



ICOSTART'22

INTERNATIONAL RESEARCH CONFERENCE ON
INNOVATIONS, STARTUPS AND INVESTMENTS

18-19 Nov'22 | RK University Main Campus, Rajkot, India

A two-day international research conference and summit on
Innovations, Startups & Investments with capacity-building workshops
for startup founders and networking with investors.

ABSTRACT BOOK

UNDER THE AEGIS OF

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**FACULTY OF DOCTORAL
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We are delighted to welcome you to the two-day international research conference on Innovations, Start-ups and Investments (ICOSTART-22) organized by RK University. It is indeed a very proud moment for us. All faculties, research scholars, students, investors and other delegates from different disciplines of science, technology and management are welcome to be a part of the forum. As you are aware, development & enrichment programs for education and investment have become increasingly important in the present-day context of the changing scenario in the scientific and industrial field.

I am happy to share with you that this time ICOSTART-22 pertaining to Innovations, Start-ups & Investments has received strong support from Industries Commissionerate, SSIP and GUJCOST, Govt. of Gujarat, in association with Flair College of Management & Technology, Concord, Canada & Nativelead Foundation and GVFL Limited. This appears to be the perfect time to reflect, review and assess our existing scientific study and make it at par to international standards. This international conference provides opportunities to the participants to present their research works and start-up projects before a global audience.

Furthermore, with the expansion of areas of research and innovation in different sectors around the globe, it becomes imperative to send messages to all respective researchers and innovators that develop and create novel ideas among one and all. Additionally, this conference will be one for us to share our thoughts and exchange ideas on how to chart our journey forward to reach new heights and India could emerge as a Start-up Hub in this region.

Towards achieving this goal, the need for a suitable platform was felt where there could be amalgamation of all researchers, innovators, start-up & investors in an endeavour to precipitate a robust ecosystem.

We welcome you all once again to the international research conference on Innovations, Start-ups and Investments (ICOSTART-22). Come and experience our hospitality and leave with warm memories.

Shri Denish Patel

Executive Vice President

RK University, Rajkot



My Dear Colleagues,

Greetings!

I am indeed very happy to note that the two-day international research conference on Innovations, Startups and Investments (ICOSTART-2022) is organized by RK University. Conferences of such nature provide a great opportunity to research fraternity and Startups, not only to update knowledge and keep research workers obsessed with latest developmental scenario, in the respective field, but also act as an occasion for the resource persons/delegates/observers to interact with each other and to provide motivation to transform that idea of yours into a functioning business. It is a high time to create research activities among the researchers and faculties in academia, Startups as well as in industries. I take this opportunity to extend warm welcome to the resource persons, researchers, investors, faculties and delegates registered for the Conference. My compliments to RK University for taking such initiative and I hope that this conference would provide valuable, useful and informative ideas to the participant students, researchers and other experts. I heartily wish for the great success of the Conference.

Dr. T R Desai

Vice Chancellor

RK University, Rajkot



Message from the desk of Conference Chair

Dear Delegates,

It is an immense pleasure to organize the two-day international research conference on Innovations, Start-ups and Investments (ICOSTART-2022). The goal of the conference is to provide an international platform for participants to interact and exchange ideas on Research, Startups and Innovations of various disciplines. ICOSTART-2022 is funded by Industries Commissionerate, SSIP and GUJCOST, Govt. of Gujarat, in association with Flair College of Management & Technology, Concord, Canada, Nativelead Foundation and GVFL Limited. This conference will provide a wide and diverse platform to students, researchers, teachers, Startups, investors, industrial delegates and a prospect to develop effective channels among the various innovative communities. Through this event RK University is attempting to make a small contribution to realization of the goals of Startup India Policy, Govt. of India. The event would not have been possible without the support of management of RK University who actively led from the front, especially Shri Denish Patel- Executive Vice President, RKU, Dr. Vishal Doshi and Mr. Dushyant Joshi, Conveners of the Conference as well as faculty members and staff of various schools of the university. I am highly thankful to all the delegates and resource persons for participating in this conference. Hope you really enjoy this exciting event at RK University campus and new fruitful collaborations amongst each other.

Dr. Ashish Tanna

Dean, Faculty of Doctoral Studies & Research,
Professor & Head, Department of Physics,
RK University, Rajkot, India



Message from the Desk of Conference Convener

It is a matter of great pride for RKU being a host for one of a kind platform being provided through ICOSTART. It will be a stepping stone towards success as for many Startups, they may be able to find investors or collaborate with others for a bright future ahead. Whereas it is a Golden opportunity to listen to and share a platform with the Stalwarts from their various fields, whom we will have as our Keynote Speakers.

For the Academicians, Research Scholars as well as the Students, it is once in a lifetime opportunity to grab to and attend and listen to the Keynote speakers who would be sharing their knowledge and experience gained over the years in a Nutshell.

The Investors and Venture Capitalists as well as the various sponsoring agencies will also be playing a Vital Role for being a Life Support Systems for these budding Innovators and Startups. They will be the ones to provide the right Eco-system and support for these Startups.

A great effort has been put in day in and day out by all the members associated with ICOSTART at all the levels. A Big Thumbs up to all of them. Congratulations to the Management of RKU. Wishing a Great Success for this Initiative to all the Team Members of ICOSTART.

Dr. Vishal Doshi

Head, Industry Institute Interaction Cell

RK University

OP-001

Designing and validation of low back exerciser for core muscles

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ABSTRACT

The present invention designed, constructed, and validated to develop low back exerciser which can test and train the core muscle stability and mobility through biofeedback at the lumbo sacral area. Materials and methods to study consisted of multiple phases. In the designing phase of low back exerciser an Auto- CAD design was performed to get the basic idea of a low back exerciser which resembles the dimension, shape, angle and size of lumbo sacral spine. In phase of low back exerciser construction suitable material such as load cell sensor, platform, molded covering with foam and leather sheet used to construct the exerciser which is connected to output display unit which identify the pressure changes with the help of load sensor, A testing phase included normal individual (n=90) and low back pain patients (n=15) with mean age of (30.72 ±14.17) for normal individual and for low back pain patients (42.73 ±6.52). The testing was performed with feedback and without feedback in terms of keeping the display unit in front and away from individual and low back pain patients. The validation of low back exerciser was compared with EMG activity of Transverse abdominis muscle to check the activation of core muscles. The results of testing phase study indicate that Cronbach's alpha value for low back exerciser with feedback was 0.93, without feedback was 0.95 for EMG study was 0.87 and for low back pain patient was 0.97. When comparing the value of different age groups (20-30 year,30-40 year,40-50year) through ANOVA analysis it shows significant(p<0.001) changes among age groups. The result also found to be significant (p<0.001) when low back exerciser reading analyzed with feedback, without feedback and low back patient age group.

Keywords: *Low back exerciser, Core muscle, Feedback, LumboSacral spine*

OP-002

A Study To Evaluate The Effect Of X-Drills & Zigzag Drills Training On Speed Parameter of Illinois Agility Test In Football Players – A Comparative Experimental Study

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ABSTRACT

Agility - Physical action of changing direction, stopping, and starting without any recognition for integral role how brain and ever-changing dynamic nature of sports can affect agility performance. Here the need of the study was to assess ability of football players and to check its effect on reaction time, as agility may be beneficial for balance and coordination, mind & body connection and to reduce risk of injuries with help of agility drills. Aim of the study is to evaluate and compare effect of X - Drill and Zigzag Drill on reaction time of Illinois agility test in football players. The methodology used for the study is 60 football players were selected according to inclusion and exclusion criteria and Illinois Agility Test (IAT) was performed; they were divided into 2 groups. Group A - 30 subjects were given X - Drills and Group B – 30 subjects were given Zigzag Drills. At End of 1st & 2nd Week, again IAT was performed to evaluate reaction time. Results Analysis was done by using SPSS Software 21. Mean and SD were calculated and comparison between two groups was done by Two Tailed Test that showed $p=0.0001$ and so alternative hypothesis was accepted. It was concluded that both the drills X- drill and Zigzag drill were effective on speed parameter of IAT in reaction time but during comparison it was found that Zigzag drill were more effective in improving reaction time as compared to X-drill.

KEYWORDS: *Agility, Football players, Illinois Agility test, X-drill, Zigzag Drill, Reaction time.*

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OP-003

“Designing And Testing Study” Compression Vibratory Device For Lower Limb Lymphedema : An Explorative

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ABSTRACT

Lymphedema is pathologic conditions in which there is excessive accumulation of protein-rich fluid.¹Lymphedema affects 200 million people world.² Lymphedema can be either a primary or acquired (secondary) condition.¹ Compression devices have evolved even further in their sophistication and allow for digital programming to mimic manual lymphatic drainage techniques and promote fluid clearance.³ Extremity volume reduction can range from 3% to 66% depending on the type of device, outcome measures, and specific treatment regimen. The efficacy and evidence of compression device is poor. Compression device retained smaller amount of fluid.⁴Hence there is need to develop combination device which provides compression along with vibration therapy for drainage. The aim of the study is Designing and Testing Compression Vibratory Device for lower limb Lymphedema To develop portable, cost-effective, easy to use and easily available device. To check its effectiveness among patient having lower limb lymphedema. The methodology of the study is Assessment eligibility through inclusion and exclusion criteria. Informed consent was signed by the patient before starting the testing procedure and measurement was done using girth measurement in patient with lower limb lymphedema. The result of the study is the ICCs test shows that the device has high reliability score. The Study concluded that, the present prototype is a highly reliable device for reduction of lower limb lymphedema.

Keywords: *Lymphatic system, Stemmers sign, Lymph, Portable, Edema*

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Measurement Instruments for Quantitative Assessment of Scapular

Positioning: A Systematic review

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ABSTRACT

The scapula provides a key link in the kinetic chain of the upper limb. Proper functioning of the upper extremity requires normal scapulohumeral kinematics. Scapular dyskinesia is a clinical impairment indicating deviation from optimal scapulohumeral rhythm.¹ Such deviations include winging, or prominence of scapular borders; absence of smooth, coordinated movement; and rapid scapular elevation during humeral elevation or vice versa during humeral lowering.² Scapular dyskinesia is found in 61% of all overhead athletes and in 67% to 100% of athletes with shoulder injuries.³ Changes in scapular positioning are also considered important risk factors for developing shoulder disorders like impingement, rotator cuff disease, shoulder girdle instability, and adhesive capsulitis⁴. Hence, a quantitative clinical assessment of the scapula positioning is required. This analysis aims to present available literature on instruments used for quantitative measurement of scapular positioning with their validity and their reliability measures. PRISMA guidelines were used for a comprehensive literature search from various electronic databases like PubMed, PEDro, MEDLINE, SCOPUS, CINHAI, and Cochrane reviews till June 2021. Relevant keywords were used for the review articles to be included in the study. The full-text articles, systematic reviews, RCTs, health policy perspectives, global surveys, and guidelines were included in the literature review framework. The abstract of the located articles was read to select the appropriate article and the full text is being evaluated for the relevant search. Downs and Black checklist was used to assess the methodological quality. Assessment of scapular position was performed mainly in normal individuals, very few have been assessed in conditions with shoulder pathologies. Literature has demonstrated quantitative assessment of scapular position using either a 3-dimensional electromagnetic device or 2-dimensional methods mainly assessing scapula upward rotation or scapular tilting. There is no instrument that is easily available and cost-effective to measure the bilateral scapula positioning in all 3 planes.

Keywords: *devices, scapula positioning, upward rotation, scapula dyskinesia, anatomical planes, scapula elevation*

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OP-005

Prevalence of Kinesiophobia in PMS- A Cross Sectional Observational Study

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ABSTRACT

Pre-Menstrual syndrome (PMS) refers to physical and emotional symptoms that occur in the one to two weeks before a woman's menstrual phase. PMS is a group of psychological and physical symptoms which regularly occur during the luteal phase of the menstrual cycle and resolve by the end of menstruation. The exact etiology of PMS is not known. The key diagnostic feature is that the symptoms must be absent in the time between the end of menstruation and ovulation. Kinesiophobia is the most extreme form of fear of movement, and is defined as an excessive, irrational fear of physical movement and activity resulting from a feeling of vulnerability to painful injury. Aim: The aim of this study is found out the prevalence of kinesiophobia in Premenstrual Syndrome. For this study, females were selected based on inclusion & exclusion criteria. The PMS And its various symptoms were explained to the subject and also about consent and the consent form were filled by the subjects. Participants were analyzed by Tampa Scale for Kinesiophobia(TSK), earlier subjects were explained the scale and they independently filled it up. in TSK there were total 17 questions which explained to the females and then females filled up the questionnaire, in TSK, 68 is the highest score and 17 is the lowest one. The present study shown **66%** Prevalence of kinesiophobia in PMS. Conclusion the study proves that Kinesiophobia is moderately prevalent in Premenstrual Syndrome. It should be taken in consideration during any Physiotherapy treatment. Outcome Measures is Tampa Scale for Kinesiophobia

Key Words: *Premenstrual Syndrome, Kinesiophobia, TSK*

OP-006

Developing A Balance Sensing Device To Assess Balance Functions In Subjects With Balance Impairments – A Pilot Study

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ABSTRACT

Most Android-based devices have built-in sensors that measure movement, posture, and various environmental conditions. These sensors are able to provide raw data with high accuracy and precision and are useful if you want to monitor the movement of three-dimensional device movements or you want to monitor changes in the vicinity of the device. Such sensors detect movements like tilting, shaking, rotating, or turning. To correlate the RK BalTech Device with standard assessment tools, Berg Balance Scale and Functional Reach Test in Healthy subjects and in subjects with balance problems. Functional Reach test was performed on 100 Healthy subjects then same subjects were evaluated with RK BalTech. Other 30 subjects with Balance problems were evaluated with BBS and then same subjects evaluated with RKB. Device is controlled by the web server. Android based smartphones are used to analyze the data from the device through the web page which is created to observe the position or deviation in normal position of the subject. In this study there is positive moderate correlation between FRT and RKB which is statistically significant ($P < 0.05$). In another group the subcomponents of BBS were correlated with RKB, and all the BBS components showed strong and negative correlation with RKB which is statistically significant ($P < 0.05$). For the validity Pearson Correlation Coefficient Test was done and the obtained value is more than the critical value, so the RKB is a valid device. For the reliability ICC value obtained which is suggestive of high correlation And Cronbach's alpha value suggests excellent homogeneity and good internal consistency. The RK BalTech – a balance sensing device successfully designed and developed to measure trunk deviations in healthy normal individuals.

Keywords: *BBS, FRT, electronic devices, Sensors, Balance Problems*

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OP-007

A TEMPERATURE CONTROLLED PHOTOCATALYTIC REACTOR

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ABSTRACT

Synthetic dyes are byproduct of certain processes which can affect the natural water resources. These dyes can be decomposed by either aerobically or anaerobically methods. The carcinogenic compounds can be formed due to these processes. Synthetic dye can be decomposed by several advanced oxidation processes to convert dyes into carbon dioxide and water i.e. biodegradation, photo-Fenton, photocatalytic, radiation, sonolysis, Fenton and UV photocatalytic processes. We have modified our previous version of invention (Application No.202121044961 A, Status: - Published) and incorporated temperature controller to the photocatalytic reactor to make it more effective. In this reactor, magnetic spinel ferrites/activated carbon composites are used as these are known photocatalyst for oxidation and dye degradation process. After the reaction, these magnetic materials can be separated by external magnetic field which is economical and promising technique at industrial scale.

Keywords: *Temperature controlled, photocatalyst, dye degradation, photocatalytic reactor*

OP-008

DESIGN, DEVELOPMENT AND CHARACTERIZATION OF MODIFIED RELEASE DOSAGE FORM CONTAINING ANTI DIABETIC DRUG COMBINATION

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ABSTRACT

In the present study, an attempt was made to develop Sustained Release Matrix Tablet of Vildagliptine and Nateglinide, using Chitosan, Xanthan gum, HPMC K15M and HPMC K100M as polymers by Wet granulation method. From the results of all parameters, it was found that batches formulated using Xanthan Gum and HPMC K100M gave effective pre & post compression evaluation results and also they were able to sustain the drug release for maximum time, thus those 2 polymers were selected for factorial batches design. A 3² full factorial design was applied to investigate the combined effect of the two independent variables i.e. concentration of Xanthan Gum (X1) and concentration of HPMC K100M (X2) on the dependent variables Swelling Index after 8 hours (Y1) and % CDR at 12 hours (Y2). The tablets were tested for weight variation, hardness, drug content, Swelling index and *In Vitro* drug release study. On the basis of all results, batch F9 was able to sustain the drug release for about 18 hours. Stability study was carried for 1 month and post stability study results showed formulation F9 was stable for the period of 1 month as there are no significant changes in the properties of the tablet. From the whole study it was concluded that sustained release matrix tablets of Vildagliptine and Nateglinide is an acceptable dosage form which suggests that it is likely to become one of the choices for the treatment of Diabetes.

Key words: *Sustained Release Matrix Tablets, Vildagliptine and Nateglinide.*

OP-009

Formulation and Evaluation of Anti-Mosquito Property of Polyherbal Dhoop Sticks – Herba Sticks

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ABSTRACT

Looking at environmental and health concerns with the use of chemicals used to eradicate mosquitoes, Dhoop is a substance that is frequently utilized in both rural and urban parts of India. With an intention to create a safer, chemically free, cheaper, and homemade HerbaSticks as well as to encourage its home industry, we focused on this title. In methodology, the utilization of essential oils like eucalyptus, turpentine oil, citronella as well as additional ingredients like cow dung, neem, tulsi, guggul, camphor, dashang were used. All the ingredients were mixed by traditional method of mixing and wet dough was prepared. The apical side of a plastic syringe was sliced to fully open the mouth of the syringe. The empty syringe and a plunger were used to make HerbaSticks. These HerbaSticks were left whole for 24 hours to ensure proper drying, after which they were stored in an airtight container. As a result of this innovation according to standard procedure, the HerbaSticks shown significantly higher % mortality as compared to that of marketed product (Good Night Fastcard). Along with this, the ASH of HerbaSticks also shown significant larvicidal potential. Looking at the outcome of this product, it can be well claimed that the HerbaSticks successfully shown intended anti-mosquito property. To establish its public acceptance, various evaluation parameters and public survey were conducted during the fumigation activity. All of them found the appearance & smell was appreciable & acceptable. From this project, we can conclude that this product could serve as safe and better home-made remedy for repelling mosquitoes and can also boost organic production of Anti-mosquito products.

Keywords: Larvicidal, Polyherbal, Essential oils, Cow dung, Mosquito-repellant.

OP-010

Formulation And Evaluation Of Edible Herbal Lipstick For Treatment Of Itchy And Irritated Lips

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ABSTRACT

Lipstick is the most widely used cosmetic added in the make-up to enhance the beauty of lips. The herbal nutrient that keeps lips healthy and whose purpose is to prevent lip dryness and protect against adverse environmental factors. The product's characteristics are: resistance to temperature variations, pleasant flavor, and innocuousness, smoothness during application, adherence and easy intentional removal. The active ingredients were used as Manjistha- Healing power and antioxidant property, Mulethi (*Glycyrrhiza glabra*) - Wound healing, soothe itchy and irritated skin, Olive Oil: Blending properties, Shikakai- Natural surfactant. Among the more popular formulations of herbal lipstick are functional natural ingredients several coconut oil, cocoa butter, bees wax, beet root juice as coloring agent, strawberry essence and vanilla essence. The herbal lipstick was prepared by molding method. All the ingredients were mixed in a crushed or dried and powdered form in their definite ratio with melting cocoa butter and it was incorporated into existing cosmetic bees wax at a low flame. Finally, molten mass was into lipstick form. The prepared lipstick was evaluated for color, odor, pH, melting point, breaking point, and stability. This herbal lipstick having therapeutic and non-therapeutic uses without any side effects. This can observe from the facts that lipstick is marketed in hundreds of shades of colors to satisfy latest demand of the women. The dyes that contribute to the color of the lipstick are very harmful to humans on consumption. Coal tars are the basic ingredients from which synthetic dyes are formed can cause allergy, nausea, dermatitis, and drying of the lips. In a more severe form they can be carcinogenic and even fatal. So, the use of edible coloring (beet root powder) matter is benefit over to the use of synthetic color in lipstick formulation.

Keywords: *Herbal Lipstick, Manjistha, Mulethi, Olive Oil, Shikakai, Beet Root*

OP-011

DiegoFizz- An Effervescent tablet cum solution to Gastric problems

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ABSTRACT

Looking at the Stomach problems & gastric disturbances observed in several seasons, we aimed to formulate an effervescent tablet comprised of natural digestive herbs with instant Soda making property. The herbs used in it are *Mentha spicata* (pudina), Black salt, Asafoetida (hing) and Cumin seeds (jeera) which can be remedy for flatulence, indigestion line Gastric problems. Saurashtrian people are foodholics and due to their food habits they need to take various churnas as well as soda to resolve the gastric problems. Looking at limitations of simple Chhas Masala like uneven quantity comes out from bottle, moisture entrapment in monsoon, clogging, etc. we come up with a solution by which uniform quantity can be used every time for long term storage, especially in monsoon viz., DIEGOFIZZ, an effervescent tablet that fulfills the need of chhash masala as well as having a soda making properties. Simply by adding 2-4 tablets of it in Chhas as per need, it can serve as a tasty, home-made instant Soda. Apart from buttermilk, it can be used for lemon juice, other drinks required to consume during gastric trouble. From this start-up, society will get a cheaper, safer and more importantly convenient herbal remedy to get rid of some gastric problems at home.

Keywords: *Buttermilk masala, diegofizz, homemade soda, herbal remedy, effervescent tablet, gastric issues*

OP-012

KickPain - An Instant Pain Relief Spray

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ABSTRACT

This work was aimed to explore the possibility to formulate natural ingredients based topical spray for joint pain relief. After Pandemic, herbal approaches are becoming trendier due to very less adverse reactions and cheap as compared to other medicines. Sesame oil, cinnamon oil, Guggul, camphor, turmeric and menthol are extensively used natural ingredients for joint pain relief. Being mildly effective for joint pain relief, they were combined in a single formulation to get ultimate cumulative effect. All these remedies were easily mixed with each other to formulate a liquid preparation that can be topically applied for joint pain relief. Total five formulation batches (S1, S2, S3, S4, and S5) with different concentrations of the materials were formulated and evaluated for relevant parameters like pH, appearance, density, spray pattern, odour, and viscosity. From the results obtained, batch S4 was considered to be the optimized formulation. Results procured for KickPain spray optimized batch included physical appearance of spray, which was transparent yellow liquid with density of 0.85 gm/ml; with minty spicy odour and pH 5.5, showed the best product among the developed batches that contains of all remedies having the better effective property on pain specific areas. Viscosity of the optimised formulation was around 55 cps. In addition, the spray pattern obtained showed consistent droplet size and spreading diameter of around 10 cm. This work suggested that natural oil is advantageous as alternative treatment in pain and inflammation, as use of Poly herbal preparation can escape side effects. The Natural remedies-based pain relief spray by using different oils has a great effective response that could be formulated by simple techniques, less instrumentation use with minimum cost.

Keywords: *Poly Herbal Formulation, Joint Pain, Spray, Cinnamon Oil, Sesame oil*

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OP-013

A Review: 5S Methodology and Its Contributions Towards Manufacturing Performance and Workplace Management

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ABSTRACT

The paper has several literatures on 5S methodology and its contributions towards manufacturing performance and workplace Management, it represents a systematic review of the literature. The paper exhibits how different industries implemented 5S and increased the productivity of their work. Also, the review paper will help those who want to implement such methodologies in their respective fields. Furthermore, it presents the idea of reducing accidents and enhances the working efficiency in any industry. The paper also reveals the crucial problems in 5S, starting from maintenance techniques, layouts of 5S and the relationship of 5S with the barriers and success factors in 5S implementation. This study will be helpful to industrialists and researchers both who want to know about 5S.

Keywords: 5S, Workplace Management, Layouts, Continuous Improvement, Manufacturing Performance.

OP-015

Feasibility Study On Investment In Electric Vehicle Battery Manufacturing

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ABSTRACT

In engineering, particularly for electrical engineers, a new business line is going to open in India. The government of India has taken some steps toward achieving India's long-term goal of reaching net zero carbon emissions by 2070. E-mobility is one of the initiatives taken to achieve this goal. Most parts of electric vehicles are equivalent to those of petrol vehicles, but the battery and motor have some differentiation from ordinary vehicles. In electric vehicles, BLCD motors are used, which can be manufactured through the relevant technology of BLDC fan, but for EV batteries, we need to develop a new process plant with précises technology because recently there have been so many burnt EV cases, which may be due to the heat of the battery or a fault in the battery management system. In this research paper, we discuss the feasibility study on investment in an electric vehicle battery manufacturing plant.

Keywords: *Battery, Machine , Electric vehicle*

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OP-016

Role of Herbal Fumigation for Preventive and Curative Measures of Infectious Diseases and Need of the Standardization of Fumigation Device: An Evaluative Review

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ABSTRACT

The Nation has learnt several critical lessons from the Covid-19 pandemic to reduce the dependency on modern medicines-therapies and to strengthen the health infrastructure for the welfare of the society. It is the right time to recognize the true potential of Ayurveda which is India's ancient therapy. The primary method of halting the pandemic is sanitization of the environment to weaken/terminate the virus and impede virus growth inside the recipient in addition to symptomatic treatment. A form of conventional therapy called fumigation (Dhupana) is extensively described in Indian classical scriptures. It is a process in which herbal medications are burned and the fumes or smoke that results is used for incensing, perfuming, or any other therapeutic function. This approach includes exposing the patient to medicinal fumes; hence it can be used as a means of administering medication. The fundamental requirements for a medication's effective administration are dependent on the drug's composition, the nature of its active ingredients, how well it absorbs in the body, how easily drug molecules diffuse and reach their intended sites, stability, and safety. It is highly demanded to develop and standardize the fumigation device to fulfill the above requirements which helps the ayurvedic practitioners to achieve the effective results in terms of preventive and curative aspects. The current paper includes a comprehensive explanation of this novel drug delivery method-fumigation therapy, including all of its characteristics. For the study, classic works on ayurveda as well as contemporary writing, web references, and peer-reviewed publications are used. A review of the literature reveals that Dhupana is a potential method for delivering medications.

Keywords: *Covid-19, Fumigation, Dhupana, Ayurveda.*

**Energy Conservation Testimony of RK University After Deploying
Renewable, Efficient & Sustainable**

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ABSTRACT

Engineering education can play a significant role to promote and develop clean, green, and sustainable environments around the world. Recently COP26 (the twenty-sixth session of the Conference of the Parties) has showcased the global efforts to address climate change impacts on the Earth. In the same regard, this article is presenting the annual report on energy conservation at RK University through renewable, efficient, and sustainable technologies. This annual testimony concentrates on the energy-saving efforts taken by the University through the successful execution of a roof-top solar power plant, biogas plant, rainwater harvesting system, solar water heater system, energy-efficient sensor-based streetlights, and energy-efficient fans. This article also includes various energy conservation computations to realize the importance of clean and green energy. This annual report also fulfills the requirement of a “Green Campus” as per the UGC and “Swachh Campus” as per the MHRD, Government of India.

Keywords: *Sustainable environment; Climate change; Energy conservation; Annual report; Green campus; Swachh campus.*

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OP-020

**A Comparative Study on Early Detection of Alzheimer's disease using
Artificial Intelligence**

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ABSTRACT

Neurodegeneration refers to the progressive loss and damage to the structure of neuronal cells, leading to death of the neurons. It is one of the most feared associates of increased longevity. Alzheimer's disease (AD) is a neurodegenerative disorder. It is one of the deadliest diseases in developed country. It is an incurable disease affecting the elderly population. There has been growing focus on early detection of Alzheimer's disease using Artificial Intelligence. Here we provide a review on early detection of Alzheimer's disease using various Artificial Intelligence techniques. The machine learning techniques are surveyed under three main categories: Support vector machine (SVM), Artificial Neural Network (ANN), Deep learning (DL), and Ensemble methods. We present a detailed review on these three approaches for Alzheimer's with possible future directions.

Keywords: *Alzheimer's disease, Support Vector Machine (SVM), Artificial Neural Network (ANN), Deep Learning (DL)*

OP-021

Study of Internet of Things, Cloud Computing and Big Data: A Review

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ABSTRACT

Internet of things (IoT) is a system of millions of linked devices which allows the user to transfer information, monitor and manage services. IoT is beneficial in manufacturing, home automation industries, automating farming techniques, infrastructure and many more. With IoT, the lives of people become smarter as the devices work without any human interference. Cloud Computing is providing computer services over the internet. Cloud computing and Internet of things are now associated with each other which are the technologies which would bring benefits in the future. Big data is the collection of data that is large and complex, structured or unstructured and cannot be analyzed with traditional data-processing application software. The relationship between IoT, Cloud Computing and Big data provides abundant opportunities in accelerating exponential growth in businesses.

Keywords: *Internet of Things, IoT, Cloud Computing, Big Data, Security, Automation*

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OP-022

ARTIFICIAL INTELLIGENCE (AI) FOR NGO

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ABSTRACT

(AI) ARTIFICIAL INTELLIGENCE is the simulation of human intelligence processes by machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, data recognition, machine vision and can lead in many public sectors. It's a vital step indeed to move ahead with the new and smart technology of AI in this fast-growing world. Role of AI with NGO (non-government organization), starting from the awareness amongst the citizens this can lead in many sectors of our society whether it's healthcare, safety, farming, education, or poverty even in the field of employment and in the field of technology or in any emergency situations and moreover only few NGOs are working on these which are also called AI embedded NGOs, An AI embedded NGO is an organization that recognizes the value of data and uses AI algorithms to deliver services and programs highly efficiently and at a large scale . Currently in the whole world only a few NGOs are working with smart technology. If this can spread as an idea integrated with a movement, it can be a huge success for the world. There must be some ethics too for the NGOs in terms of technology for the safety and privacy of everyone. Well, the NGOs are also facing tough challenges like DATA identification, DATA collection, DATA interpretation etc.

Keywords: *Artificial Intelligence(AI), Healthcare, Safety, Farming, Education, Poverty, Data Identification, Data Collection, Data Intereting, Data Recogintion.*

OP-023

Perception of Career Development Learning And Work Integrated Learning In Higher Education

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ABSTRACT

The employment of Graduates in the Professional Workforce is of paramount importance to Universities, Government, Employers, and Students. Defined graduates' employability "as a set of achievements—skills, understandings and personal attributes—that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community, and the economy". The research is highlighting the role of higher learning for developing Aptitudes, Knowledge, and Skills which prepare Graduates for the workforce. Given this impetus, it is not surprising that work-integrated learning has been the focus of attention in the Higher education system during recent years. Description of work-related learning provides a useful working definition of work-integrated learning. Work-related learning involves: (a) learning about oneself; (b) learning and practicing skills and personal attributes of value in the world -of - work

Key words: *Integrated learning programs, Graduates, Workforce, Higher Education System*

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OP-024

A Review: Difficulties Faced by Liberian Farmers for Irrigation

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ABSTRACT

Agriculture is the main source of livelihood for more than 80 percent of Liberia's population and provides sustenance for many households engaged in different agricultural products. However, agricultural productivity in Liberia is very low, and because of that Liberia imports 95 percent of its rice, making the country vulnerable to global food security. Liberian lack basic infrastructures such as farming equipment, storage for food, etc... Cavassa, Potato, and rice are Liberian staple foods. In recent times Liberia has had too many problems with food shortages because there is no modern machine to produce most of the staple food. In less than three months Liberia has had four uprisings from its citizens because of the shortage of one of its staple food rice. The lack of modern technology amount to Liberia farmers causing them to use underage children to do the farm work which makes child labor increase by 75% in less than three months. The data collected in four counties, show the number of underage children forced into child labor because of poor irrigation range between 25 to 50% for 2022. To solve some of these problems in Liberia we need to introduce the Non-Conventional Method of Irrigation. It will help to reduce child labor and increase productivity; it will also minimize the uprising amount citizens of the country. If Liberians can access modern technology, it will enable them to manage their crops in the right way and have more increment in food production. It will help reduce child labor will reduce, and income will increase in less than six months. The irrigation system will also help farmers to understand how technology works and how it helps in providing the livelihood of every farmer around the world.

Keywords: *Liberian Farming, Irrigation System, Child labor in farming, Lack of infrastructure in crop storage.*

OP-026

Cloud Computing and its challenges

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ABSTRACT

The term “cloud” in cloud computing refers to the collection of networks. The user can use the cloud computing endlessly whenever demanded. It may be considered as On-demand delivery of computing services on the internet such as hardware, software, storage, servers, networking etc. Cloud computing provides mainly three types of services: IaaS(Infrastructure-as-a-Service), PaaS(Platform-as-a-Service) and SaaS(Software-as-a-Service). The cloud computing is not something that suddenly come in to the view. The cloud computing is evolving rapidly in today’s modern era. And this trend will increase in the coming days as companies of all types adopt this technology wholeheartedly. In this paper I have explained the introduction, evolution, benefits, components, types, services and challenges of Cloud computing.

Keywords: *Cloud computing, Cloud, IaaS, PaaS, SaaS*

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OP-028

**Phenylboronic Acid Catalyzed Synthesis of Polysubstituted
1,4-dihydropyridine derivatives as promising antioxidant agents
Correlated with Molecular Docking**

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ABSTRACT

A series of polysubstituted 1,4-dihydropyridines (4a-i) were designed and developed using Ph-B(OH)₂ catalyst. Further, compounds were confirmed by various spectroscopic techniques. After that all compounds were studied for molecular docking against the human peroxidase enzyme (1PRX). Results of docking revealed that many compounds exhibited low binding score. To get a reference from the docking study, all synthesized molecules were evaluated for in vitro antioxidant assay using DPPH, H₂O₂ and NO methods. Most of the tested compounds exhibited good to moderate inhibition. Amongst, these compounds 4a (0.150, 0.141, 0.154 μM) and 4b (0.146, 0.134, 0.149 μM) possessed more significant activity than positive control ascorbic acid.

***Keywords:** 1,4-dihydropyridine, Boronic acid catalyzed, Antioxidants, Molecular docking, Hantzsch synthesis*

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OP-029

Synthesis, Molecular modeling, ADMET and Fastness Studies of Some Quinoline Encompassing Pyrimidine Azo Dye Derivatives as Potent Antimicrobial Agents

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ABSTRACT

Targeting the current issue of microbial resistance and novel dye molecules for textile industries, we have synthesized a series of novel Quinoline-Pyrimidine hybrids (**3a-p**). The naphthol group substituted compounds were outstanding in terms of antimicrobial screening as compound **3c** against *E. coli*, *A. niger* and compound **3b** against *C. albicans* unveiled excellent inhibition activity. The docking score of **3b** was highest against both Topoisomerase IV (7.87) and CYP51 (8.48) enzymes while compound **3c** also had decent dock score (7.02; Topoisomerase IV and 7.98; CYP51) compared to reference drugs. *In silico* pharmacokinetic and toxicity prediction data revealed that compound **3c** had the highest drug score (0.71) while compound **3b** on the other hand displayed feeble drug score (0.39). Assessing the dyeing performance and colour as well as rubbing fastness properties on cotton and silk, it was observed that cresol derivatives **3e**, **3j** and **3m** exhibited excellent fastness properties towards cotton fabric.

Keywords: Quinoline-Pyrimidine, Azo dye, Antimicrobial, Molecular Docking, ADMET

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OP-030

Microwave-Assisted In Situ Cyclization of Curcumin Derivatives as Dominant Chemotherapeutic Agents for Leukemia and Colon Cancer

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ABSTRACT

A rapid and efficient protocol has been proposed for the synthesis of 7-(4-substituted benzylidene)-3-(4-substituted phenyl)-3,3a,4,5,6,7-hexahydro-2H-indazoles under microwave irradiation. The synthesized compounds were screened for anticancer activity against 60 human cancer cell lines, and some of them exhibited significant anticancer activity against leukaemia and colon cancer cell lines.

Keywords: *curcumin type derivatives, in situ cyclization, leukemia, colon, microwave irradiation*

**Microwave Assisted Design and Synthesis of Pyrrolobenzodiazepine Embrace
1,2,3-Triazole by Click Chemistry then Evaluation of Anticancer and
Antimicrobial Activity**

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ABSTRACT:

A new series of pyrrolobenzodiazepine derivatives containing 1,2,3-triazoles moiety has been designed and developed via Cu(I)-catalyzed azide-alkyne cycloaddition reaction, click chemistry synthetic aspect under microwave irradiation. The reaction has been curtailed in diverse azide derivatives, solvent ratio, and catalyst for different time duration. The reaction has been studied with different azide substrate scope and proposed reaction mechanism has also been projected. Synthesized compounds also screening for in vitro anticancer activity and antimicrobial activity.

Key Words: *Triazole, azide-alkyl, Microwave, Click chemistry.*

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OP-032

Synthesis and Invitro Antibacterial and Antifungal Screening of pyrazolo[3,4-d]pyrimidine derivatives

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ABSTRACT

In the current research, we synthesized a series of 3-amino-4-substituted phenyl-1,4,5,7-tetrahydro-6H-pyrazolo-[3,4-d]pyrimidin-6-imines which were evaluated for in vitro antibacterial and antifungal screening. The results derived from in vitro antibacterial and antifungal activity of the compounds Ia, Ib, Ii, Ij, and Ig show good inhibition. All results compare with standard drugs Amoxycillin, Chloramphenicol, Ciprofloxacin, Norfloxacin, Griseofulvin, and Nystatin.

Keywords: Pyrimidine, pyrazolo-[3,4-d]pyrimidine, Antibacterial activity, Antifungal activity, Antimicrobial activity

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Novel Process For Preparation of Axitinib and Its Polymorph

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ABSTRACT

The present invention provides polymorphic form of Axitinib characterized by X-ray powder diffraction (XRD) pattern having major peaks at about 11.58, 11.98, 17.53, 19.00 and 25.26 ± 0.20 degrees 2-theta and its process for the preparation. This crystalline form has better physicochemical parameters than prior-art polymorphs which includes lower hygroscopic and good flow property.

Keywords: *Axitinib, Polymorph, hygroscopic, crystalline form*

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OP-034

Synthesis and Biological Evaluation of some Novel Pyrano[2,3-d]Pyrimidine Derivatives

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ABSTRACT

The synthesis of novel Pyrano[2,3-d]pyrimidine derivatives, had been synthesized by three component domino Knoevenagel hetero Diels-Alder reaction. The products were assayed for their in vitro biological assay antibacterial activity against with two Gram-positive bacteria *Staphylococcus aureus* MTCC-96, *Streptococcus pyogenes* MTCC 443, two Gram-negative bacteria *Escherichia coli* MTCC 442, *Pseudomonas aeruginosa* MTCC 441 and three fungal strains *Candida albicans* MTCC 227, *Aspergillus Niger* MTCC 282, *Aspergillus clavatus* MTCC 1323 taking ampicillin, chloramphenicol, ciprofloxacin, norfloxacin, nystatin, and griseofulvin as standard drugs. Among the various synthesized heterocyclic compounds, 1b, 1c and 1g are display broad spectrum antibacterial and antifungal activities against both gram-positive and gram-negative bacteria as compared with standard drugs.

Keywords: *Pyrano[2,3-d]pyrimidine, domino Knoevenagel-hetero-Diels-Alder reaction, antimicrobial activity*

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OP-035

Stability Indicating HPLC Method for Related Substances in Polmacoxib

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ABSTRACT

An impurity in pharmaceuticals is classified as any component that is not the entity defined as the drug substances. In addition, for a drug product, any component that is not a formulation ingredient is considered an impurity. There are three different types of impurities in pharmaceutical that is organic impurities, inorganic impurities, and residual solvent. Here we are identified organic impurities generated during the process of Polmacoxib API manufacturing and stress degradation study of Polmacoxib. Polmacoxib, chemically known as 4-(3-(3-Fluorophenyl)-5,5-dimethyl-4-oxo-4,5-dihydrofuran-2-yl) benzene sulfonamide. It is a non-steroidal anti-inflammatory drug used to treat Osteoarthritis. A sensitive, precise, specific, linear and stability indicating HPLC method was developed for the analysis of related substances in Polmacoxib.

Keywords: *Polmacoxib, force degradation, HPLC, related substances*

Pyrazole Bearing Pyrimidine Analogues as the Privileged Scaffolds in Antimicrobial Drug Discovery: A Review

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ABSTRACT

Low quality of life and life threatening conditions often demand pharmacological screening of lead compounds. The substitution, replacement, or removal of functional group on pyrazole and pyrimidine ring system appears consistent with diverse molecular interactions, efficacy, and potency of these analogs. Spectrum of pharmacological activity has been attributed to pyrazole and pyrimidine analogs. The present review article deals to emphasize the diverse synthetic approaches reported by researchers on pyrazole clubbed pyrimidines for their antimicrobial potency. Ring variation, ring fusion, substitution variant and spacer addition strategies allied with electron withdrawing groups at active sites on pyrazole and pyrimidine are the best combination to achieve potent antimicrobial motifs. N-Substituted aromatic or hetero aromatic groups along with EWG are also good structural modifications to improve pharmacokinetic properties in preclinical drugs species. New age antimicrobials can be synthesized with the next level of potency by this prospective.

Keywords: *Pyrazole, Pyrimidine, Antimicrobial activity, Drug discovery*

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OP-037

To Synthesis and Identified, Some Novel Coumarine Derivative and It is Anti-Inflammatory Screening.

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ABSTRACT

Multicomponent reactions are a persuasive approach for developing a chemically diverse set of heterocyclic scaffolds with high yield. Using by conventional as well as microwave, synthesis is of a series of new 9-nitro-4-phenyl-2-(pyrimidin-2-yl)-1,2-dihydro-5H-chromeno[4,3-d]pyrimidin-5-one and assessed for their anti-inflammatory activity using the Carrageenan-induced hind paw edema method. Compounds EJ115-J, EJ115-E, & EJ115-A showed significant ($p < 0.001$) reduction of rat paw edema volume after 1hr from the administration of the Carrageenan compared to the reference drug, indomethacin. Compounds EJ115-J and EJ115-E showed the highest anti-inflammatory activity, surpassing indomethacin after 4 hr with 65.61% and 60.99% inhibition, respectively.

Keywords: *Biginelli Reaction, 4-hydroxy coumarin, pyrimidine-2-carboximidamide, Microwave irradiation, Anti inflammatory activity.*

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OP-038

Oxazolone scaffolds plays a key role as potent antimicrobial agents

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ABSTRACT

Heterocyclic compound demonstrates its importance in pharmaceuticals, agriculture as well as natural products. It also plays a vital role in designing novel drug-like candidates as they act as a drug for the treatment or cure of diseases. Structure of the compound makes it a desirable synthetic target, as a novel synthetic route will allow the investigation of related heterocyclic compounds which may show improved levels of biological activity. The present review article deals to emphasize the diverse synthetic approaches reported by researchers on oxazolone for their antimicrobial activity. Ring variation, ring fusion, substitution variant and spacer addition strategies allied with electron withdrawing groups at active sites on oxazolone are the best to achieve potent antimicrobial motifs.

Keywords:- *oxazolone, antimicrobial activity, heterocyclic compound*

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OP-039

Synthesis and Characterization of Quinazolinone Scaffolds

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ABSTRACT

Heterocyclic molecules have a chemistry that makes as much sense as aliphatic or aromatic ones. The foundation of medicinal chemistry research is thought to be heterocyclic molecules and the derivatives of these compounds, which have emerged as significant drug moieties. In the proposed study, benzoxazinone was used to synthesize a variety of novel (E)-3-(substituted benzylideneamino)-8-methyl-2-phenylquinazolin-4(3H)-one compounds. We changed the method for the synthesis of 3-amino-8-methyl-2-phenylquinazolin-4(3H)-one to a fusion reaction at 150° C by using hydrazine hydrate solution and separated by water, rather than using solvent, to avoid the problem of ring opening that is frequently encountered when synthesising quinazolines from benzoxazinone. IR, ¹H NMR, ¹³C NMR, mass spectral data, and elemental studies were used to characterise these newly synthesised Mannich bases. Quinazolinone derivatives are synthesised by using amine group substituted benzoic acid derivatives as starting materials and introduce a wide range of antimicrobial potential.

Keywords: *Benzoxazinone, Hydrazine hydrate, Mannich bases, Quinazolinone, Benzoic acid, Antimicrobial potential.*

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Synthesis, Characterization and Microbial Activity of Novel Chalcone series and it's Dihydropyrazole and Isoxazole Derivatives

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ABSTRACT

A new series of chalcones have been prepared by the Claisen-Schmidt condensation. A novel series of dihydro pyrazole and isoxazole derivatives have been synthesized by the reaction of respective chalcones with hydrazine hydrate/phenylhydrazine and hydroxylamine hydrochloride respectively. The compounds were characterized by FTIR, ¹HNMR, ¹³CNMR and MS; and assayed for their antibacterial activity against *S. Aureus* MTCC-96, *B. Subtilis* MTCC-441, *E. Coli* MTCC-443, *S. Typhi* MTCC-98 and antifungal activity against *A. Niger* MTCC-282 and *A. Clavatus* MTCC-1323 at different concentrations and compared with standard drugs. The minimum inhibition concentration (MIC) of the compounds were studied by the micro broth dilution method. **2d**, **2f**, **2k-l** and **3b-d** showed moderate to comparable antibacterial activity against *E. Coli*, *S.Typhi*, *B. Subtillis* and *S. Aureus*. All of these compounds did not show antifungal activity.

Keywords: *Isoxazole, Dihydropyrazole, Chalcone, Spectroscopic data and Microbial activity*

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Study on thermal, structural, morphological, elastic, optical, and magnetic properties of M-type Sr-Hexaferrite nanoparticles synthesized by solution combustion method.

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ABSTRACT

The nanocrystalline Strontium hexaferrite is synthesized by solution combustion route with a molar ratio of Sr and Fe nitrate as 1:11.5. TGA shows the thermal analysis and weight loss of the as-prepared sample. Then, the sample is calcinated at 900°C for 8h and the X-ray spectrum confirms the preparation of SrFe₁₂O₁₉ that exhibits a hexagonal crystal symmetry with a very little secondary phase of α -Fe₂O₃. Field emission scanning electron microscope enables the regular hexagonal platelets formation and elemental composition given by EDX. Transmission electron microscopy shows good crystallinity and the grain size calculation supports well with XRD and FE-SEM results. Fourier transform infrared spectrometry (FT-IR) is used for calculating bond length, force constant, stiffness constant, elastic moduli, and functional group present while Raman spectra confirms that all the peaks in the prepared material corresponds to vibration modes and M-type structure formation. UV-DRS is employed to find the optical energy band gaps of nano-hexaferrite. The Vibrating sample magnetometer (VSM) for magnetic properties at room temperature gives an excellent maximum energy product value (BH_{max}) with a less coercivity and high saturation magnetization that agrees well with the measurement of g-value by Electron spin resonance (ESR) sorts it as an impressive ferromagnetic nanoparticle for various magnetic applications.

Keywords: *M-type Strontium hexaferrite, solution combustion, thermal analysis, stiffness constant, Raman spectra, ferromagnetic nanoparticle*

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**Influence of the L-threonine on the properties of Ammonium
Pentaborate Single Crystals**

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ABSTRACT

The Ammonium Pentaborate (APB) is a well-known material for different application like piezoelectric, nonlinear optical and especially in UV and deep UV regions. L-threonine, finds usefulness for nonlinear optical and UV properties. Pure and L-threonine doped APB crystals were grown by constant temperature slow evaporation technique. The structure of grown crystals have confirmed orthorhombic symmetry by PXRD. The various functional groups determine by FTIR spectroscopy, which gave the confirmation of dopant in the crystal. The various elements were confirmed by EDAX. The optical properties like transmittance, skin depth, energy band gap etc. were characterized by Uv-Vis. The a.c. electrical conductivity of APB crystal is diminished as Lthreonine doped. The SHG efficiency is enhanced by 1.13 times by doping the L–threonine in ammonium pentaborate single crystal.

Keywords: *APB, Doping, Optical Property, Complex Impedance Study, SHG*

OP-044

A Review on 1+ and 4+ cations doping in spinel ferrites for their potential applications

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ABSTRACT

In recent years researchers are working on enhancing various properties of ferrite materials because of its versatile applications in various fields of science such as engineering, electronics, computer technology, industrial applications, communications etc. Ferrites structurally divided as spinel, garnet, magneto plumbites, orthoferrites. A spinel ferrite is an abstruse oxide crystal which makes it more industrially viable material. The structural properties of these materials play vital role in its various properties such as electric and magnetic properties. As these properties mostly depend on the cations distribution in interstitial sites, these can be changed by modifying the ferrite system with suitable dopants. In this collective review projection of different properties of spinel ferrites such as structural, magnetic, dielectric properties are discussed. As well as the effect of multiple doping of such as lithium (Li⁺) and titanium (Ti⁺) on these properties are also covered. It is found that by doping the lithium and titanium in various ferrite systems the entire new set of properties can be obtained. As lithium is the lightest cation and titanium is the best high-corrosion-resistance cation which can enhance various physical properties in the doped spinel oxides.

Keywords: Spinel Ferrite, Cations Distribution, Magnetic Properties, Dielectric Properties.

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OP-045

Analysis of Bismuth Telluride (Bi_2Te_3) with doped Selenium (Se) material

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ABSTRACT

Bismuth telluride is a topological insulator and Selenium doped material ($\text{Bi}_2\text{Te}_{3-x}\text{Se}_x$) where $x=0.1, 0.2$ & 0.3 . Samples have been prepared in the form of pellets (Bulk) with the compression method using a Palletizer. Pellets are made from the Palletizer by applying 5 ton pressure and 1mm thickness for the dielectric study. The dielectric Parameters studied by the help of VNA test solid fixtures under the frequency range 200 MHz to 20 GHz at room temperature. The dielectric Constant, dielectric loss and Impedance are measured. The dielectric loss (ϵ'') decreases because of reduction of space charge polarization effect which is produced Potential barrier. Dielectric dielectric materials originate from three distinct factors: space charge migration (interfacial polarization contribution), direct current (DC) conduction, and movement of the molecular dipoles For the structural study powder XRD analysis also done.

Keywords: *Bismuth telluride, Dielectric, Pallet, XRD analysis*

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OP-046

Plant-Mediated Synthesis of Zinc Oxide Nanoparticles

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ABSTRACT

Recently, nanotechnology has acquired great attention in the therapeutics for treating infectious diseases using nanomedicine against diabetes, cancer, and multidrug-resistant (MDR) microbe associated infections. Nanoparticles targeting the MDR pathogens are considered as complementary and alternative therapeutics. Their large surface area, and smaller dimension promote them to deliver drug at the site of infection. Nanoparticles can be synthesized by chemical, physical and biological methods. The chemical and physical methods are incompatible with the environment and toxic to the health. However, the biological synthesis of nanoparticles is eco-friendly, cost-effective, biocompatible, and safe compared to a chemical and physical process. Biogenic nanoparticles are synthesized from bacteria, yeast, fungi, algae, and plants. Phyto-genic synthesis of nanoparticles is considered promising due to the rich phytochemistry that not only helps to reduce the metal salts to their corresponding nanoparticles but also in their stabilization. Different nanoparticles composed of elemental silver (Ag), gold (Au), copper (Cu), titanium (Ti), zinc (Zn), etc. are synthesized from plants for their biomedical applications. Among different metal oxide nanoparticles, zinc oxide nanoparticles (ZnONPs) have great potential because of their unique applications in drug delivery and bioimaging due to their inexpensive and non-toxic nature along with high drug loading capacity and simple synthesis process. ZnONPs exhibit antidiabetic, antimicrobial, antibiofilm, anti-inflammatory, anticancer, and antioxidant, activities. The present study focuses on the synthesis of ZnONPs from different plant sources and their applications in different therapeutic fields.

Keywords: *Biogenic nanoparticles, plant extract, zinc oxide nanoparticles, characterization, biomedical applications.*

Plant Mediated Synthesis of Titanium Dioxide Nanoparticles for Biomedical Applications

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ABSTRACT

In the present time, the application of nanotechnology in combating different medical problems including multi-drug resistant organisms, cancer, diabetes, and bacterial infections has increased. Compared to conventional methods, nanotechnology provides an easy and simple alternative in the fields of medicine and environment. Among the different methods like physical, chemical, and biological used for the synthesis of nanoparticles (NPs), the biological methods are eco-friendly, non-toxic, and inexpensive. Different sources like bacteria, fungi, algae, and plants can be used for the synthesis of NPs. Synthesis of NPs from plants is majorly focused because of the biocompatibility, sustainability, and environment-friendly nature of the synthesized particles. Different NPs such as silver, copper, zinc, gold, etc. are reported from plants. Among these particles, TiO₂NPs are considered most important because of their unique characteristic features like higher stability, non-toxicity, specific surface chemistry, photocatalytic activity, anticancer, antioxidant, antibiofilm, antimicrobial, antidiabetic, and antiproliferative. These particles are also found active against the multi-drug resistant (MDR) bacterial pathogens like *Enterococcus faecium*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and *Enterobacter* species (ESKAPE). The current study mainly focuses on the plant mediated synthesis of TiO₂NPs, characterization, and their therapeutic applications.

Keywords: *Phytogenic TiO₂NPs, characterization, process optimization, mechanism, application.*

**Extracellular Synthesis of Metal Nanoparticles with Bioactive Peptides
Coating using Silver, Copper and Zinc Salts by *L. plantarum***

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ABSTRACT

Biological synthesis of metal nanoparticles coated with bioactive peptides using microorganisms has received profound interest because of their potential to synthesize nanoparticles of various size, shape and morphology. In the current study, synthesis of silver nanoparticles, copper Nanoparticles and zinc nanoparticles by Lactic Acid Bacteria *Lactobacillus Plantarum*. On growing the bacteria with 1 mM AgNO₃, CuSO₄ and ZnSO₄, it was found to have the ability to form silver, copper and zinc nanoparticles extracellularly at 37° C within 24 h at 6.8 pH of the MRS media, respectively. This was confirmed by the visual observation and UV–Vis absorption. Further characterization of nanoparticles done by transmission electron microscopy and scanning electron microscopy confirmed the size of silver, copper and zinc nanoparticles in 20 to 80 nm range. The synthesized metal nanoparticles have unique Bioactive peptides coating which enhances the stability and antimicrobial ability. They shows Anti-bacterial actions against grams negative and grams positive both type of organisms. Therefore, the current study is a demonstration of an efficient synthesis of stable silver, copper and zinc nanoparticles coated with bioactive peptides by *L. Plantarum*.

Keywords: *Keywords: Metal nanoparticles, Biosynthesis, Extracellular, L. Plantarum, bioactive peptides*

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Silver Doping Mediated Enhancement of Catalytic Dye Degrading Potential of Phytogetic Zinc Oxide Particles

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ABSTRACT

Dye-contaminated effluents released by various industries directly into waterbodies causing environmental pollution have become a global concern. Conventional methods are employed for the removal of dyes from water, but the approach of nanoremediation which uses nanotechnology-based biomaterials for the remediation of dyes has achieved great interest more recently. Synthesis of nanoparticles can be done using physical, chemical, and biological methods. Phytogetic synthesis of nanoparticles is eco-friendly and rapid. In this study, green synthesis of zinc oxide particles (ZnOPs) and silver mixed zinc oxide particles (ZnOAg1Ps, ZnOAg10Ps, ZnO10Ag1Ps) were carried out using *Plumbago auriculata* leaf extract (PALE). The phytochemical analysis and gas chromatography-mass spectroscopy (GCMS) analysis of PALE showed high concentrations of phenols, flavonoids, reducing sugar, starch, citric acid, and plumbagin which may act as a capping agent. The ZnOPs showed a UV absorption band at 352 nm while bands at 370 nm, 560 nm, and 635 nm were noted for ZnOAg10Ps, ZnO10Ag1Ps, and ZnOAg1Ps, respectively. Photoluminescence (PL) spectra of samples showed the band at ~450 nm, ~420 nm, ~456 nm, and ~470 nm. The particles were polydispersed with irregular, spherical, hexagonal, and rod-like shapes which were examined using high-resolution transmission electron microscopy (HRTEM). Energy dispersive spectra (EDS) confirmed the presence of elemental zinc (Zn), oxygen (O), and silver (Ag) in particles. X-ray diffraction patterns of synthesized samples confirmed the presence of ZnO and Ag. The synthesized particles showed excellent photocatalytic degradation of methylene blue dye with maximum degradation of 95.7% by ZnOAg1Ps with a rate constant of 0.0463 s⁻¹. The present study indicates that Ag-mixed ZnOPs synthesized using PALE play a significant role in the remediation of hazardous dyes and can act as an alternative strategy for the removal of pollutants from wastewater.

Keywords: *Green synthesis, Plumbago auriculata, silver mixed zinc oxide particles, characterization, dye degradation.*

OP-050

The Unravelling the Origin of Catalyst Deactivation/fine generation in Vanadium oxide base Sulphuric Acid Regeneration (SAR) catalyst

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ABSTRACT

The study enlightens the possible cause of catalyst deactivation and fine generation in SO₂ oxidation step in the Sulphuric Acid Regeneration (SAR) unit. Structural changes of potassium/vanadium based catalyst during the oxidation of sulphur dioxide identified as the major cause of catalyst deactivation. Such structural changes and their impact on catalyst property were determined using various physico-chemical characterization method like Loss on Drying, Loss of ignition, crushing strength, XRF, ICP, XRD, XPS, FTIR analysis. Reduction of overall crystallinity and phase changes of the catalyst plays a key role in the catalyst deactivation and fine generation. Loss on Drying (LOD) and Loss on Ignission (LOI) analysis shows the higher moisture content, which is identified as one of the cause of catalyst fine generation. The other possible causes catalyst deactivation, lower crushing strength and fine formation were determined by detailed analysis of XRD and FTIR, shows an increase in sulphate accumulation on catalyst surface along with phase changes and decrease in the crystallinity. FTIR analysis of simulated spent catalyst are well associated with the findings. Reduction/restriction of undesired impurities/moisture carried over with feed gas are the possible option to avoid such deactivation.

Keywords: SAR, Alkylation unit, Fine formation, Vanadium based catalyst, Simulated spent catalyst, catalyst deactivation.

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Tetrahydropyrimidine Derivatives: Design, Rapid Microwave Irradiated One-Pot Synthesis, and In Vitro Evaluation of Anti-Diabetic Activity

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ABSTRACT

The microwave irradiation of 1,3,4-oxadiazole containing aldehyde, substituted acetoacetanilide, thiourea/guanidine and substituted acetoacetanilide caused rapid and efficient synthesis of tetrahydropyrimidine derivatives. The significant yield of products, less time consuming, and catalyst-free synthesis were considered preferences of microwave irradiation. All synthesized compounds were characterized by ^1H NMR, ^{13}C NMR, IR, and mass spectrometry techniques. Synthesized compounds were evaluated bioassay for in vitro antidiabetic screening viz α -amylase inhibition strategy and checked their potency against standard reference drug acarbose.

Keywords: *Biginelli; polycyclic aldehyde; tetrahydropyrimidine; antidiabetic; microwave irradiation*

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OP-052

Culture Independent Methods AS Appropriate Tools For The Effective Exploration Of The Gut Microbiota

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ABSTRACT

Currently, the gut micro-flora is explored using two approaches: culture dependent and culture independent, by the researchers. One needs to focus more on the culture independent approach than culture dependent methods, for studying microbiome. The methods used for the identification of the microflora present at a particular site can be categorized under three domains: the PCR based techniques (16S rRNA sequencing, real time PCR, cloning of 16S rDNA), fingerprinting techniques (Degenerative Gradient Gel Electrophoresis - DGGE/ Temperature Gradient Gel Electrophoresis - TGGE) and probe hybridization techniques (DNA microarray, Florescent *In Situ* Hybridization - FISH). Along with these three domains, omic studies are currently used for a wide range of identification of different kinds of molecules from the gut microbiota (DNA, RNA, metabolites etc.). Here we are summarizing the methods used for exploring the gut microbiome exclusively by culture independent methods along with brief procedures as well as advantages and disadvantages of the particular procedures.

Keywords: *qPCR, DGGE/TGGE, FISH, DNA microarray, Gut microbiome.*

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Synthesis And Studies of New Pharmacologically Active Fused Heterocycles

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ABSTRACT

Tetrahydropyrazolopyridine derivatives were discovered as promising candidates having several biological activities. Thus a novel series of Tetrahydropyrazolopyridine were designed, synthesized and evaluated for various pharmacological activities such as antihypertensive, antidiabetic, and antiulcer activities. Structure activity relationship (SAR) studies employing *Tetrahydropyrazolopyridine* system revealed that N-substitution was required for good *in vitro* activity. Molecular docking studies of Tetrahydropyrazolopyridine derivatives ring system have indicated that substitution at position 1 and 5 can modulate activities of the molecules. A literature survey revealed that the presence of aromatic or aliphatic side chain at position 1 and –NH or –O substituted aromatic or aliphatic ring at position 3 are an essential requirement to get various activities.

Keywords: *Tetrahydropyrazolopyridine, in vitro, Structure activity relationship (SAR)*

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OP-054

In Vitro Assay of *Nicotiana Tabacum L.* extract on *Salmonella Typhi*.

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ABSTRACT

Enteric fever is a disease of the intestinal tract caused by *Salmonella typhi* (typhoid fever). The primary symptoms of enteric fever are fever, malaise, abdominal pain, and constipation. Annually, 21.6 million cases of typhoid fever, with 250,000 deaths occurring worldwide. Controlling infectious diseases using medicinal plants is the oldest healthcare known to mankind. Regardless of the enormous advances observed in modern medicine, medicinal plants are still playing vital roles. However, only a small proportion of medicinal plants are examined for bioactive compounds, which may vary in different factors. This study aimed to evaluate the antimicrobial activities of *Nicotiana tabacum L.* extracted by ethanol solvent against *Salmonella Typhi*. The result of in vitro antibacterial screening showed zone of inhibition of 35mm, 32mm, and 26mm in 1.0g, 0.5g, and 0.05g extracts, respectively. The Percent Yield Concentration (PYC) of *N. tabacum* extract on *S. typhi* was calculated and found to be 5.52g. The extract of *N. tabacum* displayed broad spectra of activity, and it efficiently subdued the growth of *S. typhi*. Further research is recommended to determine the bioavailability of these extracts to determine whether it is possible to attain the Minimum Inhibitory Concentration (MIC) levels in blood samples after oral consumption.

Keywords: *Antibacterial activity, Nicotiana tabacum L, Plant extract, Salmonella typhi*

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OP-055

Role of Human Microbiome in Obesity

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ABSTRACT

Human gut microbiome is relatively resilience in nature, tends to change in composition by variety of factors like food, lifestyle, environment, genetic trend, age, antibiotic consumptions and many more. Among these factors, food and lifestyle mostly affect the microorganisms present in the gut. Hence, this can be used as a treatment for the treating the metabolic disorders by changing the diet and lifestyle. The components present in the diet are utilized as a nutrition for the microorganisms and allows the proliferation of the 'good bacteria'. The ratio of Firmicutes/Bacteroidetes is very important for the assessment of the diseased vs normal condition. Obesity, malnutrition, autism spectrum diseases, diabetes are mostly known as a metabolic disorder; can be treated with the diet modification. The possible treatment may be either the diet or probiotic organisms which can use for the alteration in the gut microflora and hence, useful for treating the metabolic disorders. Here in this review, we are giving the brief of how gut microbiota changed from obese to normal condition; the dysbiosis and eubiosis.

Keywords: *Gut Microbiota, Obesity, Prebiotics, Probiotics, Synbiotics*

Gut Microbiota Dysbiosis and Malnutrition: A Comprehensive Review

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ABSTRACT

Among various non-communicable diseases, malnutrition has become a global health issue both in children and adults. Malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of nutrients. It has emerged as the silent killer for children under the age of 5 years worldwide. Malnutrition affects the population despite of its geography, gender, households, communities, and countries. It affects children in developing countries, hence it becomes very difficult to tackle different forms of malnutrition like wasting, stunting, underweight, and deficiencies in vitamins and minerals. Malnutrition is the term used for under-nutrition and over-nutrition. It has been observed that an interrelationship exists between an individual's diet and the gut microbiome. Around 10^{14} microorganisms are present in the human gut and affected by host genetics and external exposures. When dysbiosis occurs an alteration in the microbial community is observed which increases the pathogenesis of the disease in which potentially harmful bacterial species increase and protective bacterial species decrease. To overcome the issue of malnutrition novel strategies are employed. Probiotic foods are specifically designed to increase the good bacteria in the intestine. The use of probiotic bacterial strains helps in the improvement of the human gut which directly affects nutrient absorption. The use of several bacterial strains such as *Lactobacillus* and *Bifidobacterium* as food supplements resulted in nutritional interventions in the treatment of undernourished children. This review emphasizes the detailed relationship between gut microbiome and malnutrition and the use of probiotic bacterial strains in the treatment of malnutrition.

Keywords: *Malnutrition, gut microbiota, prebiotics, probiotics, Lactobacillus spp.*

OP-057

Plastic to fuel: An alternative solution to one of the biggest environmental challenges

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ABSTRACT

Plastic production has been rapidly increasing across the globe and, at the end of their life, most of the plastic products become waste disposed of in landfills or dispersed, causing severe environmental and health issues. According to economic expansion, the most widely used substance is synthetic plastic manufactured from petroleum, which plays an important role in our daily life as they are durable, versatile, lightweight, and inexpensive. These are often high molecular weight material and mostly contains branched and cross linked polymer structures, making it recalcitrant and resistant to natural decomposition. With regard to sustainability, recycling plastic garbage into fuels or, preferably to, individual monomers results in a considerably more environmentally friendly waste management process than dumping it in a landfill. The everyday need for plastics, which are made of petroleum-based materials, is expected to rise, which could lead to the depletion of non-renewable fossil fuels. Plastic production directly consumes about 4% of crude oil production. In addition, plastic garbage can impact the environment and contribute to a worldwide energy problem. Hence, the way forward is either to dispose it off or to reuse/recycle it. Fuel conversion from plastic waste is a promising strategy for its disposal and energy utilization. Plastic trash can be transformed into target fuels by breaking and/or modifying the chemical bonds present in the polymer. Currently, a wide range of strategies for turning plastic waste into fuel have been reported, including traditional pyrolysis, cutting-edge heat treatment, and advanced oxidation. Plastic oil has a heating value approximately equivalent to that of diesel fuel, no sulfur, a very low water and ash content, and an almost neutral pH, making it a promising alternative to conventional petroleum-based fuels. The current review discusses this aspect of plastic waste management to address both industrial as well as environmental concerns.

Keywords: *plastic waste, fuels, recycling plastic, non-renewable energy*

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OP-058

Assessment of potential probiotic properties of lactic acid bacteria isolated from dairy products

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ABSTRACT

Probiotics are a component of a bigger picture of bacteria and our body known as our microbiome. It is commonly known as helpful microbes and has several health advantages for our body and brain. They have several health benefits, including improving digestive health, reducing depression, and promoting heart health. Probiotics include a diverse range of microorganisms. Bacteria from the *Lactobacillus* and *Bifidobacterium* groups are the most prominent, as well as yeasts such as *Saccharomyces boulardii* can be utilized as probiotics. There are several sources to isolate probiotics. In my research work, probiotics were isolated from dairy products including Curd, Buttermilk, and cow milk. The isolates were exposed to various basic morphological and chemical tests in order to meet the specification for probiotic properties. The tests and properties included Gram staining, Negative staining, catalase test, oxidase test, IMViC (Indole, Methyl red, Voges Proskauer, and Citrate), urease test, and triple sugar ion, hemolytic activity, acid tolerance, bile tolerance, cell autoaggregation, cell surface hydrophobicity, antibiotic susceptibility test, antimicrobial activity. A total of 30 microbial strains were identified from 10 dairy products of different regions of Saurashtra in Gujarat, India. On the basis of primary screening, 10 isolates were selected. The selected isolates were Gram-positive, Rod-shaped, non-hemolytic, and showed high acid tolerance and high bile tolerance, demonstrating strong autoaggregation and immense surface adherence abilities. Additionally, the strains were evaluated for antibiotic susceptibility test against five different antibiotics. The findings of the study confirm the diversity of the microbial population which have valuable health-promoting benefits.

Keywords: *Probiotics, Dairy products, acid tolerance, bile tolerance, cell autoaggregation, cell surface hydrophobicity*

Review on Orthoferrites for their Magnetoelectric Applications

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ABSTRACT

Development of new engineering materials leads to the evolution of entirely new technology with applications of the miniature world of devices. For this development, researchers have been finding the compounds with coexistence of electric and magnetic properties in the single material. Ferrites have such types of properties because they contain Iron as a magnetic domain and other dopants with good electric properties. Material scientists are focusing on rare earth metals as a dopant because it leads to the coexistence of magnetic and electric properties in the novel materials. In this review, rare earth doped orthoferrites with perovskite ABO_3 type structure have been taken into consideration. Rare earth metal shows surprising properties for magnetoelectric device applications. By varying doping concentration as well as selecting suitable compounds in the ABO_3 type perovskite structure one can easily modify the properties as per the required applications. The main advantage of perovskite materials is that they can be easily synthesized by top-down and bottom-up approaches. These magnetoelectric materials have versatile applications in capacitors, sensors, radio-frequency filters, non-volatile memories, infrared detectors, protection circuits, optical switches and many more.

Keywords: *orthoferrite, perovskite, rare earth, magnetoelectric*

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OP-061

**Growth And Characterization of L–Asparagine Doped Zinc (Tris)
Thiourea Sulphate Single Crystals**

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ABSTRACT

The pure and L-asparagine doped Zinc (Tris) Thiourea Sulphate (ZTS) are semi organic nonlinear optical materials which have metal complexes of thiourea which have low UV cut off wavelengths, and high-power frequency conversion. The pure and L-asparagine doped ZTS grown by constant temperature slow evaporation technique. Good quality crystals of size 15x9x3mm³ single crystals were grown. The structure of grown crystals has confirmed orthorhombic symmetry by PXRD. The various functional groups are determined by FTIR spectroscopy, which gives the confirmation of dopants in the crystal. The various elements were confirmed by EDAX. The TGA-DTA studies confirmed the thermal stability of the grown crystals. The optical properties like transmittance, skin depth, energy band gap etc. were characterized by Uv-Vis. The SHG efficiency is enhanced by 1.26 times by doping the L-asparagine in Zinc (Tris) Thiourea Sulphate.

Keywords: *ZTS, Doping, Optical Property, Complex Impedance Study, SHG.*

OP-062

Methylene Blue Dye Degradation Using Copper Ferrite And Activated Carbon/Copper Ferrite Composite Synthesized Via Sol-Gel Auto Combustion Method

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ABSTRACT

A copper ferrite and novel activated carbon / copper ferrite composite was synthesized by sol – gel auto combustion method. The chemical composition was confirmed by Energy Dispersive X-ray Analysis (EDX), the porosity was checked by Scanning Electron Microscopy (SEM), the cubical phase was confirmed by X-ray diffraction (XRD) & the octahedral and tetrahedral force constants were calculated by Fourier Transform Infrared Spectroscopy (FTIR) of synthesized specimens. Synthesized specimens were used to degrade methylene blue solution (10 ppm) under the influence of hydrogen peroxide in mechanical stirring photocatalytic reactor. It has been observed that activated carbon / copper ferrite was more efficient than copper ferrite to degrade the methylene blue.

Keywords: ferrite, composite, sol-gel auto combustion, dye degradation, methylene blue

OP-063

Analytical Method Development and Validation for Simultaneous Estimation of Dapagliflozin and Vildagliptin by RP-HPLC Method in Pharmaceutical Dosage Form.

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ABSTRACT

The present work was the development of a simple, efficient, and reproducible stability-indicating reverse-phase high performance liquid chromatographic (RP-HPLC) method for simultaneous Estimation of Dapagliflozin and Vildagliptin in Pharmaceutical Dosage form. The Chromatographic separation was achieved on Kromstar) Vertex C₁₈ (250 ×4.6 mm, 5µm) column using 10 mM Potassium Dihydrogen Phosphate buffer: Methanol in the ratio of (75:25% v/v) pH 4.0 adjusted with Ortho-phosphoric acid at Detection wavelength 230 nm by linear gradient program. Flow rate was 1.0 mL min⁻¹ with a column temperature of 35°C. The Retention time was found to be 3.50 min and 6.00 min for Vildagliptin and Dapagliflozin respectively. The method was validated in terms of specificity, linearity, LOD, LOQ, accuracy, precision, and robustness as per ICH guidelines. The results obtained from the validation experiments prove that the developed and Validated RP-HPLC method is suitable for routine analysis.

Keywords: *Dapagliflozin, Vildagliptin, RP-HPLC, Pharmaceutical Dosage form.*

OP-064

Herbal Product- A Survey to Know the Impact on Daily Life

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ABSTRACT

Herbal products, herbal cosmeceuticals, nutraceuticals, phytopharmaceuticals and Ayurveda medicines are being used around the world increasingly. 25% of prescriptions contain herbal/medicinal plant ingredients & 80% rely on herbal products for health care. It is very important for students of pharmacy to be aware about the importance of herbal products and its prevalence in their daily life. Our aim is to make students aware about the importance and prevalence of herbal products and to measure the impact of herbal products in our daily life. A google form was prepared with questionnaires having both open and close ended questions on herbal products. 100 students of 5th semester B. pharmacy were given one-month time and asked to search and enter details about herbal products present at their home used by them and their family. Then all data were expressed as counts and percentages. A total of 86 students have filled out the form. We have found that total of 534 herbal products /formulations are being used by students and their family with maximum of 20 & with average of 6.44 in each house. Maximum used category of was herbal cosmeceuticals 33.9%, followed by house hold herbs 20.2%, followed by AYUSH products 16.5% followed by herbal products containing phytochemicals. Most used nutraceutical herb was Fenugreek 82.6% followed by ginger and garlic with 77.9%. Maximum used herbal cosmetics category product is herbal shampoo 83.7% followed by herbal oil with 66.3%. Maximum used Ayurveda product category was churna with 45.3%. Maximum used house hold herbal herbs were ginger. So, current survey revealed that herbal products impact in each corner of our daily life.

Keywords: *Herbal products, Survey on herbal, nutraceutical*

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OP-066

Exploration Of The Therapeutic Role Of B-Glucan And Its Novel Transdermal Iodine Patch Formulation In Hypothyroidism And Its Complication.

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ABSTRACT

Background: Hypothyroidism is the metabolic diseases in which thyroid hormone level are decrease and TSH level are increase. In the market only levothyroxine drug is available as a standard drug to cure of hypothyroidism but many of the drawbacks of levothyroxine and is available in the tablet form. Therefore we have formulated transdermal patch for the cure of hypothyroidism because it gives direct action on to the targeted organ and produce very fast recovery than tablet or other oral dosage form. β - Glucan obtain from many of the different source like mushroom, algae, kelp, yeast, fungi, cereals. According to their source β -glucan has different types of activity like immunomodulatory, anti-cancer, anti-oxidant, hypoglycemic and hypocholesterolemia.

Material and methods: In-vitro and In-vivo pharmacological determination of transdermal β -glucan iodine complex (prepared by solvent casting method) containing patch for different activity on hypothyroidism. The activity was included immune-stimulant, hypocholesterolaemia; anti-inflammatory and thyroid protective were tested and compared with oral solution of β -glucan iodine solution.

Result: The entire patch was found to be more beneficial toward the Hypothyroidism and its complication. The maximum potency was found to be higher dose of patch. Transdermal patch gives outstanding results toward the TFT level, cortisol level.

Conclusion: The transdermal drug delivery (patch) has potency to balance Hypothyroidism and its complication. The in-vivo studies revealed that the targeted formulation developed from β -glucan iodine complex has successfully cured the Hypothyroidism as well as proven to be anti-inflammatory, hypolipidemic and thyroid protective agent.

Keywords: *Hypothyroidism, β -glucan, iodine, anti- inflammatory, targeted (β -glucan iodine complex) patch.*

OP-069

A Pre-Clinical Study to Investigate the Protective Activity of Isolated *p*-Propoxybenzoic acid Against Diabetic Complications in Streptozotocin-Nicotinamide Induced Type-2 Diabetic Rats

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ABSTRACT

In-vitro studies justify the inhibitory action of *p*-propoxybenzoic acid (*p*-PBA) against α -amylase, α -glucosidase, and protein tyrosine phosphatase 1B which play a key role in the development of Type-2 diabetes (T2DM). The study was undertaken to evaluate the activity of *p*-PBA against diabetic complications in streptozotocin-nicotinamide induced diabetic rats. *p*-PBA was isolated from the seeds of *Acacia auriculiformis*. 36 Sprague-Dawley (SD) female rats were utilized for the study. Animals were injected with nicotinamide (290 mg/kg) followed by streptozotocin (65 mg/kg) to induce T2DM. An oral glucose tolerance test (OGTT) was performed in diabetic rats to evaluate the efficacy of *p*-PBA single dose administration. After the complication development period, animals were divided into 6 groups and treated with the respective treatment for 28 days. Animals were euthanized and lipid profile, heart hypertrophy, kidney hypertrophy, protein, creatinine, and albumin levels were measured. The efficacy of *p*-PBA against diabetic neuropathy was measured by hot plate method. The hearts and kidneys of 3 animals in each group were isolated for histopathological examination. *p*-PBA significantly regulated the levels of blood glucose levels ($P < 0.001$) over the single dose administration. A significant improvement ($P < 0.001$) was observed in levels of lipid parameters in animals treated with *p*-PBA. Diabetic animals treated with *p*-PBA showed a significant reduction ($P < 0.001$) in cardiac and kidney hypertrophy. *p*-PBA significantly increased the levels of total protein ($P < 0.001$) and albumin ($P < 0.001$) in diabetic animals. *p*-PBA acid significantly reduced the elevated levels of creatinine ($P < 0.001$) in diabetic animals. A significant increase in the nociceptive response ($P < 0.001$) was observed in animals treated with *p*-PBA. A notable protective effect of *p*-PBA was observed through the histopathological examination of the heart and kidney. *p*-PBA can be considered effective against diabetic complications, including cardiomyopathy, nephropathy, and neuropathy.

Keywords: *p*-propoxybenzoic acid, Type-2 Diabetes, Cardiomyopathy, Nephropathy, Neuropathy

OP-070

Tackling Formulation Incompatibility Issue Of Tablet Dosage Form

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ABSTRACT

The Objective of this work was to investigate the discoloration issue of marketed fixed dose formulation of Aceclofenac and Drotaverine. Post marketing stability issues of many pharmaceutical products may cost their manufacturer and also questions the quality of product. Hence studies to resolve such issues was much required for the benefit of the pharmaceutical industry. From the literature survey, it was evident that Aceclofenac and Drotaverine are incompatible with excipient magnesium stearate, a lubricant used in the tablet. Moreover, the possibility of discoloration due to moisture content of the tablet was also checked, as the discolored tablet was having soft texture. Interaction between the ingredients was confirmed by analytical methods like HPLC, FTIR and DSC. And moisture content was checked using Desiccator and hot air oven drying techniques. From the analytical methods, it was concluded that lubricant can be replaced with other suitable lubricant to obtain final stable formulation without discoloration issues. Discoloration defect free tablet formulation was prepared using the new effective formulation prepared by replacing the incompatible excipients from the formulation. Such study for troubleshooting actual market formulation issues can be very helpful to the pharmaceutical formulators as well as researchers.

Keywords:- Aceclofenac, Drotaverine, Marketed formulation, Discoloration defect, Drug-excipients incompatibility

OP-072

A Review on Analytical Methods For Drug Combination Used In The Treatment Of Cancer

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ABSTRACT

In the U.S., prostate cancer is the second most common cancer in male patients. Approximately 10-20% of male patients with advanced prostate cancer are estimated to develop castration resistant prostate cancer (CRPC) within five years, and at least 84% of these men may develop metastases at the time of CRPC diagnosis. Patients with advanced prostate cancer have a particularly poor prognosis, and the five-year survival rate remains low. Food and Drug Administration (FDA) Accepts Submission of Supplemental New Drug Application for LYNPARZA® (olaparib) in Combination With Abiraterone and Prednisone or Prednisolone for Patients With Metastatic Castration-Resistant Prostate Cancer and Grants Priority Review. To develop method and validate it for the following drugs and its combination by using high performance liquid chromatography (HPLC), high performance thin layer chromatography (HPTLC), thin layer chromatography (TLC) and ultraviolet (UV) spectroscopy. The combinations we have studied were abiraterone and prednisolone, abiraterone, prednisolone along with Olaparib and abiraterone and Olaparib. My article was based on the review of currently available method development and validation of the drugs including abiraterone, prednisone and olaparib.

Keywords: *Abiraterone, Prednisone, Olaparib, anticancer, UV spectroscopy, HPLC*

OP-073

QbD Based Stability Indicating RP-HPLC Method Development And Validation For Simultaneous Estimation Of Imipramine HCl And Alprazolam In Tablet Dosage Form

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ABSTRACT

A simple, rapid, economical, precise and accurate Stability indicating RP HPLC method for simultaneous estimation of Imipramine HCl and Alprazolam in their combined dosage form has been developed. A reverse phase high performance liquid chromatographic method was developed for the simultaneous estimation of Imipramine HCl and Alprazolam in their combined dosage form. By using box behnken design methods have been developed and optimized. The separation was achieved by LC- 20 AT C₁₈ (250mm x 4.6 mm x 2.6 µm) column and Buffer (pH 5.0) : Acetonitrile (25:75V/V%) as mobile phase, at a flow rate of 1 ml/min. Detection was carried out at 216 nm. Retention time of Imipramine HCl and Alprazolam were found to be 3.560 min and 5.427 min respectively. The method has been validated for linearity, accuracy and precision. Linearity observed for Imipramine HCl 50-150 µg/ml and for Alprazolam 0.5-1.5 µg/ml. The percentage recoveries obtained for Imipramine HCl and Alprazolam were found to be in the range of 99.57-99.88 and 100.54-100.80 respectively. Developed method was found to be accurate, precise and rapid for simultaneous estimation of Imipramine HCl and Alprazolam in their combined dosage form. The drug was subjected to stress condition of hydrolysis, oxidation, photolysis and Thermal degradation, Considerable Degradation was found in Acid degradation. The proposed method was successfully applied for the simultaneous estimation of both the drugs in commercial Combined dosage form.

Keywords : *QbD, Imipramine HCl and Alprazolam, Stability indicating RP-HPLC Method, Validation.*

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Formulation And Evaluation Of Novel Nanosuspension Based *In-Situ* Gel Of Itraconazole For Vaginal Administration.

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ABSTRACT

The purpose of present research work was to formulate nanosuspension based *in-situ* vaginal drug delivery systems of Itraconazole in order to enhance its solubility as well as bioavailability. Various nanosuspension batches were prepared by the nanoprecipitation technique and employed 4⁺ Full factorial experimental designs. The prepared nanosuspension was evaluated using parameters like particle size, saturation solubility, entrapment efficiency, drug content, and *In-Vitro* skin permeation. The Particle size in optimized nanosuspension was 319.3±1.69. The optimized nanosuspension was converted into nanosuspension based *in-situ* vaginal gel by using Poloxamer 407, and HPMC ELV 50 using cold method. Significant improvement in permeability was observed. The composition of the optimized formulation of Nanosuspension based gel showed the highest value of drug permeation at the end of 12hr as compared to plain gel of Itraconazole. The study suggests that Nanosuspension based *In-Situ* Vaginal gel is the most promising approach to enhance bioavailability of Itraconazole.

Keywords: *Factorial design, Itraconazole, Nanoprecipitation, Nanosuspension.*

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OP-077

Novel Therapeutic Treatments Approaches for Stroke Rehabilitation

- A Narrative Review.

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ABSTRACT

Stroke is defined as sudden loss of neurological deficits resulting from ischemic or hemorrhagic lesions in the brain, which lasts more than 24 hours. It is caused by interruption of blood flow to the brain usually by atherosclerotic plaques that occur at certain sites of predilection. Stroke is a global health problem. It is the second commonest cause of death and fourth leading cause of disability worldwide. Many advancements have occurred in the field of stroke rehabilitation over the last 05 years. While a study from the Stroke Journal notes that more research has been done on stroke treatment versus recovery after stroke, there are still some new rehabilitation techniques that are worth exploring. The aim of this narrative review is to examine the available literature for novel therapeutic treatments approaches to recovery in stroke patients. Literature was searched using many electronic databases. Additionally, a reference list of most prominent articles were searched to increase the search accuracy, as much as possible. Through various literature search we find out that Transcranial Magnetic Stimulation, Motion-Sensing, Gamified Neuro Rehabilitation Devices, Neurologic Music Therapy, Virtual Reality, Robot Assisted Arm Training, Rhythmic Cueing are the novel therapeutic treatment approaches are available and it's give faster recovery in stroke patients. Many literature suggest that all techniques are novel effective therapeutics approaches so can be used for stroke rehabilitation.

Keywords: *Stroke rehabilitation, Motion-Sensing, Gamified Neuro Rehabilitation Devices, Neurologic Music Therapy, Robot Assisted Arm Training, Rhythmic Cueing.*

OP-078

Physiotherapeutic Approaches in Rehabilitation of Shoulder Dysfunction: A Systematic Review

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ABSTRACT

The shoulder is an unique anatomical structure with an extraordinary Range of Motion (ROM) that allows us to interact with our environment. The shoulder consists of three bones and four joints. Among the joints of the shoulder, which are the glenohumeral(GH), sternoclavicular(SC), acromioclavicular(AC), and scapulothoracic joints(ST), the glenohumeral joint is the major shoulder joint that involves a complex articulation between the humeral head and the glenoid cavity of the shoulder girdle. The global elevation range of motion (ROM) of the arm is mainly the result of a coordinated motion between the movements of the GH and ST joints, which contribute 30% to 40% of the total movement of the arm. Shoulder pain is the third most common musculoskeletal disorder, with incidence rates up to 2.5% and prevalence figures that range from 6.9% to 26% for point prevalence, which rise up to 66.7% for lifetime prevalence in the general population. The search was performed using PRISMA Guidelines, relevant keywords will be used for the search through the electronic database PubMed, PEDro, MEDLINE, SCOPUS, CINAHL and Cochrane Reviews till September 2022 to locate the scientific research on therapeutic approaches for shoulder dysfunction. The study included research on various devices offering Continuous passive movements, active assisted exercises and resisted exercises. Downs and Black Checklist is used to assess the methodological quality of intervention studies. The abstract of the located articles was read to select the appropriate article and full text was evaluated of the relevant research. There are various physiotherapeutic approaches for the treatment of shoulder dysfunction. There are many devices which offers Continuous passive movements, active assisted exercises and resisted exercises, but there is no device which can provide all the treatment regimes in a single device.

Keywords: *Shoulder pain, shoulder dysfunction, Continuous passive movements, active assisted exercises, resisted exercises*

OP-079

CHECK UPON THE MOBILE PHONE IMMEDIATELY AFTER WAKING UP CAN CAUSE STRESS, ANXIETY AND DEPRESSION IN COLLEGE GOING STUDENTS

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ABSTRACT

BACKGROUND: The present study addressed the question of whether there is any relationship between cell phone use or addiction suddenly after waking up because now a day most of the students using mobile phone immediately or after 1 hour of waking up have symptoms of stress, anxiety or depression in college students within age of (18-25) years.

AIM: Using a mobile phone immediately after waking up can cause stress, anxiety and depression in college going students.

METHODOLOGY: An observational study was conducted of 200 college going students which were randomly selected between the age group 17 to 24 years. Then data was collected by taking a basic assessment form and questionnaire – DASS (Depression Anxiety and Stress Scale) after that their response score was calculated. and statistical analysis was done.

RESULTS: Results Analysis was done by using Microsoft excel Mean were calculated and comparison between the groups was done and so null hypothesis was accepted.

CONCLUSION: The present study reveals that checking mobile phones immediately after waking up and cannot cause stress, anxiety and depression in college going students. But long term use of smartphones may cause sleep problems in students, which leads to stress anxiety and depression.

Keywords: *Mobile phone use, Morning anxiety, Phone use after waking up, Immediate phone use, DASS 21 (Depression, Anxiety, Stress Scale)*

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OP-080

**A STUDY TO CORRELATE BETWEEN BMI AND CARDIORESPIRATORY FITNESS
AMONG COLLEGIATE STUDENTS: A CORRELATIONAL STUDY**

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Abstract

BACKGROUND: Cardiorespiratory fitness is the most important part of healthy lifestyle. Body fat can be measured by BMI. CRF and body composition are related to health have been the focus of researchers in the field of health and physical education. Over the past four decades, there has been an increase in prevalence of overweight and physical fitness declination in adult across all genders. Physical inactivity and sedentary lifestyle lead to accumulation of adipose tissue.

AIM: The effect of body mass index on cardiorespiratory fitness among collegiate students.

METHOD: The present study was carried out in the students of age group 18 to 25 years with collegiate students. 142 students were selected based on inclusion and exclusion criteria. They were assessing with McArdle step test.

RESULT AND DISCUSSION: Normal distribution of data was assessed. BMI and VO_{2max} were analyzed with Pearson's correlation test using SPSS version 21. It is shown statistically significant negative correlation between BMI and VO_{2max} .

CONCLUSION: This was reported that VO_{2max} increased as the value of BMI decreased and VO_{2max} decreased as the value of BMI increased. So, the appropriate planning should be made to maintain normal BMI and Cardiorespiratory fitness.

Keywords: *Body Mass Index, Cardiorespiratory Fitness, VO_{2max} Collegiate Students*

OP-081

A STUDY TO FIND OUT THE EFFECT OF PILATES EXERCISE ON LOW BACK PAIN DUE TO PRIMARY DYSMENORRHEA: A RANDOMIZED CONTROLLED TRIAL

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ABSTRACT

Primary dysmenorrhea is a common problem among the young females. It affects daily routine activities and quality of life. It is characterized by lower abdominal pain which may irradiate to the thighs and lower back. Pain appears the day before or during the first menstrual cycle day. Low back pain is the most common symptom among females with primary dysmenorrhea. Pilates is a series of exercises based on progressive movement the body is able to perform. It helps in preventing injuries and provides pain relief. This is why the study is planned to know the effect of Pilates on low back pain due to primary dysmenorrhea. The aim of this study to know the effect of Pilates exercise on low back pain in females with primary dysmenorrhea. This is an experimental study on young females with the age group of 18-25 years studying in school of physiotherapy, RKU. 40 subjects were selected conveniently as per criteria including co-operative individuals and having low back pain during menstruation. Females having children and having any pelvic or gynecological diseases and being treated with any physical therapy or under drug were excluded. All subjects were submitted to a protocol of 7 Pilates ground exercises aimed at the lower back region. Pain intensity was evaluated by numerical pain rating scale. The result of paired t test and unpaired t test suggests that Pilates have significant effect on low back pain during menstruation. The pain is decreased due to the phenomenon called exercise- induced analgesia, that is during treatment with Pilates, these patients may have increased their pain threshold due to the adjustment of endogenous pain control mechanisms. The body would start to secrete more neurotransmitters, such as norepinephrine, serotonin, enkephalin and dopamine, which would act to inhibit and control pain. Result of this study indicates that Pilates as physical activity has significant effect on low back pain due to primary dysmenorrhea. Thus, Pilates reduce low back pain during menstruation in females with primary dysmenorrhea.

Keywords: *Pilates exercises, primary dysmenorrhea, low back pain.*

OP-082

Safety, Feasibility and Efficacy of Subject Specific Integrated Multi-Sensory Stimulation Program For Patients with Severe Traumatic Brain Injury in Acute setup

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Abstract

Subject Specific Integrated Multi-Sensory Stimulation Program (SSIMS) is a newly structured stimulation program comprising the Personal, recreational and professional components of a subject's daily life into a treatment plan delivered through multiple sensory channels in an integrated manner in functional position with added personal salience. The objective of this study is to evaluate safety, feasibility and efficacy of SSIMS program in patients with severe traumatic brain injury (TBI) in acute setup. There are two phases of design: Phase 1: Single arm trial and Phase 2: Parallel arm –Randomized controlled Trial. Participants with age ≥ 18 years ≤ 65 years, both gender, Glasgow Coma Scale (GCS) ≤ 8 for ≥ 24 h from the event; stable hemodynamic (absence of dangerous variations of Mean Arterial Pressure or Heart Rate), admitted to neurosurgical ICU, with approval of treating physician shall be considered for participation in study.

Intervention: Phase 1: SSIMS, Phase 2: Control group -Conventional coma stimulation program
Experimental group- SSIMS program. Treatment would be therapist guided and duration of treatment would be same for both groups i.e.) thrice a day each session lasting for 45 mins

Measurement and main results: Baseline: Vitals, Glasgow's coma scale (GCS), Full Outline of Unresponsiveness scale (FOUR score scale), Coma recovery scale –revised (CRS-R), Ranchos Los Amigos (RLA), Agitated Behavioral Scale (ABS), and Disorders of Consciousness Scale-25 (DOCS-25)

Reassessment: Every day: GCS, FOUR score scale, CRS-R, RLA. ABS, DOCS-25 shall be carried out when the patient is transferred from ICU to ward irrespective of the day post injury, 4th day, 7th day and 14th day /at time of discharge. On Discharge: Length of stay and Glasgow's outcome scale-extended (GOS-E). Vitals shall be noted before, during and after every session. Challenges faced during delivering the intervention would be noted. Adverse events and reactions (serious and not serious) would be documented during and after each session.

Conclusion: We hypothesize that SSIMS may turn out to be a safe and feasible program to influence the functional outcome for patients with severe Traumatic brain injury in acute setup.

Keywords:- SSIMS, Traumatic brain injury

OP-083

Relationship Between Sit to Stand Ability, Cognition, Freezing of Gait and Activities of Daily Living in Parkinson's Patients: A Cross Sectional Study

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ABSTRACT

Background: “Sit to stand” being a prerequisite for walking, the inability of patients to perform it can result in institutionalization, Cognition and freezing of gait also impaired functioning and mobility in activities of daily living. There was a need to find out whether “sit to stand” ability correlates with cognition, and quality of life in Parkinson's patients.

Methods: It was a cross sectional study in which thirty-three Hoehn & yhar stage 1,2, and 3 patients aged 50 to 70 years were included. Patients with musculoskeletal impairments of lower extremity which would affect walking were excluded from the study. Each patient performed five times sit to stand (5TSTS) from a chair and time taken was recorded. Mini mental scale (MMS) taken for cognitive impairment. We were taken a Freezing of gait questionnaire and Parkinson's disease activities of daily living scale (PDADLS).

Result: Correlation between the outcomes of the variables was analyzed using Pearson correlation coefficient. The 5TSTS scores showed strong positive correlation to PDADLS and with MMS weak positive correlation. However, a moderately positive relationship was found between freezing of gait and PDADLS.

Conclusion: The study concludes that change in the 5TSTS performance can affect motor functions and freezing gait like daily living activities of life but not any significant in cognitive functions. Exercise training focusing on sit-to-stand ability may also influence activities of daily living (ADLs) and freezing gait in Parkinson's patients.

Keywords: *Cognition, Dynamic Balance and gait, freezing gait, Parkinson's Disease, Sit to Stand Ability.*

OP-084

To Analyze The Ergonomic Advantage In Performing Cardiopulmonary Resuscitation (CPR) : Observational Study

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ABSTRACT

Background: Survival of people with cardiac arrest depends on the time and quality of CPR. The quality of CPR is depending upon the skill of CPR providers and physical fitness. High quality compression requires a lot of energy and CPR providers may end the CPR or compromise with the quality of CPR due to physical tiredness. To maintain the energy level until advanced life support arrives remains the challenge for providers. We have observed that the change in posture of the provider may save energy and sustain for a longer time to proceed with CPR. **Aim:** To analyze the ergonomic advantage in performing Cardiopulmonary Resuscitation (CPR). **Objective :** 1) To understand the effect of ergonomic position in performing high quality CPR 2) To analyze whether the change in position has any effect on energy expenditure 3) To explain the role of positional components in utilizing energy. **Methodology Material:** Paper, Measure tap, calculator, Mat, Stop Watch, Apple watch series 1, Mannequin, Infi Deluxe Mercury Sphygmomanometer, Stethoscope, Face mask **Method :** In this pilot study, 30 BLS certified individuals will be selected according to inclusion criteria and perform high quality CPR as per the guidelines of AHA in two different positions. **Day: 1** All subjects pre vital will be taken like HR, BP, RR Then group: A will perform 1-man CPR for 2 min according to standard guidelines and group: B will perform 1-man CPR for 2 min by assuming ergonomic position. **Day: 2** Reverse the task. Difference in energy expenditure from pre to post will be analyzed by Apple Watch series: 1 and HR based energy expenditure formula . **Outcomes measure :** -Vital: Heart Rate , Respiratory Rate , Blood Pressure -Energy expenditure in form of calories: Apple Watch series:1 , HR based energy expenditure formula **Statistical analysis :** The data will be statistically analyzed. According to normal distribution of data test will be selected. By using SPSS 23 and level of CI will be kept 95% and P value at 0.05.

Keywords: *Ergonomic posture, cardiopulmonary resuscitation (CPR), Energy expenditure*

OP-085

A Study To Evaluate Correlation Between Respiratory Function Measures – MVV, FEV1, FVC, & FEV1/FVC Ratio To Pain, Disability Index & Craniocervical Angle In Persons With & Without Chronic Neck Pain

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Abstract

Chronic neck pain is one of the most common musculoskeletal pain conditions experienced by many people during their lives. Due to increased use of Tech devices & modern life style, forward head posture & resultant neck pain becomes quiet common. Although patients with neck pain are managed predominantly as musculoskeletal patients, there are indications that they also have poor pulmonary function as limited movement of the neck muscles can result in impaired chest movements. The aim of this study was to examine whether patients with chronic neck pain have impaired pulmonary measures. A cross sectional observational study was conducted to evaluate pulmonary function measures in patients with chronic neck pain. 100 subjects included dividing them into 2 groups. Group A: Patients with Chronic Neck Pain. Group B: Age & sex matched healthy individuals. Written Consent was taken from the subjects and the subjects were made to understand the purpose of the study. Spirometry was performed for all the subjects. Forced vital capacities (FVC), forced expiratory volume in the first second of FVC (FEV1), ratio of FEV1/FVC and maximum voluntary ventilation (MVV) were recorded. Neck Disability Index (NDI), Numeric Pain Rating Scale (NPRS) for pain & Craniocervical Angle (CCA) had also been considered for both the groups. Data analysis was done using Microsoft office Excel. The results showed that patients with chronic neck pain yielded significantly reduced FVC, FEV1 and maximum voluntary ventilation ($P < 0.005$), but FEV1/FVC ratio were not affected significantly ($P > 0.5$). Craniocervical Angle & Pain Intensity was found to be significantly correlated with respiratory function. Patients with chronic neck pain do not have optimal pulmonary function. Cervical spine muscle dysfunction in parallel with pain intensity and kinesiophobia are factors that are associated mainly with this respiratory dysfunction.

Key words: *Chronic Neck Pain, Pulmonary Function Tests, Neck Disability Index, Numeric Pain*

OP-086

**Various Bronchial Hygiene Techniques in Pediatric Population:
A Systematic Review**

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ABSTRACT

BACKGROUND: Prevalence rate of the bronchial secretion is 1-3% in the pediatric population it will lead to severe diseases and hospitalization necessary. Due to inflammation or infection of the pulmonary system hyper secreted the mucus in the lung which will be needed to remove by bronchial hygiene techniques. The aim of the study was to review the different bronchial hygiene techniques to remove the secretion in the pediatric population. **METHOD:** A systematic review based on PRISMA guidelines and conducted research structured around the bases of PubMed, Google scholar, Wiley Library, PEDro. 10 articles published between 2000 and 2022 were included. Inclusion criteria were 1) full text English article 2) RCT with bronchial hygiene therapy 3) pediatric patient who was admitted in hospital. PEDro scale < 5 and duplicate articles were excluded. Based on the searched article there are various devices and/or manual techniques currently available in practice for bronchial hygiene therapy but an accurate impact and need of the technique/ device in therapy demands further research.

KEYWORDS: *Bronchial Hygiene Technique, Pediatric Patients, Admitted in Hospital, Retention of secretions*

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OP-089

Parsonage – Turner Syndrome – A Case Study

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ABSTRACT

Parsonage Turner Syndrome (PTS) is a term used to describe a neuritis involving the brachial plexus, and is also referred to as Idiopathic Brachial Plexopathy or Neuralgic Amyotrophy. PTS may present with symptoms of an isolated peripheral nerve lesion, although the pathology is thought to lie more proximally. It generally involves one upper limb; mostly the axillary nerve, the upper trunk of brachial plexus, the suprascapular nerve & the long thoracic nerve are affected. It is an uncommon neurological disorder characterized by rapid onset of severe pain in the shoulder and arm. This acute phase may last for a few hours to a few weeks and is followed by wasting & weakness of the muscles in the affected areas. There could be several causes of development of PTS, multiple theories exist including genetic or hereditary neuralgic amyotrophy, however experts do not know the exact cause.

3 per 100,000 get PTS each year. More males than females are affected with more common in young adults, but young children & the elderly have reportedly had it, too. Here I would like to present a case report to highlight clinical thinking & rational combined with the progression & results of physical therapy treatment for a 9 year old with PTS.

Keywords: *Brachial Neuritis, Parsonage Turner Syndrome, Brachial Plexopathy, Rare Shoulder Diseases, Neuralgic Amyotrophys*

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OP-090

Breathing Retraining Adjuncts - A Systematic Review

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ABSTRACT

Background: ‘Breath is life’, the importance of breath we had seen during pandemic COVID-19. Deficiency of oxygen supply and desaturation has shaken modern medicine. However, positioning, breathing exercise besides counseling served as a key to survive the patient in such a situation. Moreover, pre and post-surgical conditions breathing exercise found effective to minimize pulmonary complications and early recovery of patients. Therefore, our primary objective of the study was to find out the existing devices being used as adjuncts in breathing retraining and understand its effectiveness in routine practice of chest physiotherapy. **METHOD:** RCTs till July 2022 were searched using the electronic database, MEDLINE, PEDRO, CINHAL, PUBMED, Google Patents, and included in review based on PRISMA guideline’s criteria and research articles studied devices as an adjuncts to physiotherapy in respiratory disorders. Device functionality involving inspiratory or expiratory with or without resistance are available can be used during physiotherapy as adjunct to management. However, not all devices are found to be multifunctional.

Keywords: *Breathing exercises device, breathing, physiotherapy*

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OP-092

A study on effect of advertisement on Purchase Intention

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ABSTRACT

The research topic “A study on effect of advertisement on Purchase Intention” is aimed at studying the effect of advertisement on the behavioral aspect of customers of different gender, education, age and income. The objective is to understand the purchase intention of different customers. At the same time it also aims to explore the relationship between different types of advertisements and Purchase intention. With the use of a primary data collection tool. The responses will be collected from the respondents from the Saurashtra region to understand the effect of advertisement on Purchase intention. The study will try to reveal the effect in the sense of whether the customer’s Purchase intention is influenced by the advertisement or not. How the people of different demographic profiles persuade the advertisement in the relation of buying behavior specifically in Saurashtra region. The data will be collected from 100 respondents to measure the effect. At the same time different aspects will also be covered in the process of finding the outcome. In the process it will also explore the other aspects of consumer behavior like consumption patterns, amount spent for the consumption, various media of advertisement and effect of it on different customers. This study is specifically done in the framework of Saurashtra region as there are many local brands also available with local media advertisements and consumption rate is also high in the selected frame for the commodity.

Keywords: *advertisement, purchase intention, advertisement effect, Saurashtra region.*

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OP-093

An Analytical Study on Performance of Academic Organizations in SSIP 1.0

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ABSTRACT

The Gujarat Government is taking many steps to improve the skills and starting new startups with new ideas. As our Prime Minister Narendra Modi also believes in Skill India, Make in India, Made in India. He always inspires the new entrepreneur to start the business. The Government has many different schemes like 'Students Startup and Innovation Policy', Pradhan Mantri Mudra Yojana etc. The objectives of the research paper are to analyze year on year grantees of SSIP scheme, to investigate the key outcome variables viz, Number of POC, Startup and Patent and to carry out comparative analyses of grantee institution region and type of institution wise. This research will help the Government, Entrepreneur, Student and Faculties for their future endeavors.

Keywords: *Students Startup and Innovation Policy, Entrepreneurship, Startups, Patents*

OP-095

Exploratory study on Buyer's behavior while purchasing a helmet in Saurashtra region.

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Abstract

According to Section 129 of the Motor Vehicles Act, 1998, "Every person, above four years of age, driving or riding a motorcycle of any class or description, shall, while in a public place, wear protective headgear conforming to the Bureau of Indian Standards. Two-wheeler automobile market of India is one of the most competitive markets in the world and also has emerged as one of the largest automobile markets in the world. In the current paper, an attempt has been made to examine various factors that affect the buying behavior of consumers while selecting a helmet. Primary data was collected from people of different ages, occupations, gender and etc. of the Saurashtra region through a structured questionnaire and further data were analyzed using various statistical tools to derive a meaningful conclusion. So this study of consumer purchasing behavior will help everybody as all are consumers and so it is essential for a marketer to understand which factors affect the most for the consumer while they purchase the helmet. And this will help the marketer to formulate different marketing strategies.

Keywords:- *Bureau of Indian standards, consumer, buying behavior, helmet, marketing strategies*

OP-096

Role of Accelerator in Catalyzing Your Startup Journey: Literature Review

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ABSTRACT

Accelerators are an integral part of the startup ecosystem and play a major role in the success of innovative business startups and ecosystems. There are many accelerator programs these days and it's difficult to decide which program will suit you. What are the different types of accelerator programs which are prevalent now and how to choose programs which best fit the startup needs? This paper provides an overview of the current literature available for accelerator programs. It covers various accelerator programs, their classification and their impact on startups, review of literature published on definition of accelerator program and what distinguishes them with other startup programs, comparative analysis of different types of accelerator program being offered and what constitutes the success of the program. How does this program promote growth of startups and economic development? Although little empirical study has been done on accelerator programs, there is a gap to have standardized programs to give best results.

Keywords: *Accelerators, classification, startup ecosystem, entrepreneurship development, early stage, programs*

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OP-097

Analysis of Women Entrepreneurship Platform; An initiative by Nitti Aayog

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Abstract:

The aim of this study is to provide a detailed analysis about the Women Entrepreneurship Platform (WEP), an initiative of The National Institution for Transforming India, The NITI Aayog. The Women Entrepreneurship Platform aims to identify and connect women entrepreneurs by creating a friendly and unified platform that helps women to start and succeed in their entrepreneurial endeavours. The Women Entrepreneurship Platform (WEP) is a Government of India initiative by NITI Aayog with collaboration with private partners by providing mentoring and handhold them in their journey from starting up to scaling up and expanding their ventures to promote and support aspiring as well as established women entrepreneurs in India. In this study, all the details of remarkable journey of the women entrepreneurship platform and the details of recently launched Women Entrepreneurship Platform 3.0 will be analysed by collecting secondary data from NITI Aayog and other authentic sources. Statistical analyses will be done by using SPSS. Women entrepreneurs can add meaningful contributions to the GDP of our country and our national development. If we compare the number of women entrepreneurs from the last decade, these numbers are too much but if compared with developed countries, these numbers are very few. So, this study will contribute to evaluate and sensitize the initiative taken by NITI Aayog by collaborating with partners from different sectors to provide all services at one platform.

Keywords: *Women Entrepreneurship Platform, Start-Up, Women Development, GDP, Encouragement.*

OP-100

Importance Of Non-Financial Information In Startup Investment Decisions

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ABSTRACT

Economies of the 21st century are fueled by Startups. They play a crucial role in changing the landscape of the country and its economy. Day in and day out the world is witnessing startups driven by innovative products/ services or by disruptive technologies, which ultimately pushes society and economy towards growth and recovery. Many countries are facing challenges in providing proper opportunities and ecosystems for potential startups to make their footprints in a struggling economy. Innovators/Entrepreneurs put their efforts to attract investors to invest in their idea at different stages and wealth created through these investments are ultimately shared in society and economy as a whole. Various factors were considered by investors before pumping up their money in any of the businesses promoted by the startups/entrepreneurs. Both financial and non-financial information are elementary and were considered while making any startup investment decision. Existing literatures have contradictory views for the consideration of non-financial information over financial information in investment decision making. Few literature strongly supports the environmental, social and governance information while making startup investment decisions. Investors' desires to know about some of the important qualitative information viz; reputation, leadership, values and ethics, governance, etc. which is equally important for the sustainability of startup along with financial information. This study is an attempt to explore the available literature which reveals various important dimensions of Non-financial information considered during startup investment decisions. The study will be helpful to incubators & accelerators, Angel investors, venture capitalist, government, banks & financial institutions and informal money lenders.

Keywords: *Start up, Non-financial Information, Investment decisions, Angel Investors, Venture Capitalist, ECG analysis*

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OP-101

Indian Startups: Key Challenges

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ABSTRACT

Entrepreneurship is neither a science nor an art. It is a practice” – Peter Drucker. In recent times, startups are Buzz word. Everyone is talking about Startups. There are 150 million startups in the world today with 50 million new startups launching every year. On average, there are 137,000 startups emerging every day ⁽¹⁾. These are huge numbers and India has huge potential to explore in this area. After 2015, the Government of India is promoting Startups through its Startup India Initiative. This initiative intends to build a strong eco-system for nurturing innovation and startups in the country that will lead to sustainable economic growth and creates employment opportunities. As per Grant Thornton Startups Report⁽²⁾ challenges faced by Indian Startups related to Social Issues, Culture and Awareness, Financial Issues, Technology, Sustainability Issues and Regulatory Issues. According to Statista Report ⁽³⁾ Hiring Good Talent, Demand Generation, Profitability, Regulatory Environment, FundRaising and Customer Retention are the biggest challenges faced by Startups in 2021. This paper aims to investigate challenges in detail faced by Indian Startups.

Keywords: *Startup, Entrepreneurship and Challenges*

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OP-102

A paradigm: social entrepreneurship for better India.

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ABSTRACT

In today's era the exponential growth has been perceived for social innovation and entrepreneurship all over the world. The social and economic growth of India will be nurtured through the innovations, promotions and support ease to the social entrepreneurship. India is known as having the highest youth population in the whole world. The youth of India is highly inspired and enthusiastic to leave a mark on the society beyond the profit and believe they can make the impossible possible. India has tried to facilitate a good ecosystem having notable associations, providing financial and legal assistance to support social entrepreneurship and startups in India. Gradually India is taking rigorous actions to build a robust ecosystem of social entrepreneurship, in order to support and develop entrepreneurship our government has developed a separate ministry named "Ministry of Skill Development and Entrepreneurship" moreover the central government of India launched many schemes to reinforce social entrepreneurship in India and aid to developing startups financially. In this research paper the researchers tried to shed light on the successful social entrepreneurship in India, as well as the existing ecosystem for the strengthening and fostering of social entrepreneurship in India. Moreover, they tried to showcase opportunities and challenges. Through this research, researchers explore that social entrepreneurship leads towards a better India. The study would be beneficial for further exploratory research.

Keywords: *Social Entrepreneurship, Ecosystem, Opportunities and Challenges*

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OP-103

Women-led Startups – A Case Study of Women Entrepreneurs in India

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ABSTRACT

Women are considered to be better managers, managing everything exceptionally well right from home to business and much more at personal and professional frontiers. A paradigm shift has been witnessed in India, wherein we can notice women performing remarkably as entrepreneurs. An attempt is made to explore some of the best start-ups in India led by women entrepreneurs and their journey to make it big. This research paper aims to understand the story, challenges, opportunities, steps taken by women entrepreneurs for benefitting their startups and making them unicorns. There is incremental growth in women-led startups in India, the credit goes to Indian women, their perseverance amongst all odds, competitors, e-commerce and much more. However, their journey should be carefully studied to take lessons which can surely help the budding entrepreneurs. This research paper would consider five women entrepreneurs, their start-ups as a case study and reveal significant lessons for upcoming entrepreneurs of all genres. The shortlisted companies and women entrepreneurs for present research are Falguni Nayar (Nykaa), Upasana Taku (Mobikwik), Ghazal Alagh (Mamaearth), Divya Gokulnath (Byju's), Priyanka Gill and Naigga Saggi (The Good Glamm Group), Radhika Agarwal (Shopclues), Sabina Chopra (Yatra Online Inc) and Richa Kar (Zivame).

Keywords: *Women-Led Startups, Women Entrepreneurs, Indian Women, Start-Ups, Unicorns, Case Study*

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OP-104

Students' Views On Online Teaching And Learning In Higher Education During The Coronavirus Pandemic

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Abstract

The study aims to understand how Gujarat region universities were able to disseminate information during the Coronavirus pandemic, when they had to quickly alter the educational system to focus only on online teaching and learning. In this regard, we looked at how students perceived online learning, how well they could process knowledge, and how they used e-learning tools. A semi-structured questionnaire was used to create an online survey. 449 students from two of the biggest universities in Gujarat region provided the data, which was gathered. The study's findings showed that Gujarat's higher education institutions weren't ready for entirely online instruction. As a result, the benefits of online learning noted in previous studies appear to be less significant, whereas drawbacks emerge. The pandemic-related crises alters the hierarchy of issues that can develop in online learning. The most significant problems are technological ones, followed by teachers' lack of technical expertise and their bad online teaching style adaptation. However, students attributed the last rank to their lack of interaction or inadequate contact with teachers. Research implications for academic institutions and researchers are examined in light of these findings.

Keywords: *Higher education; student preferences; online information absorption; online instruction*

OP-107

A Perception of Investors regarding Investment in Life insurance with special reference to Rajkot City

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Abstract

“The insurance sector has a vast potential not only because incomes are increasing, and assets are expanding but also because the volatility in the system is increasing. In a sense, we are living in a riskier world”. In this research I have found that most respondents who are aging 21 to 30 years are more interested in buying life insurance. There are various types of life insurance service providers. Different companies provide different benefits so have a choice to select the best plans for them which gives them good returns. In this study I have taken 100 respondents through an online questionnaire. In this research convenience sampling and judgmental sampling to know the perception of investors regarding investment in life insurance. For analysis I have used chi-square. Majority of respondents age group is 21 to 30 years as well as their family income is between 2 lac to 5 lacs. Most of the respondents want long term investment. The result of this research would help the company to have a better understanding about the consumer’s perception towards life insurance products offered by LIC of India. The study helps the LIC of India to focus the consumer’s preferences and expectations on the product which they offer.

Keywords: - *Perception, Investment, Life Insurance*

OP-108

A Study on Measuring Satisfaction Level of Employees with Existing Retention Practices in Banking Industry in the Context of Saurashtra Region

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ABSTRACT

In any sector employee retention is always a strong base to promote teamwork, collaboration, and employee engagement. Employers can encourage active participation by clarifying company objectives, goals, and employee roles and celebrate victories as a team, whether business goals or personal successes. It uses mentorship programs to help new employees learn the ropes. This can show senior employees their expertise is valued and provide experienced training to new recruits. Retention encourages a healthy work-life balance. Unhappy employees are less productive, and more likely to result in turnover. Employers have to be proactive about asking employees what they need and remain vigilant about looking for the signs of employee burnout. In the banking industry, healthy retention practices are important as all employees have an important and responsible portfolio in their hand and replacement of anyone's responsibility is quite tough and time consuming. Many studies have been conducted to find out the employee retention strategies by the organization towards issues related with human resource. In this particular research the researchers have tried to find out the relationship between employee retention and job satisfaction in the private banking sector in the context of Saurashtra region. Researchers have taken a sample size of 150 employees of five leading banks through a convenient sampling technique to analyze the relationship between satisfaction of employees and retention strategies used by their respective banks.

Keywords: *Employee Retention, Relationship, Job Satisfaction, Banking Sector*

OP-109

A study on analysis of the relationship between Portfolio Turnover, Experience, Expense Ratio, and Tenure of the fund manager with Performance of Thematic Mutual Funds

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ABSTRACT

Thematic funds are equity mutual funds where on the basis of particular theme stocks are selected by fund managers and amount is invested. Unlike Sectoral funds, thematic funds do not invest in just one sector. This study looks at five theme mutual funds' performance from March 2009 to December 2018. We've collected quarterly data over the years for review and research. The returns of the plan were compared to four factors, including portfolio turnover, expense ratio, fund manager tenure, and experience. Mutual fund returns are the dependent variable, and each of these independent variables has a significant impact on it. We discovered some incredibly intriguing results after using the Pearson Correlation Coefficient approach on the data we had gathered. According to the study, of the four variables, portfolio turnover and historical fund performance had a positive correlation with returns whereas fund age and tenure of the fund manager had a negative correlation.

KEYWORDS:- *Mutual funds, performance evaluation, portfolio turnover, expense ratio, experience, tenure of the fund manager*

OP-110

AN EMPIRICAL STUDY ON RETAIL INVESTORS BEHAVIOUR TOWARDS THEMATIC MUTUAL FUND IN SAURASHTRA REGION

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ABSTRACT

The study is about the investor's behavior pattern towards Thematic mutual fund investment with reference to Saurashtra Region. It seems that many investors are preferring whimsical mutual fund investment in order to get high returns and with low level of risk than direct investment in stock market, safety and liquidity with professional management. Day by day the investment pattern of investors keeps on changing and the behavioral pattern of investors is highly influenced by their socio- economic profile and the characteristics of investment. In India now a day's people are preferring mutual fund investment which is becoming popular and has achieved the trust of investors but still it's not like developed countries like the US and the UK, to increase the mutual fund investment up to that level and to create such awareness this research has been done and suggestions are given to mutual fund companies which would be helpful to them for creating more investment in mutual fund. The conclusions will be drawn only with respect to investors of Saurashtra. This study will conclude that several demographic factors like age, marital status, gender, city, level of income, occupations and qualifications etc. have major impact on investment decisions of investors towards mutual funds. There has been remarkable growth noticed in the mutual fund industry in India in the last dickey. Increasing number of Asset based Management Companies which are providing various schemes and different modes of investment to the Investors has encouraged more and more investors.

Keywords: *Assets Management Company, Mutual Fund, Risk, Return*

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OP-111

An Analysis of Corporate Governance of selected Indian Banks

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ABSTRACT

Corporate governance plays a very important role in the development of the economy. It provides a path for leading success in the organization. It is one of the parameters along with Financial Statements that helps investors to judge the performance of the entity. Banks are the base of the economy of any country. It helps people in circulating money in the economy. There is need of strong corporate governance compliance culture in Bank. This paper analyses the status of corporate governance variables of selected Indian Banks during a five years period commencing from FY 2016-17 to FY 2020-21. It reviews Corporate Governance variables like Board Diversity, efficiency of directors through their participation in the Board Meetings, CSR Compliance, Sexual Harassment Complaints, Fraud reported, Penalty and Stricture imposed by regulators, Investor Complaints, Customer Complaints, etc. This paper will help in understanding the compliance culture of Banks specifically in above areas of corporate governance. There is further scope of detailed study in compliance area like CSR Policy of the entity, Preventions of Sexual Harassment policy, Fraud detection and prevention strategy of Bank, etc.

Keywords – *Corporate Governance, Banks, Diversity, Board of Directors, Compliance Culture, CSR Compliance, Fraud, Sexual Harassment, Penalty*

OP-113

**COMPARISON OF SHORT- TERM FINANCING OPTIONS; FACTORING
AS THE BEST ALTERNATIVE**

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ABSTRACT

Studying the relationship between factoring and other short-term financing with reference to India's micro, small, and small businesses The basis for comparison is average interest rate, general repayment period, execution time, commission charge, application of agreement between or among the parties, requirement of securities, whether it creates assets or liabilities, the intended use of the available funds or credit, whether GST Report and CIBIL Score are required for obtaining funds/credit or not, and any restrictions on drawing the funds or credit. With the use of a tabular comparison, the benefits of factoring funds over other forms of short-term borrowing.

Keywords: *Factoring, Trade credit, Bank Overdraft, Cash Credit, Working Capital Loan and MSME.*

OP-114

A Review Of Literature - Effectiveness Of Business Correspondent Model For Financial Inclusion

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ABSTRACT

Financial inclusion is the delivery of financial services at affordable cost to sections of disadvantaged and low-income segments of society. In rural areas more progress is needed to ensure that rural masses have access to financial products and services. Lack of trust between villagers and Business Correspondent and low literacy level of financial products and services are bottlenecks identified. Access to financial products is critical to reducing poverty and to achieve this, there is a need to strengthen the Business Correspondent model. The present paper focuses on the Effectiveness of Business correspondent model for financial inclusion. Business Correspondent model is an essential model of service delivery as it caters to the rural areas where opening a brick and mortar branch is not a profitable venture for banks. This paper will help in understanding effectiveness of Business Correspondent model, financial product and services offered by Business Correspondent, problems faced by Business Correspondent in the process of financial inclusion, benefits derived by end users (clients) regarding the financial services and product provided by Business Correspondent and problems faced by end user (clients) regarding the financial services and product provided by Business Correspondent. It further outlines areas of intervention required to strengthen the Business Correspondent Model.

Keywords: BC Model, Business Correspondents, Financial Access, Financial Inclusion

OP-115

The Dynamic driving forces of Fintech in India: A study of Digital Immigrants Versus Digital Natives

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ABSTRACT

The information technologies continue to escalate, the gap between the digital immigrants and digital natives continues to amplify. Fintech services are booming with inventions & modernization. The magnitude of Fintech is intensifying day by day. Embodiment, a utilization of fintech is helpful to the companies, business owners and consumers in order to manage their monetary maneuvers, progressions, and lives through engaging precise software & etiquettes which are used on computers and smartphones. The main focus of the research is identifying and analyzing the key drivers of fintech in India further the study shows the customer adoption and attitude. The study is based on a primary data collection method with the sample of 120 fintech users who were selected based on Digital Immigrants and Digital Natives. sampling method. The study was carried out in the Saurashtra region. The researcher tried to analyze the level of awareness about various business Fintech products, identify the attitude of the respondents towards fintech products and the level of adoption towards various Fintech products by the respondents. The research was statistically justified with the Chi-square test.

Keywords: *Fintech, awareness, adoption and attitude, Chi-square test*

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OP-116

A Study On Exploring The Gap In The Employability Skills Of The Fresh Graduates

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ABSTRACT

Talent is a prerequisite for any industry, but a Right Talent is required for industry who wants themselves to long- run in the Competitive Market. Education and training play a crucial role in tackling the problems of youth employability and further results into the prosperity of the nation. Employability skills means a set of attributes, skills and knowledge that all labor market participants should possess to ensure they have the capability of being effective in the workplace – to the benefit of themselves, their employer and the wider economy. Employability skills are the essential skills, personal qualities and values that enable an employee to thrive in any workplace. Employability skills include things like good communication, motivation and initiative, leadership, reliability/dependability, following instructions, team work, adaptability, patience Etc. To gain better employability Skills, it is required to have proper training or a proper education system. The main intent of this research is to analyze the employability gap of the fresh graduates and the factors which contribute to it. The study examines the employability level in fresh graduates.

Keywords: *Employability Skills, Talents in Fresh Graduates, Skills Expected from Fresh graduates.*

OP-117

An Exploratory Study to study awareness of different online tools and technologies used in Recruitment and Selection process among Recruiters in IT companies

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Abstract

Recruitment is the method of searching and hiring the best-qualified aspirant from inside or outside of a business for a job opening, in a timely and cost effective manner. The recruitment and selection method includes analyzing the necessities of a work, attracting employees to that job, screening and selecting applicants, hiring, and integrating the new employee to the organization. So far since its opening online recruitment has come a long way and has become the latest inclination in HR processes. Human resource is the most important resource for any organization in any sector. The use of the internet has altered the overall process of Recruitment and Selection. Many organizations have already employed different online tools and technologies in different stages of their recruitment and selection process. The current paper attempts to examine the awareness of different tools and technologies related to recruitment and selection process and their usage in IT companies of Gujarat. Primary data was collected from Recruiters of various IT companies through structured questionnaires and further data was analyzed using various statistical tools to derive meaningful conclusions. The result/outcome of this study will be useful in strategies to effectively implement various online tools and technologies in their recruitment and selection process.

Keywords: Recruitment, Selection, Process, Online Tools, Online Technologies, IT.

OP-119

A Study on Attrition Analysis and Talent Retention strategies for Millennials in IT Industry with special reference to Saurashtra Region

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ABSTRACT

Employees in an organization form the most valuable asset, because of this reason the quality and quantity of an organization is ascertained depending up on its committed employees. Hence, it is pivotal to preserve promising personnel permanently by the organization. Employees in the millennial generation will soon make up the majority of the workforce as baby boomers retire. Nowadays Organizations face a major challenge in retaining the millennial generation. Due to the self-generated attitude, technological immersion and the way they were brought up, the millennials have a unique set of expectations from the workplace. To understand how to lead millennials will depend on how much we must know about their values and assumptions in the workforce. Based on the literature surrounding millennial motivation, retention and leadership preferences, the purpose of this Paper is to design retention strategies specially for retention of young technical talent working in IT Industries of Saurashtra Region.

Keywords: *Millennials, Attrition, Retention , IT Sector, Saurashtra Region.*

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OP-121

The Review of Literature on Job Satisfaction of the Educators in Higher Education Institutions

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Abstract

The premise of this article is to audit the examinations previously done by different analysts on the area of Job Satisfaction of the educators in advanced education establishments. Here the researchers have evaluated various books, research diaries, proposals, and writing accessible on an internet-based stage for this reason. This article centres and talks about various aspects connected with work fulfilment of instructors of advanced education foundations. From different reviews of writing, it has been secured that position fulfilment of employees is an exceptionally vital perspective for every one of the greater instructive foundations and its influences on the execution of workers and nature of training in all the connected advanced education establishments. To formulating this article, more effective we have described work of total 40 research papers into 12 categories i.e. Educators and their gender, Educators and the type of employer, Educators and their job satisfaction factors, Educators and their satisfaction and dissatisfaction, Educators and their academic profession, Educators and their relationship with age, Educators and their correlation between satisfaction commitment and performance, Educators and their relationship with their ethnicity, Educators and their superiors, Educators and their motivator and hygiene factors, Educators and its impact on performance and commitment, Educators and Organizational Culture impact on Job Satisfaction.

Keywords: *Job Satisfaction, Higher Education institutes, Work Performance and Job Satisfaction, Academics, university, comparison, Educators.*

OP-122

Forensic Accounting – Innovative Tool to Detect and Prevent Frauds.

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ABSTRACT

With the increase in the business trade in the country financial scams has been increased and that questioned the credibility of the financial structure. This needs more insight to detect and prevent frauds. From various study it is shown that forensic accounting is more effective to investigate fraud in brief compared to auditing. The data has been collected through questionnaire from the accounting professionals of Gujarat. This studied various objectives of the study and different hypothesis of the study. Chi-Square test was used to check the association of different areas of forensic accounting with reference to different demographic factors. It was found from result that maximum accounting professionals believed that forensic accounting is more effective and more awareness should be created so that financial scams should be identified more accurately and it reduce as well.

Keywords: *Forensic Accounting, financial scams, Chi-Square test, Demographic factors*