

PROCEEDING OF INTERNATIONAL CONFERENCE 2025

HYBRID EVENT

15th November 2025

Organized By



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Editorial

We are delighted to extend a warm welcome to all participants attending the International Conference 2025 on 15th November 2025. This conference provides a vital platform for researchers, students, academicians, and industry professionals from all over the world to share their latest research results and development activities in multidisciplinary fields. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for International Conference 2025 contain the most up-to-date, comprehensive, and globally relevant knowledge across various disciplines. All submitted papers underwent rigorous peer-reviewing by 2-4 expert referees, and the papers included in these proceedings were selected for their quality and relevance to the conference. We are confident that these proceedings will not only provide readers with a broad overview of the latest research results but also serve as a valuable summary and reference for further studies.

We are grateful for the support of many universities and research institutes, whose contributions were vital to the success of this conference. We extend our sincerest gratitude and highest respect to the professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also appreciate the efforts of the technical program committee, reviewers, and authors for their dedication.

Since September 2025, the Organizing Committee has received more than 55 manuscript papers, covering various aspects of multidisciplinary research. After review, approximately 15 papers were selected for inclusion in the proceedings of International Conference 2025.

We thank all participants for their significant contribution to the success of the conference. Our gratitude extends to the keynote speakers, individual speakers, technical program committee, reviewers, and the organizing committee for their efforts in making this conference a reality.

Acknowledgement

The International Conference 2025, was successfully held in 15th November 2025. We extend our heartfelt gratitude to our colleagues, staff, professors, reviewers, and members of the organizing committee for their unwavering support in making this conference a success.

We would also like to thank all the participants who traveled far and wide to attend this conference and those who attended the event virtually, making it a truly global event. This conference provided a platform for students, professionals, researchers, and scientists to share their latest research and developments in various disciplines.

The aim of the conference was to promote research and development activities and to encourage scientific information exchange between researchers, developers, professionals, students, and practitioners from all around the world. Once again, we thank everyone who contributed to making this conference a resounding success.



President

Society For Education (SFE)

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|Abstracts

River to Resource: A Study of Mahi river for its Best Designated use using WQI and CPCB Framework

Megha Patel

School of Earth Sciences, Banasthali Vidyapith, Rajasthan, India

Abstract:

This research sought to thoroughly assess the existing pollution levels in the Mahi river and determine the suitability of the river water for various applications. Water quality monitoring was conducted monthly at three different sampling locations (S1–S3), ranging from upstream to midstream of the river stretch, throughout the entire year (2023), assessing ten water quality parameters. The weighted arithmetic Water Quality Index (WQI) method was integrated with CPCB standards to evaluate overall water quality. WQI assessment classified water quality at every location as “Good.” Nevertheless, according to CPCB standards, the evaluated water quality parameters indicate that, the water quality at S1 is suitable for drinking, whereas the quality at S2 and S3 is appropriate for bathing. Therefore, WQI based on CPCB criteria offers empirical information that assists local authorities and policymakers in managing water resources and ensuring their sustainable use.

Keywords:

Mahi River, Water Quality Index (WQI), CPCB criteria, River Pollution, Water resource management.

Livelihood Sustainability of Handloom Weavers in Manipur: The Prospect and Challenges

Dr. A Jolly Devi

Department of Adult Continuing Education and Extension, Manipur University, Canchipur Imphal, India

Abstract:

Handloom is the source of livelihood to several million of artisans and their families. Sustainability is the ability of individuals or communities to maintain and improve their means of livelihood. The main objective of this paper is to study the prospects and problems of livelihood sustainability of handloom weaver in Leimapokpam Village, Manipur, India. Leimapokpam Village in Manipur is known for Wangkhei Phee weaving in Manipur. The study is based on qualitative data, Data were collected from 100 respondentwangkheiphee weavers through convenient Sampling. The Study has used the sustainable Livelihood Framework (SLF) for the data collection. SLF is an approach which has gained acceptance, it is a tool for analysing the level of development and creating new initiatives for future growth. The questionnaire included both close and open-ended questions. The study shows the ability of individual weaver to maintain and improve their means of living. The cultural heritage of Manipur is also represented by handloom and handicraft items in textiles sector. Manipuri handlooms sari has its own unique place in the demand segment of sari in India. The locally specific handloom products namely Wangkhei Phee, Rani Phee, Mayek naibi, Khudei, Pheijom which are worn in rituals, festival, ceremonies, fashion show are in great demand and in fashion trend too. The handloom sector gives employment to the number of population and also contributes to the state economy. It was further observed that all the studied weavers relied on middle men for marketing their products. Wangkhei phee being a Geographical Indication (GI) Tag product can have more marketing prospects at the national and international level. Sari is a common Indian attire and have avenue in fashion and daily wear so wangkhei sari can boost the weaver's livelihood better.

Keywords:

Framework, Livelihood, Manipur, Sustainability, Wangkhei phee Weavers.

Optimizing PMUs Location for Identification of Single-line-to-Ground Faults with Line Break using GSA-PSO Algorithm

Renu Kumari

Government Engineering College Bikaner, Rajasthan, India

Abstract:

Transmission and distribution systems are highly vulnerable to single-line-to-ground faults accompanied by line breakage (SLGF-LB). Since the electrical characteristics at the source side of SLGFs are largely similar and the operating conditions of distribution networks vary significantly, distinguishing SLGF-LBs from conventional SLGFs becomes particularly challenging in resonant or ungrounded grounding environments. To address this issue, this work introduces a novel fault detection strategy that integrates Phasor Measurement Unit (PMU) data with hybrid Particle Swarm Optimization (PSO) and Gravitational Search Algorithm (GSA) techniques for optimal and adaptive PMU placement. This hybrid approach enables reliable differentiation between SLGFs and SLGF-LBs by analysing source-side and load-side voltage behaviours. Specifically, the phase angle deviation between the faulted and healthy phases on the load side is employed as the key discriminating criterion. Extensive simulation results confirm the accuracy, resilience, and practical applicability of the method. Overall, the proposed framework enhances fault identification capability and strengthens the operational reliability of distribution networks by precisely characterizing ground faults associated with line breakage.

A Study on Advanced Power Electronics and Control Technologies for Enhancing Renewable Energy Generation and Storage Systems

Suresh N

Research Scholar, Bharath Institute of Higher Education & Research, Chennai, India

M K Ilampooran

Professor-EEE Bharath Institute of Higher Education & Research, Chennai, India

Abstract:

The renewable energy (REN) sources integration like solar and wind into prevailing power grids has become increasingly vital for achieving global sustainability targets. However, effective grid integration poses practical issues because of the erratic and alternative nature of renewable sources and their interface requirements. Central to this integration are power electronics converters, which facilitate efficient and reliable energy conversion while offering the high degree of controllability and flexibility demanded by modern power systems. This study offers a comprehensive outline of strategies for grid integration especially for large-scale generation of REN through power electronics. It examines the technical requirements and operational considerations of integrating key REN sources, as well as energy storage solutions. Special attention is given to control mechanisms, spanning from individual converter-level control (such as general current control strategies) to system-level coordination for maintaining stability, reliability, and efficiency in large, interconnected networks. The paper also explores future research directions aimed at addressing critical issues such as synthetic inertia, harmonics mitigation, and the development of robust, scalable, and adaptive control systems and the integration of REN through power electronics including converters, control systems, and communication infrastructure should likewise account for the environmental impacts from an LCA sustainability perspective. Stress is positioned on the growth of smart grid knowledges, and unified energy management systems. These innovations are vital for transitioning towards a robust and flexible power grid proficient of supporting high levels of renewable penetration.

Keywords:

Grid integration, renewable energy, power electronics converters, system inertia, wind energy, solar PV, energy storage, current control, coordinated operation, smart grid, synthetic inertia, grid stability, control strategies.

Flexible Work Arrangements: Global Trends and Future Implications

Karamwant Kaur

Research Scholar, School of Management, Maharaja Agrasen University, Atal Shiksha Kunj, Village, Kalujhanda, Baddi, Distt. Solan, Himachal Pradesh, India

Abstract:

Flexible work arrangements represent a departure from traditional fixed schedules and office locations, offering employees greater autonomy over when, where, and how they work. This paper explores the current state of flexible work arrangements across various countries – including the USA, UK, Germany, Japan, Australia, New Zealand, and India – examining the policies, benefits, challenges, and cultural attitudes influencing their implementation. With the rise of telecommuting, flexitime, compressed workweeks, job sharing, and part-time work, FWAs have transformed the traditional work culture globally. While FWAs offer numerous benefits, including increased productivity and employee satisfaction, they also pose challenges in management, communication, technology, and equity.

Keywords:

Flexible Work Arrangements, Flexitime, Flexplace, Global Culture.

Study on the Quality, Relevance and Comparability of Youtube Videos on Stroke: A Cross-Sectional Analysis

Dr. Manoj M N

Rajiv Gandhi University of Health Sciences, Bangalore, India

Abstract:

Background and objective: Stroke-related deaths have been one of the major causes of death worldwide due to its rising risk factors. As a result, several people rely on YouTube as a great source of information on stroke without knowing the genuineness of the content. This study aims to assess the quality and reliability of the information on stroke uploaded on the YouTube platform using the Global Quality score (GQS) and DISCERN score (DS), respectively.

Methodology: A cross-sectional observational study was conducted in April 2023. Stroke-related keywords were used to search for videos on YouTube. Videos that met inclusion criteria were evaluated for baseline characteristics (likes, comments, views, duration of video, time since posted, and uploader type) and type of information in the video about stroke (symptoms, etiology, treatment, and other parameters). These videos were then evaluated for quality and reliability of information using GQS and DS, respectively.

Results: After applying inclusion and exclusion criteria and removing the duplicates, 73 YouTube videos were selected. The videos had a total number of 23,927,445 views, 385,324 likes, and 31,927 comments. Maximum videos were uploaded by hospitals (25, 34.2%). Several videos described the symptoms (54, 73.97%), treatment (50, 68.49%), and etiology (49, 67.12%) of stroke. The reach of videos measured by the Video Power Index (VPI) was highest for videos uploaded by healthcare organizations (mean VPI = 120.11). There was no statistically significant difference ($P > 0.05$) in the quality (GQS score) and reliability (DS) of videos uploaded by doctors, hospitals, healthcare organizations, and news channels.

Conclusions: YouTube can become an important source to disseminate information about health-related conditions like stroke if the videos uploaded are of high quality (GQS score) and reliable (DS).

Evaluation and Comparison of Mechanical Properties of Nanoparticles Coated Mini-implants

Bindu Priya Siddamreddy

Senior Lecturer, Malla Reddy Dental College for Women, Hyderabad, Telangana

Abstract:

Mini-implants are indeed sweeping orthodontic treatment because they offer excellent anchorage advantages. However, the risk of fracture is still an issue of concern. This paper aims to assess the impact of nanocoating's on the stability of mini-implants. Thirty-six mini-implants were divided into three groups: They include the uncoated, the zinc oxide nanoparticles-coated, and the silver nanoparticles-coated mini-implants groups. Insertion and removal torque values were assessed with the help of a torque-measuring screwdriver on synthetic bones. Using descriptive statistics, the results showed that coated implants had lower torque values compared to uncoated implants. In the present study, it was found that the implants coated with zinc oxide and silver nanoparticles exhibited comparable results with regards to the values of insertion torque; however, there were statistically significant differences concerning the removal torque. These findings also provide scientific evidence for the utilization of coated mini-implants to improve stability and reduce the incidence of fractures.

Effect of Dentrifices on Roughness of Acrylic Resins

Rajat R Khajuria

Indira Gandhi Govt Dental College Jammu, Jammu and Kashmir

Sidhant Sudan

Indira Gandhi Govt Dental College Jammu, Jammu and Kashmir

Abstract:

The use of acrylic resins began in the 1950s and still is the material of choice because of the ease of manipulation and maintenance, economical, and less stress transmission to underlying tissues.¹ The acrylic resins are polished mechanically with the sequence of certain finishing and polishing abrasives to produce a high mirror-like finish called "Beilby layer." This high finish prevents the accumulation of food debris and microorganisms on the denture surfaces.² Poor denture hygiene is a common problem encountered by dentists in complete denture patients which may contribute to halitosis, denture stomatitis, and angular cheilitis.³⁻⁵ Denture stomatitis has been reported in 11 to 67% of complete denture wearers,⁶ associated with *Candida albicans*.⁷ Davenport and Budtz- Jorgensen stated that in cases of denture stomatitis, *C. albicans* colonies are recovered more frequently from the tissue-fitting surface of the acrylic resin denture as opposed to corresponding palatal mucosa.⁸ The use of denture cleansing solutions or tablets is recommended for removal of plaque and microorganisms, but still the cleaning of dentures with a toothbrush and toothpaste under running water is the most common technique employed by denture wearers. Although the technique employed is easy and economical, this causes abrasion of acrylic resin leading to loss of Beilby layer followed by abrasion of acrylic resin and affecting surface roughness, color, and biofilm accumulation capability of resins.^{4,5} Normally, dentifrices available in the local market have water, sodium lauryl sulfate as detergent, foaming agent, color, flavoring agent, saccharin as a sweetening agent, binders, and abrasives.⁷ Most commonly used abrasives in toothpaste are calcium carbonate, silica, or charcoal. Denture cleansers have sodium perborate and sodium bicarbonate which increase alkalinity of water and remove debris or citric acid, which increases acidity to remove stains from denture surfaces. ⁸ Several studies⁹⁻¹² have proven the association of *C. albicans* and denture surfaces, but, to our knowledge, no study has been conducted to study the abrasive capacity of commonly used commercial brands of dentifrices on the acrylic resins. This study is conducted on the effect of three commonly available dentifrices and distilled water on the abrasive capacity of acrylic resins, and their effect on the surface roughness of acrylic resins is calculated. Null hypothesis states that no difference exists in the effect of dentifrices on the roughness of acrylic resins.

Is Cellular Phone a Source of Infection?–A Hospital Based Study Among Dentists in Ajman and Sharjah, UAE

Prathibha Prasad

Lecturer and Specialist A, College of Dentistry, Gulf Medical University, Ajman, UAE

Mohanlal Bhat

Central Research Laboratory, Gulf Medical College Hospital and Research Centre, Ajman, UAE

Sura Ali Ahmed Fouad Al-Bayati

Assistant professor, College of Dentistry, Gulf Medical University, Ajman, UAE

Abstract:

This study was carried out to know the different micro-organisms harboring the cell phones of health care persons working in the dental centre of our hospital and to determine what are the potential pathogenic organisms transmitted via mobile phones. An interviewer-administered questionnaire was used for data collection. Two samples were collected by rotating the swabs over all the surfaces of cell phones; one without any sterilization and second sample after decontaminating the cell phone using isopropyl alcohol in the morning. The swabs were inoculated and streaked onto five per cent sheep blood agar, Mac-Conkey agar and chocolate agar. Isolated organisms were processed according to colony morphology and gram stain. Tests for identification of gram positive cocci included catalase, Oxidative/ Fermentative test, anaerobic mannitol fermentation and coagulase production. Tests for identification of gram negative bacilli included catalase, oxidase and other relevant biochemical tests (API 20E). In the samples taken without prior decontamination, 40% of the samples did not show any growth. Staphylococcus species dominated the growth in the remaining specimens. Gram positive bacilli, Pantoe species and Enterobacter Cloacae were also found. In the samples taken with prior decontamination at the beginning of the day, 36% of the samples did not show any growth. Staphylococcus species dominated the growth in the remaining specimens. Gram positive bacilli, Micrococci and Citrobacter Freundii were also found. Since dental aerosols are proven risk factor; any method of reducing aerosols and airborne contamination should be employed along with regular decontamination of cell phones.

Keywords:

Cellular phone, dentists, aerosols, source of infection, pathogenic organism.

Nanotechnology: A Changing Face in Modern Era.c

Anvitha Sharath Kumar

Department of Periodontia, Farooqia Dental College, Mysore. Karnataka, India

Lavanya R

Department of Periodontia, MS Ramaiah Dental College and Hospital, MSRIT Post. Bangalore, Karnataka, India

Abstract:

The tremendous growth in scientific and innovative research has provoked scientists to concentrate on the field of regenerative medicine and tissue engineering to construct a biological substitute that will restore and maintain the normal function in diseased and injured tissues. Since then, nanotechnology has been a part of mainstream scientific research with potential medical and dental applications. Nanomedicine helps in the development of devices that are able to work inside the human body to identify the early presence of a disease and quantify toxic molecules [tumor cells]. Nanodentistry will make possible the maintenance of comprehensive oral health by employing nanomaterials and, ultimately, dental nanorobots.

Keywords:

Nanodentistry, nanotechnology, nanorobots, nanomaterials.

Intraoral X-Ray Films–A Walk through History

Rakhi Issrani

Department of Oral Medicine and Radiology, Saraswati Medical and Dental College, Lucknow, Uttar Pradesh, India

Abstract:

Periodic and comprehensive oral evaluations at dental clinic frequently employ the use of radiographs to help visualize the teeth and surrounding areas in ways not possible via the naked eye; but radiation exposure also presents many potential hazards and for this reason it should be clinically justified. Even though the relative risks associated with dental radiography are quite low maintaining good, safe radiation procedures at all times is the dentist's professional responsibility and he/she should take care of the same and this will be beneficial to both the patient and especially the dentists who have long term exposure to X-rays. Hence, in this article special focus has been given on the protocols followed till date and we have tried to create awareness regarding same.

Keywords:

Dental, Dentists, Films, Intraoral, Patient selection, Radiography.

Feasibility of CBCT in Evaluating Bone Density of Dental Implant Placement Sites

Yassir Elkhidir

Department of Oral Implantology, Stomatology Center, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, P.R. China

Sun Wei

Department of Oral Implantology, The Central Hospital of Wuhan, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, P.R. China

Li Suyang

Department of Oral Implantology, Stomatology Center, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, P.R. China

Mengqing Xie

Department of Oral Implantology, Stomatology Center, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, P.R. China

Cheng Yang

Department of Oral Implantology, Stomatology Center, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, P.R. China

Abstract:

Aim: To assess density changes of bone after implant placement and to evaluate the feasibility of CBCT for clinical use.

Materials and methods: 40 tapered dental screw implants were placed in 23 patients aged between 18 and 58 years. CBCT was used to measure bone density before and after implant placement. NNT software was used to take bone density recordings using CBCT grayscale values. SPSS software was used to conduct T-test to compare between pre and postoperative density results, as well as CBCT versus CT readings. One-way analysis of variance was also used for Bone density values of the different areas.

Results: A p value of less than (<0.05) for all four jaw areas were recorded owing to a significant increase in the bone density around the implant postoperatively. Multiple comparison showed significant bone density variations between the four areas ($p<0.0001$), while no significant difference found between CBCT and CT results ($P=0.38$).

Conclusion: CBCT detected a postoperative increase in bone density after every implant placement suggesting bone compression, which contributes to the implant stability. CBCT bone density measurements were assessed and when compared, they were found consistent to those found in CT. Therefore, it is a reliable alternative for density assessment in routine implant placements

Mini Implants in Orthodontics – An Overview

Shikha Rastogi

Department of Orthodontics, KLEVK Institute of Dental Sciences, JNMC Campus, Nehru Nagar, Belgaum, Karnataka, India

Roopa Sadananad Jatti

Department of Orthodontics, KLEVK Institute of Dental Sciences, JNMC Campus, Nehru Nagar, Belgaum, Karnataka, India

Kanhoba Mahabaleshwar Keluskar

Department of Orthodontics, KLEVK Institute of Dental Sciences, JNMC Campus, Nehru Nagar, Belgaum, Karnataka, India

Abstract:

Anchorage control is a key factor in the success of orthodontic treatment. Recent developments in implantology now allows stationary anchorage without the use of extraoral appliances or complex biomechanical procedures. Mini-implants–enhanced anchorage has become a popular concept in orthodontics. Use of skeletal anchorage devices such as osseous dental implants, miniplates, miniscrews or microscrews offers clinicians’ reliable anchorage without patient compliance. Among these anchorage devices, miniscrew implants have increasingly been used for orthodontic anchorage because of their absolute anchorage, easy placement and removal, and cost effectiveness. Therefore, the skeletal anchorage system offers a nonsurgical orthodontic treatment option for skeletal (surgical) malocclusions, as well as a nonextraction treatment for malocclusions characterized by severe maxillary or mandibular protrusion, and/or anterior crowding. The purpose of the present article is to compare the mini- implant supported mechanics with conventional mechanics with the help of cases treated in the department of orthodontics.

Comparison of the Efficacy of Digital Caliper and a Newly Designed Digital Bone Gauge for Measurement of Edentulous Alveolar Ridge Width

Reza Amid, Kasra

Department of Periodontics, Dental School, Dental Research Center, Shahid Beheshti University of Medical Sciences, Evin, Tehran, Iran

Rahimipour

Dental Research Center, Research Institute of Dental Sciences, Dental School, Shahid Beheshti University of Medical Sciences, Evin, Tehran, Iran

Mahdi Kadkhodazadeh

Gifted and Talented Dental Students Division, Students' Research Committee, School of Dentistry, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract:

Background and objectives: An efficient, safe, affordable and easily accessible measuring instrument for quantitative assessment of bone prior to dental implant placement enables more accurate treatment planning. Costly imaging modalities are neither widely available, nor affordable for some patients. This study sought to assess the efficacy of a newly designed digital bone gauge for measurement of bone width with 0.1 mm accuracy in comparison with a digital caliper.

Materials and methods: Using CATIA software, three-dimensional (3D) model of the instrument was designed and its experimental version was fabricated in two models and tested on an edentulous alveolar ridge model. The efficacy of the instrument was assessed by comparing the values obtained by the designed bone gauge with direct measurements made by a digital caliper. The buccolingual width of the edentulous ridge was measured at the crestal level and at 1, 2, 3 and 4 millimeters apical to the bone crest by the designed bone gauge and digital caliper and the intraclass correlation coefficient (ICC) of the values was calculated. Results: Virtual and experimental models of the instrument were designed and patented. The designed instrument was successfully capable of measuring bone width with 0.1 mm accuracy. The ICC with 95% confidence interval (CI) values at 1, 2, 3 and 4 millimeters apical to the bone crest and at all levels were calculated to be 0.973, 0.994, 0.987, 0.998 and 0.999, respectively.

Conclusion: The designed digital bone gauge can efficiently measure bone width at different levels with high accuracy. It can provide valuable and reliable information about bone width at initial clinical examination

Prevalence of Dental Caries among Girl Students of Primary School in Buraydah City

Kalpana Gokul

Priyadarshini Dental College and Hospital, MGR University, Chennai, India

Abstract:

Saudi Arabia is a large, multicultural country. Studies have reported caries prevalence is high in most regions and cities of Saudi Arabia [1]. The national prevalence of dental caries and its severity in children of Saudi Arabia was estimated to be approximately 80% for the primary dentition with a mean dmft of 5.0 and approximately 70% for children's permanent dentition with a mean DMFT score of 3.5 [1]. The current estimates indicate that the World Health Organization (WHO) 2000 goals are still unmet for Saudi Arabian children [1]. Prevalence of dental caries in Buraydah city in particular has been reported only 3 times. Wyne et al. reported the caries prevalence was 20.8% for children with primary dentition (mean age 4.0) and 19.7% for children with mixed dentition (mean age 9.7) in 2001 [2]. Dosari et al. reported the dental caries prevalence was 91.2% (mean dmft= 6.35) for 6–7 year olds and 87.9% (mean DMFT=4.53) for 12–13 year olds [3]. Salem et al. reported the highest percentage of dental caries in Buraydah city [4]. Dental caries is an infectious disease that can affect children, adults and old people. Dental caries if untreated leads to inflammation of dental pulp and loss of teeth. Almost 50% of tooth loss occurs due to dental caries and its complications [5].

