY SWAMINATHAN RAMASUBRAMANIAN SATHISH MUTHU DR MADHAN JEYARAMAN	
JOURNALNAME	WORLD JOURNAL OF EXPERIMENTAL MEDICINE	
SNIP-0.503	IMPACTFACTOR -	INDEXED- SCOPUS



**DR MADHAN
JEYARAMAN
(ACSMCH)**

ABSTRACT

Background: Osteoarthritis (OA) of the knee is a prevalent degenerative joint disease that significantly impairs quality of life and functional mobility. Emerging regenerative therapies, such as stromal vascular fraction (SVF) and nanofat, have demonstrated potential in cartilage repair and symptom alleviation. However, comparative clinical evidence evaluating their efficacy and safety remains limited.

Aim: To compare the clinical outcomes of SVF vs nanofat therapy in patients with primary knee OA.

Methods: Conducted at Mother Cell Regenerative Centre, Trichy, over 18 months (June 2025 to December 2026), the study will enroll 30 patients, randomly assigned to two groups of 15 each. Both interventions will be administered as a single intra-articular injection under sterile conditions, with cell viability (> 85%) confirmed by a standardized assay. Group A will receive autologous SVF injections, while Group B will receive autologous nanofat injections. The primary outcome measure is the change in pain scores at 12 months using the visual analog scale (VAS). Secondary outcomes include functional improvement assessed by Osteoarthritis Outcome Score (KOOS), Western Ontario and McMaster Universities (WOMAC), and International Knee Documentation Committee (IKDC) scores, cartilage regeneration evaluated *via* magnetic resonance imaging with colour coded mapping of the cartilage volume (MR cartigram), and monitoring of adverse events

RESEARCH COUNCIL		
PAPERTITLE	STRUCTURAL, ANTICANCER AND ANTIOXIDANT STUDIES OF 1-OXOMELAMINE AND ITS COPPER(II) COMPLEX	
AUTHORS	S VENNILA K DEEPA K S NAGARAJA L LAKSHMI C KARNAN	
JOURNALNAME	NEXT MATERIALS	
SNIP-0.493	IMPACTFACTOR – 4.7	INDEXED-SCOPUS/WOS



Dr.K S NAGARAJA
(ARI)

ABSTRACT

The condensation of melamine with 2-benzoylpyridine yielded a Schiff's base(L1, MBP). The product showed the characteristic IR and NMR spectral peaks due to ketimine(>CdoublebondN), aromatic ring and –NH₂groups. ¹⁵NMR of MBP indicated –NH₂(82.51 ppm), melamine nitrogen(174.52 ppm) and pyridine nitrogen (316.59 ppm). When MBP ligand was refluxed with Cu²⁺ in ethanol yielded 1-oxomelamine(L2), an oxidized product of MBP which formed a complex [Cu(L2)₂(H₂O)]·H₂O (L2=1-oxomelamine). The elemental analyses and TG-DSC inferred that one of the –NH₂ groups of melamine is oxidized. The deprotoned oxygen coordination, ring nitrogen and the aqua ligand complete five coordination of Cu²⁺. The photoluminescence showed intense emission peaks at 544 and 572 nm on excitation at 265 and 280 nm. The complex showed higher intense emission peaks than the ligand (MBP). This is due to vibrational relaxation occurring via d→d energy levels while relaxing to the ground state. The EPR spectrum at LNT showed hyperfine splitting in the gll component of the Cu²⁺centre, showing a square pyramid geometry. TG-DSC showed a loss of two water molecules. The anticancer activity by MTT assay method indicated that IC₅₀ value is 38.5 μM, indicating a good anticancer activity. The antioxidant properties of the complex was investigated by DPPH assay, FERA and SOD activity studies

RESEARCH COUNCIL		
PAPERTITLE	APPLICATION OF INDUSTRIAL WASTE IN SELF-COMPACTING CONCRETE: A MACHINE LEARNING AND GENETIC ALGORITHM APPROACH	
AUTHORS	PARTHIBAN FELIX KALA THOMASMATHIYAS	
JOURNALNAME	MATHEMATICAL METHODS IN ARTIFICIAL INTELLIGENCE	
SNIP-	IMPACTFACTOR – NIL	INDEXED- SCOPUS


**Mr.PARTHIBAN
(CIVIL)**

ABSTRACT

This paper explores the use of industrial waste on SCC with an optimum mix design using genetic algorithm and machine learning to produce better performance and sustainability. The compressive strength and workability were also foreseen by RFR models with R2 values of 0.74 and 0.335, respectively. The models have also identified industrial waste and cement as the most significant strength factors, with maximum workability contribution from fly ash and industrial waste. Genetic algorithm optimized mix design was used to reduce the cement content from 400 to 340 kg/m³ and raise the industrial waste content to 25%. The optimized mixture attained 35.2 MPa compressive strength, 110 mm workability, and reduced CO₂ emissions of 370 kg/m³, a 25% decrease compared to the traditional mixes. The above findings confirm the ability of ML and GA to optimize green SCC through minimizing the quantity of cement consumption and waste reuse to their maximum potential according to the circular economy concept. The average prediction accuracy at the workability level means that the model needs to be calibrated, and this is possible with increased algorithm complexity or amount of data. In this article, the paradigm-shifting potential of computational techniques toward future high-performance concrete for the needs of contemporary construction and environment-friendly substitutes for infrastructure is presented



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