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Singh B, Khan Z A, Siddiquee A N, Maheshwari S, Sharma S K (2016) "Effect of flux composition on the percentage elongation and tensile strength of welds in submerged arc welding". Archive of Mechanical Engineering. Vol. 1, 337-354.

Abstract

This experimental study reveals the effects of CaF_2 , FeMn and NiO additions to the base fluxes on tensile strength and percentage elongation of the weld metal. The Aim of this study is to develop suitable flux for mild steel for high tensile strength, Impact strength and ductility. Bead on plate welds were made using submerged arc Welding process. Mathematical model for percentage elongation and UTS of mild Steel welds were made. The elements transfer to the welds have been correlated with The above mechanical performance characteristics. The effect of oxygen content on Weld elongation and UTS also has been deduced. This study shows that CaF_2 and NiO are the significant factors for tensile strength while FeMn is not significant for Tensile strength. However, for elongation besides CaF_2 , the interaction of CaF_2 and FeMn was also found significant. The effects of basicity index of the flux and carbon Equivalent of the welds on tensile strength and percentage elongation of the welds have also been evaluated.

Niharika, Agrawal B P, Khan I A, Khan Z A (2016) "Effects of cutting parameters on quality of surface produced by machining of titanium alloy and their optimization." Archive of Mechanical Engineering. Vol 1, pp. 531-548.

Abstract

Titanium alloy (Ti-6Al-4V) has been extensively used in aircraft turbine-engine Components, aircraft

structural components, aerospace fasteners, high performance automotive parts, marine applications, medical devices and sports equipment. However, Wide-spread use of this alloy has limits because of difficulty to machine it. One of the major difficulties found during machining is development of poor quality of Surface in the form of higher surface roughness. The present investigation has been Concentrated on studying the effects of cutting parameters of cutting speed, feed rate And depth of cut on surface roughness of the product during turning of titanium alloy. Box-Behnken experimental design was used to collect data for surface roughness. ANOVA was used to determine the significance of the cutting parameters. The model Equation is also formulated to predict surface roughness. Optimal values of cutting Parameters were determined through response surface methodology. A 100% desirability Level in the turning process for economy was indicated by the optimized model. Also, the predicted values that were obtained through regression equation were found to be in close agreement to the experimental values.

Wahid M A, Siddiquee A N, Khan Z A, Asjad M (2016) "Friction stir welds of Al alloy-Cu: an investigation on effect of plunge depth". Archive of Mechanical Engineering. Vol 1, pp. 619-634.

Abstract

In the present study, butt joints of aluminum (Al) 8011-H18 and pure copper (Cu) Were produced by friction stir welding (FSW) and the effect of plunge depth on surface Morphology, microstructure and mechanical properties were investigated. The welds Were produced by varying the plunge depth in a range from 0.1 mm to 0.25 mm. The Defect-free

joints were obtained when the Cu plate was fixed at the advancing side. It was found that less plunging depth gives better tensile properties compare to higher Plunging depth because at higher plunging depth local thinning occurs at the welded Region. Good tensile properties were achieved at plunge depth of 0.2 mm and the Tensile strength was found to be higher than the strength of the Al (weaker of the two Base metals). Microstructure study revealed that the metal close to copper side in the Nugget Zone (NZ) possessed lamellar alternating structure. However, mixed structure Of Cu and Al existed in the aluminum side of NZ. Higher microhardness values were witnessed at the joint interfaces resulting from plastic deformation and the presence of intermetallics.

Muzakkir S M (2016) “ Methodology for the Control of Wear of Journal Bearing Operating in Mixed Lubrication Regime”. International Journal of Applied Engineering Research. Vol. 11, pp. 665-668.

Abstract

The journal bearings subjected to heavy load and slow speed operates in mixed lubrication regime causing contact between the interacting surfaces and resulting in wear. The complexity of wear behavior and lack of unifying theory/model make wear control very challenging. In the present research work, a methodology is outlined for the minimization of the wear of journal bearing operating in mixed lubrication regime. The main feature of the design methodology is the consideration all influencing factors which have been identified and validated by conducting theoretical and experimental studies. This design methodology is recommended as an aid to the designer in controlling wear of journal bearing operating in mixed lubrication conditions.

Almadhoni K, Khan S (2016) “A Review - An Optimization of Macroencapsulated Paraffin used in Solar Latent Heat Storage Unit”. International Journal of Engineering Research & Technology. Vol. 5, pp. 729-736.

Abstract

Solar thermal is an alternative energy Conversion process. There is a wide application of solar Thermal

energy in our domestic life and industrial area. The Design and development of latent heat energy storage unit, as Part of a complete latent heat storage system to provide an Optimum tuning between heat demand and heat supply, is of Vital importance, and one of the greatest efforts in thermal Solar energy research. The storage of latent heat energy using Phase change materials (PCM's) is an effective way of storing Thermal energy due to their high energy storage density and The isothermal nature of the storage process. Paraffin is one of Various PCM's which is used to absorb heat from the heat Transfer fluid (HTF) during the charging process and release It again during the discharge process. The conduction and Convection criterion of heat transfer enable the paraffin to Store this heat as latent heat. Macro-encapsulation comprises the inclusion of PCM's such As paraffin in some form of package such as tubes, pouches, Spheres, panels or other receptacle. These containers can Serve directly as heat exchangers or they can be incorporated In building products. An inserting of metal foam can improve the equivalent Thermal conductivity of a foam-paraffin wax composite and Reduced the time required to melt also enhanced the Temperature gradients in TESS while melting and Solidification. An addition of metal foam to both PCM (paraffin) and HTF sides can lead to increase heat transfer of HTF during cooling as it is during the heating. By dispersion Of metal powders and ceramic particles in macro encapsulated Paraffin can be improved the thermal Conductivity and thus can overcome the poor rate of heat Transfer in the thermal energy storage system, also the Performance of paraffin like charging and discharging time And the melting process are improved. By an optimized Materials selection and designing of macro-capsules (tubes, Spheres, balls, etc.) Can be improved the heat conductivity during melting and solidification processes, the inner surface between paraffin and HTF and thus the efficiency of the Storage unit.

Rizvi S S H, Hasan A (2016) “A new method for distinct inversions and Isomorphism detection in kinematic chains”. Int. J. Mechanisms and Robotic Systems. Vol. 3, pp. 48-59.

Abstract

Mechanisms from a kinematic chain based on a unique matrix representation of The links of a kinematic chain termed as link identity matrix (LI) is

presented And a new invariant link signature (LS) is introduced, which is the sum of Absolute value of the characteristics polynomial coefficient of the LI matrix for The representation of a distinct link. The similar values of the LS represent Equivalent links further the LS values of a chain are used to determine the Isomorphism among the kinematic chains and also assigns a signature to every Chain known as chain signature (CS) obtained by summing all LS values of that Chain and it is a unique identity assigned to every non-isomorphic chain.

Haleem A, Khan A, Javaid M (2016) "Design and Development of Smart Landline Using 3D Printing Technique". International Journal of Advance Research and Innovation. Vol. 4, pp. 438-447.

Abstract

In today's workplace be it office or home, telephones are indispensable entity, since telecommunication is a crucial and growing part of any work. However, using a traditional telephone handset often involves strenuous movement and unnatural postures such as cradling the handset between neck and shoulder, and having to stretch to reach for things. Research in office workplace ergonomics clearly indicates that use of a classic telephone handset by office workers is a major source of work-related neck and back pain. Spending prolonged periods of time on the telephone can often lead to musculoskeletal disorder like chronic neck, shoulder and upper back pain disorders. While these may seem as unimportant issues but in the long run they can potentially permanent damage to the tendons, muscles, tissues, nerves and supporting structure. Ergonomically poorly designed phone contributes to musculoskeletal symptoms. The paper at hand focuses on regeneration or modification of hand held equipment (in this case: a landline phone's receiver) using Reverse Engineering. The regeneration is made taking into consideration the Ergonomic factors such as grip comfort and wrist strain due to prolonged usage. The modifications were done so as to incorporate major technological changes, such as converting the obsolete landline phone into a smart landline phone. After making all changes, the new product was manufactured using 3D printing machine projet460 installed at JMI, New Delhi. The prototype was then compared to the original model on dimensional accuracy, grip comfort and wrist strain

and its advantages, disadvantages and limitations were noted.

Uzair B, Munir M, Tassadaq S, Khan S, Khan B A (2016) "Bacteria-mediated degradation of petroleum hydrocarbon contaminants: An overview". Latin American Applied Research. Vol. 46, pp. 139-146.

Abstract

One of the major environmental problems Is hydrocarbon pollution. Hydrocarbons are Mostly the result of petroleum based activities. Anthropogenic Activities, natural seepage and accidental Spills are of particular interest in the environmental Quality. The health effects of these chemicals are widely known. In the hour of alarming pollution By these hydrocarbons, a newer, cheaper, and Safer technology is needed for cleanup, moving beyond The conventional mechanical and chemical Methods, which are not only expensive but ineffective Also. Bioremediation is a promising technology, functioning on complete mineralization of contaminants By the diverse metabolic processes owned by Microorganisms. Many indigenous and genetically modified bacteria are capable of crude oil degradation. This paper presents an updated overview of petroleum Hydrocarbon degradation by bacteria.

Khan M S, Mallick Z, Asjad M (2016) "Comparison of Vibrating and Non-vibrating Manufacturing unit worker's Using semg signals on CTS". National Conference on Mechanical Engineering – Ideas, Innovations & Initiatives.

Abstract

Carpal tunnel syndrome (CTS) is the most commonly studied entrapment neuropathy caused by Compression of the median nerve as it passes through the carpal tunnel beneath the flexor Retinaculum. In this paper, the health surveillance has been conducted on 69 vibrating and 69 nonvibrating Manual manufacturing unit works. A study of the signals of the Abductor Pollicis Brevis (APB), muscle with different conditions such as rest position and different movements of hand has been carried out using surface-electromyography (semg). Experiments were performed on BIOPAC MP-45 instrument and One-way ANOVA analysis using semg signals obtained

were Analyzed for severity of the problem. Results reveal that non-vibrating unit workers have better Semg signal than vibrating manufacturing unit workers and are less prone to carpal tunnel Syndrome.

Iqbal F, Rammohan R, Patel H A, Jha S (2016) "Design and Development of Automated Workpiece Cleaning System for Ball End Magneto-rheological Finishing Process". International Conference on Advances in Materials & Manufacturing.

Abstract

The nano level surface finish requirement on components with complex three dimensional free Form geometries is an important requirement of today's advanced engineering industries. Ball end Magneto Rheological finishing (BEMRF) process is an innovative finishing process to achieve nano level surface finish in free form three dimensional geometrical components. It has been observed that some amount of MR Fluid remains at workpiece surface after the finishing process which becomes a hindrance for automatic Measurement of surface roughness. A necessity for an automatic cleaning system arises for measurement of Surface roughness for feedback control of the BEMRF process. In the present work a novel method has been developed which cleans the workpiece surface by use of kerosene. In this work the whole cleaning system is automated by use of electro pneumatic control system. Various tests were conducted for cleaning with air Spray, water jets and surfactant solutions. It was found that kerosene when sprayed at sufficient pressure Removes the residual MR fluid without affecting the surface roughness. Thus an efficient automated Cleaning system is developed which aids the feedback control system of BEMRF system.

Gautam S, Ahmad S, Ahmad K, Haleem A (2016) "Development of water consumption benchmark for five star hotels using Delphi's technique". Water Utility Journal, vol. 13, pp. 47-56.

Abstract

Fresh water demand and availability has direct impact on environment and society. Five star hotels are intensive water Guzzlers of fresh water for their

luxurious services. This paper presents a detailed study for the development of Benchmark for fresh water consumption by using Delphi technique. A comprehensive questionnaire was developed to Gather the opinion from a panel of 36 experts including stakeholders, academicians, policy makers and ngos on the concerned issues. The collected responses were analyzed by an application of Delphi technique to develop a Benchmark for fresh water consumption in five star hotels. After two iterations the resulted benchmark emerged as 400 litres/guest-night. This will help policy makers and other stockholders in developing sustainable practices in Hospitality sector.

Rathee S, Maheshwari S, Siddique A N, Shrivastava M (2016) "Effect of tool plunge depth on reinforcement particles distribution in Q4 surface composite fabrication via friction stir processing". Defence Technology.

Abstract

Aluminium matrix surface composites are gaining alluring role especially in aerospace, defence, and Marine industries. Friction stir processing (FSP) is a promising novel solid state technique for surface Composites fabrication. In this study, AA6061/sic surface composites were fabricated and the effect of Tool plunge depth on pattern of reinforcement particles dispersion in metal matrix was investigated. Six varying plunge depths were chosen at constant levels of shoulder diameter and tool tilt angle to observe the exclusive effect of plunge variation. Process parameters chosen for the experimentation are speed of Rotation, travel speed and tool tilt angle which were taken as 1400 rpm, 40 mm/min, and 2.5 respectively. Macro and the microstructural study were performed using stereo zoom and optical Microscope respectively. Results reflected that lower plunge depth levels lead to insufficient heat generation And cavity formation towards the stir zone center. On the other hand, higher levels of plunge Depth result in ejection of reinforcement particles and even sticking of material to tool shoulder. Thus, an Optimal plunge depth is needed in developing defect free surface composites.

Kumar S, Suhan M, Haleem A (2016) "Evaluation of factors important to enhance Productivity". Cogent Engineering . Vol. 3.

Abstract

Productivity as a measure for output is important to industry and academia. In this research, factors to enhance productivity have been identified from the literature by reviewing various international and national sources to explore this evergreen field of Research that is "productivity," which has always been an increasingly interesting area Of research for researchers over decades or perhaps over centuries. In total, 15 numbers Of factors have been identified to enhance productivity. Analytic hierarchy process approach has been appropriately chosen to rank these factors because of its simplicity and Effectiveness. The tool has been used by taking perception of experts from the Indian Manufacturing industry. Positive attitude and involvement of management, proactive Employees, and good working conditions have been ranked as top three factors as per the experts' opinion. The ranking of factors to enhance productivity, categorization of the factors into four perspectives, and hierarchy of perspective and action plan as a final Outcome of the paper may help academia and operations managers toward effective Management of "operations and production activities of firms/supply chains."

Riaz H, Saleem N, Ahmad M, Mehmood Y, Raz S A, Khan S, Anwar R, Kamran S H (2016) "Hepatoprotective Effect of Crocus sativus on Amiodarone-Induced Liver Toxicity". British Journal of Pharmaceutical Research. Vol. 12, pp. 1-11.

Abstract

Aims: The purpose of this study was to investigate the hepatoprotective effect of aqueous and Ethanolic extract of Crocus sativus in amiodarone-induced hepatotoxicity in rabbits.

Methods: Study was divided into 2 major groups; acute group and prophylactic group and Randomized control trial was used. Acute group was further divided into five sub groups (n=5) i.e Control group (group I), amiodarone group (group II), saffron group (group III), amiodarone + Aqueous saffron group (group IV), and amiodarone + ethanolic saffron group (group V). Hepatotoxicity was induced by

intraperitoneal administration of 200 mg/kg amiodarone solution Thrice a day in group II, IV and V. Aqueous extract of saffron (100 mg/kg) was administered Intraperitoneally once a day in group III and group IV. Ethanolic extract of saffron (100 mg/kg) was Given to group V. However saffron extracts were administered half hour before the amiodarone first Dose in both the groups. Aqueous extract of saffron (100 mg/kg) was given to rabbits for seven days as prophylactic therapy and then 200 mg/kg amiodarone solution was injected thrice a day in Order to observe the hepatoprotective effect of Crocus sativus. After the experimental period, blood Samples were collected for the evaluation of biochemical parameters. Histopathological Examination was performed also.

Results: Study showed that both aqueous and ethanolic extract of Crocus sativus significantly Decreased serum ALT and AST enzyme activities and significant results were obtained when Compared to the amiodarone group.

Conclusion: Based on the results it was concluded that addition of Crocus sativus to the treatment Protocol of patients maintained on amiodarone for long time period can be recommended to Prevent the liver injury.

Khan N Z, Siddiquee A N, Khan Z A (2016) "Investigation on the effect of tool pin profile on The joint quality of Friction Stir Welded Aerospace grade Aluminium Alloy".

Abstract

Present paper explores the effect of the various tool pin profiles viz. Cylindrical, threaded cylindrical, threaded cam and threaded triflute on the Joint quality of Friction stir welded aerospace grade aluminium alloy (AA7475). 2.5 mm thick plates of AA7475-T761 are welded using Friction stir welding (FSW) and subsequently, the welds are characterized using optical Microscopy (OM) and mechanical testing. Microstructural examinations reveal That the tools with threaded cylindrical, threaded cam, and threaded triflute pin Profile lead to the formation of tunneling defect and joint line remnant (JLR) in The welds probably due to imbalance in material movement caused by Insufficient plunge and sticking of base material around and on the bottom of The pin. Further, it is also found that cylindrical pin profile

results in the Maximum tensile strength (291.8 Mpa) and threaded cam pin profile gives Minimum tensile strength (247.5 Mpa). Low tensile strength is observed due To sticking of 0.1 mm thick layer of aluminium on the bottom of the pin leading To reduction in the active plunge causing defects formation and deteriorating The joint quality.

Mannan B, Khurana S, Haleem A (2016) "Knowledge management as an enabler of innovation management in indian MSMES". International conference and exhibition on building utilities. Pp. 357-364.

Abstract

In the most recent decade, knowledge management (KM) has turned into a competitive Resource and get acknowledgement and enthusiasm that keeps on growing day by day. It has become one of the regular approaches of large business organizations and now can be seen as a vital strategy for Micro, small and medium enterprises (MSMES) too. Today's propelled economies only flourish with cutting-edge knowledge, which drives Innovation and research in aggressive situations. Primarily competing on an ability to innovate in MSMES, knowledge intensive organizations always look to strengthen Sustainable connections between methods of innovation and different forms of Knowledge. In this competitive environment, the capability of owner/ decision makers to oversee knowledge resources proactively is vital to accomplish innovation capacity and innovation Performance. In the predominant unverifiable and continually changing environment of MSMES, learning from past slip-ups and avoiding from rehashing the wheel is crucial for survival and it is only possible when MSMES Approaches to make the best utilization of its knowledge. In this paper, we endeavor to perform a SWOT analysis on Indian MSMES and provide basic model of knowledge Management as an enabler of Innovation management (IM) in Indian MSMES that Helps decision maker to change MSMES into more knowledge-based innovative MSMES.

Mannan B, Khurana S, Haleem A (2016) "Modeling of critical factors for integrating Sustainability with innovation for Indian small- and Medium-scale manufacturing enterprises: An ISM And MICMAC approach". Cogent Business & Management. Vol. 3

Abstract

The growth of any country depends upon the existence of small- and Medium-scale enterprises (SMES). The greater the number of SMES present in any Country, the economy of the country increases in the same proportion. This paper uses the qualitative research technique to study the critical factors which affect the Integration of sustainability with innovation taking into account Indian manufacturing SMES. An ISM approach is applied to establish the interrelationship between the various critical factors. And with the help of Fuzzy Micmac technique, driver dependence Power diagraph is created. From our analysis, it has been found that "government Regulation" has the highest dominating power which helps in successful Execution of integrating sustainability with innovation. Variables "employee nature" And "working culture" have the highest dependence power. The success of these Variables depends on the success of the variables below them. Finally, the limitations of using the above techniques are discussed and then the suggestions are made for the further research.

Ahmad S, Kroon D, Rigby S, Khan S(2016) "Paleogene Nummulitid biostratigraphy of the Kohat and Potwar Basins in north-western Pakistan with implications for the timing of the closure of eastern Tethys and uplift of the western Himalayas" Stratigraphy. Vol. 13.

Abstract

The Paleogene larger benthic foraminifera (LBF) of the Kohat and Potwar basins, Pakistan are very useful for dating shallow marine sediments and documenting cessation of marine sedimentation that provides constraint on the initial age of India-Asia collision. We record important Paleogene LBF species in multiple sections of the two basins. We performed biometric analysis of nummulitid species useful for taxonomic purposes. We recognize six Larger Benthic Foraminiferal Zones (BFZ Zones 1-6) in the Kohat Basin. The first three (BFZ Zones 1-3) also occur in the Potwar Basin and the adjoining Trans Indus

Ranges (TIR). The correlation of BFZ 1-6 Zones with previous local and regional LBF biostratigraphic schemes in the Eastern Tethys (Pakistan-India) and Western Tethys (European Basins) resulted in recognition of useful index taxa for developing a regional stratigraphic framework during Paleogene. The last occurrence (LO) of *Miscellanea miscellana* in the BFZ 1 Zone, and the first occurrence (FO) of *Assilina adantocaina* in the BFZ 2 Zone mark the late Paleocene (Late Thanetian) - early Eocene (Lower Illeridian 1) boundary. The co-occurrence of *A. pustulosa*, *Al. vredenburgi*, *Al. globula* and *Al. pasticillata* in the BFZ 2 Zone characterizes lower Eocene (Lower Illeridian 1-Middle Illeridian 1) sediments. The synchronous FO of *N. atacicus* and *N. globulus* is an excellent global biostratigraphic marker of the early Eocene (Middle Illeridian 1- Middle Illeridian 2) boundary and the FO of *O. complanatus* is a useful biostratigraphic marker of Lower Cuisian 2-Middle Cuisian boundary in the BFZ 3 Zone. Mammalian bones found at the base of Koldana Formation in the Kohat Basin represent early Eocene (Upper Cuisian), which is in agreement with the LBF biostratigraphy of the underlying Middle Cuisian strata. The FO of *A. exponensis* in the BFZ 4 Zone record middle Eocene (Middle Lutetian 1) sediments while the FO of *N. beaumonti* in the BFZ 5 Zone marks the middle Lutetian 1-middle Lutetian 2 boundary. The FO of *A. cancellata* in the BFZ 6 Zone marks Middle Lutetian 2-Upper Lutetian boundary.

Singh D, Mohammas A, Khan R A (2016) "Resistance distance method for determination of isomorphism, stiffness and best input link among planar Kinematic chains". Journal of mechanical science and technology. Vol. 30. Pp. 221-227.

Abstract

The detection of isomorphism among kinematic chains and their derived mechanisms has been a hot area of research for the last several years. In this paper, a quantitative method (Resistance distance method) is proposed in order to compare all the distinct chains with specified number of links and degree of freedom, for rigidity of the chain and to select the best input link to introduce motion and to test isomorphism thoroughly and uniquely. In this method, the kinematic chains are represented in the form of resistance graph

and from that graph a Laplacian matrix is generated which is further transformed into a resistance distance matrix.

Hussain S, Sharif M, Khan S, Wahid F, Nihar H, Ahmad W, Khan I, Haider N, Yaseen T (2016) "Vermicompost and Mycorrhiza Effect on Yield and Phosphorus Uptake of Wheat Crop". Sarhad Journal of Agriculture. Vol. 32, pp. 372-381.

Abstract

A pot experiment was conducted to assess the effect of mycorrhiza inoculation with vermicompost on yield and P uptake of wheat. The experiment was carried out in Completely Randomized Design replicated four times during season 2014-15. Phosphorus (P) was applied at recommended level of 90 kg ha⁻¹. Vermicompost was used as a source of P on the basis of its P concentration. The recommended dose of N @120 kg ha⁻¹ was applied in the form of vermicompost and urea, while K was applied in the form of sulphate of potash. Spores of mycorrhiza were isolated from fresh growing crop of berseem at the University research farm and used as inoculums in this experiment. Results showed the maximum grain yield of 15.09 and 14.7 g pot⁻¹, highest total dry matter yield of 36.3 g and 36 g pot⁻¹, maximum roots dry weight of 5.6 and 5.41g pot⁻¹, hundred grains weight of 4.64 g and 4.6 g were observed for the mycorrhiza inoculation with half and full dose of vermicompost treatments, respectively. Highest straw yield of 21.5 g and 21.2 g pot⁻¹, maximum plant N uptake of 0.71 g and 0.68 g pot⁻¹ were obtained by mycorrhiza inoculated with half and full doses of vermicompost treatments. Plants P uptake of 0.09 g and 0.08 g pot⁻¹ were found in mycorrhizal inoculation along with full and half doses of vermicompost, respectively. Maximum concentration of Zn (0.7 mg kg⁻¹), Cu (0.164 mg kg⁻¹), Fe (1.0 mg kg⁻¹) and Mn (1.63 mg kg⁻¹) were noted in mycorrhiza inoculated treatments with recommended dose of vermicompost and these were statistically at par with treatments receiving mycorrhizal inoculation along with half and full dose of vermicompost without inoculation. Maximum spores density of 58 and 46 were recorded by mycorrhiza inoculation with half and full level of vermicompost, while root colonization of 57.8% and 46% were maximum by the treatment of mycorrhiza inoculation with vermicompost. Results suggested that inoculation of

mycorrhiza with vermicompost at half as well as full dose has potential to improve yield, yield component and nutrients uptake of wheat under prevailing soil and environmental conditions.

Ahmad M, Karim M N (2016) "Thermodynamic Analysis of Kalina Cycle". *International Journal of Science and Research*. Vol. 6, pp. 2244-2249.

Abstract

Efficient utilization of the low temperature heat is a challenge. Kalina cycle was proposed to exploit the opportunity of extracting this low grade energy as the conventional Rankine is very inefficient for low temperature applications. In this paper the energy analysis of the Kalina cycle is done. The maximum temperature for the cycle is varied between range 100-200°C and the sink temperature for the cycle is assumed as 27°C at the exit of the condenser. The model selected for this analysis is KCS-11 owing to its suitability for low temperature application. The pressure is varied between 20-50 bar in steps of 5 bar. The mass fraction of ammonia for composition of ammonia-water mixture is taken 70%. The efficiency of the Kalina cycle is calculated and tabulated for the heat input of 2 MW to the cycle. The results show

that the efficiency of the cycle is solely function of the separator vapour pressure which is a function of the temperature of the HRVG and has no effect of the HRVG pressure.

Bukhari S, Abdullah S, Khan S, Husyin N (2016) "Transforming community-based screening of total hemoglobin using non-invasive device". *IEEE Conference on Technologies for Sustainability*. DOI: 10.1109/SusTech.2016.7897163

Abstract

According to current research, approximately one-third of the world's population is clinically anaemic. Timely screening and treatment can restore personal health and raise health standards nationally and internationally. This study describes the development and testing of non-invasive haemoglobin detection device, designed by Tech4Life Enterprises. The core concept behind the development of the device is to integrate technological and social aspects involved in monitoring anaemia in communities so as to improve their quality of life, thus promoting a sustainable healthy life style.

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