



Key Indicator -3.3

Research Publication and Awards

Sub criteria -3.3.2 Number of books and chapters in edited volumes/books published and papers in national/ international conference-proceedings per teacher during last five years

INDEX

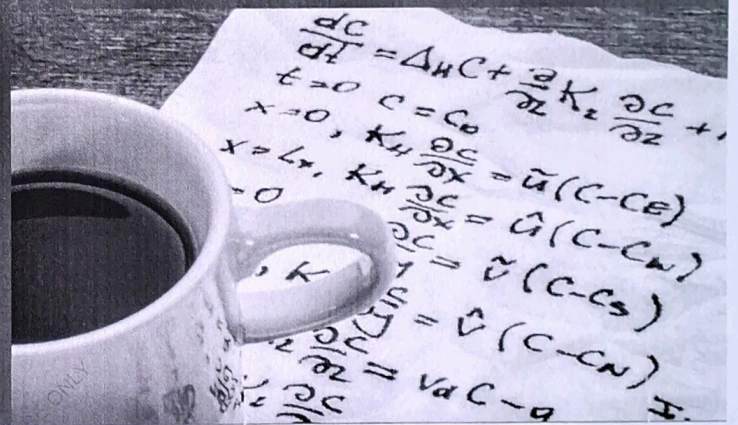
Sr. No.	Title of the book/chapters published/Title of the paper	Academic Year	Number Of Books And Chapters/ Papers	ISBN/ISSN number of the proceeding
1.	" Name of Book : Differential Equation Ordinary Differential Equations of First Order and First Degree" (Author- Mr.Gaikwad sudhir s.)	2022-23	2	ISBN-978-620-6-15175-3
2.	" Name of Book : Differential Equation Ordinary Differential Equations of First Order and First Degree" (Author- Mr. Sawant Laxman s.)			
3.	A feasibility study towards the application of municipal waste pyrolysis oil in bituminous pavement	2020-21	2	ISSN-978-3-030-79637-2
4.	"Name of Book : URBAN SOLID WASTE MANAGMENT Name of Chapter : "Effective Use Of Bio-Oil Obtained By Pyrolysis Of Municipal Solid Waste, In Flexible Pavement"			ISSN-978-81-950572-4-5
5.	Energy Monitoring System in Smart Grid:	2019-20	2	ISSN-978-1-7281-4141-1
6.	Sensorless Operation of PMBLDC Motor Drive Using Neural Network Controller			LNEE,volume 626
7.	An attempt to use municipal waste in Road construction	2018-19	2	-
8.	An Islanding Detection Method for Inverter-based Distributed Generators based on the Reactive Power Disturbance			ISSN 2348-117X

Sr.No-1 and 2

In this mathematics course, we will explore temperature, spring systems, circuits, population growth, orthogonal trajectory and biological cell motion to illustrate how differential equations can be used to model nearly everything in the world around us. We will develop the mathematical tools needed to solve differential equations.

Differential equation first came into existence with the invention of calculus by Newton and Leibniz in 1671. After that Jacobi Bernoulli proposed the Bernoulli differential equation in 1695. This is an Ordinary differential equation of the form $y' + P(x)y = Q(x)y^n$.

Historically, the problem of vibrating string such as that of a musical instrument was studied by Jean Le Rond d'Alembert, Leonhard Euler, Daniel Bernoulli and Joseph-Louis Lagrange.



Laxman S. Sawant
Sudhir S. Gaikwad

Differential Equation

Ordinary Differential Equations of First Order and First Degree



I have good knowledge of Mathematics as well as DevOps tools and learning ability in designing, building, cloud migration, deploying, and maintaining business applications and critical infrastructure inside the AWS Cloud.



LAP LAMBERT
Academic Publishing

Laxman S. Sawant
Sudhir S. Gaikwad

Differential Equation

Ordinary Differential Equations of First Order
and First Degree

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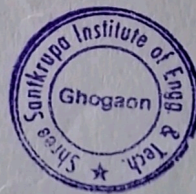
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Sr.No-03

A Feasibility Study Towards the Application of Municipal Waste Pyrolysis Oil in Bituminous Pavement

Swanand B. Kulkarni^(✉) and Mahadeo S. Ranadive

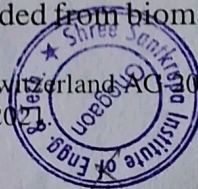
Department of Civil Engineering, College of Engineering, Pune, MS, India

Abstract. In the search of modified bitumen in bituminous pavement, the feasibility of mixing pyrolysis oil of municipal solid waste into bitumen was examined to find an efficient, cost-effective and environmental friendly substitute. In case of addition of pyro-oil of low-density polyethylene municipal plastic waste by 5%, 7.5% and 10% into viscosity grade 30 (VG30) bitumen, considerable deviations in basic properties of bitumen were found. The physical and chemical characteristics of pyro-oil were determined and compared with the characteristics of bitumen and fuel oil. The average gross calorific value (GCV) of pyro-oil was found to be 10745 kcal/kg, which is very close to GCV of diesel 10800 kcal/kg. The other values, too, were within the range of the properties of diesel. Hence pyro-oil is a better substitute for diesel. The chemical characteristics such as Fourier-transform infrared spectra (FTIR) of pyro-oil were found to be similar to those of bitumen, which proves that blending of pyro-oil into bitumen is feasible. The cutback bitumen is being manufactured by mixing fuel in bitumen of penetration grade 80–100 and is used as tack coat in bituminous pavement. Therefore, pyro-oil can be considered as a substitute for diesel in cutback bitumen to prepare modified cutback bitumen.

Keywords: Municipal plastic waste · Bituminous pavement · Calorific value · Carbon black · Modified cutback bitumen · Pyro-oil

1 Introduction

Bitumen is a petroleum-based material and used as a binder in flexible pavement, but it has a severe adverse impact on the environment and living beings. The stock of petroleum is limited, petroleum prices are continuously increasing. Therefore, researchers are trying to find efficient and cost-effective modified bitumen. Over the years, bio-renewable natural resources including sugars, triglyceride oils, and proteins have been tested as alternative sources for producing adhesives and binders (Airey and Musarrat 2008). Municipal solid waste (MSW) is one of the major environmental problems of Indian cities. Improper management of MSW causes hazards to inhabitants. Various studies reveal that about 90% of MSW is disposed off unscientifically in open dumps and landfills, creating problems to public health and the environment (Mufeed et al. 2008). As per earlier researches, it is noticed that bio-oil extruded from biomass i.e. from switch



Sr.No-4

URBAN SOLID WASTE MANAGEMENT

Issues and Challenges of Sustainability

Edited By

Sudipto Ghosh
Amit Kumar Bhandari

Published by

Palmview Publishing
2A, Tower D, Belgravia Central Park Resorts
Sector 48, Gurgaon - 122018, Haryana
Email: info@palmviewpublishing.com
Website: www.palmviewpublishing.com

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First Edition, June 2021
Revised Edition, November, 2021

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Cover design created by Goutam Paul

ISBN: 978-81-960672-4-5

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Energy Monitoring System in Electric Grids:

The Role of Advanced Intelligent and IOT for Future Electric Grid

Manisha Prakash Kokare

Department of Electrical engineering
Government College of Engineering,
Karad, India
manishakokare97@gmail.com

Dr. S. H. Pawar

Department of Electrical Engineering,
Government College of Engineering
Karad, India
pawarsuryakant@yahoo.com

Abstract—The existing energy meters have many drawbacks like two way communication, real time monitoring, energy tampered, etc. to cope up with these disadvantages this project means to monitor energy consumption at domestic level. This helps in reducing energy consumptions and monitors the units consumed. The aim is to make the electrical appliances intelligent and provide comfort to consumer and to reduce power consumption in web applications. This paper presents the power meter for monitoring energy flow in smart grids by using advanced sensing technique and IOT. These devices are able to monitor energy consumption consumers in real time. Current sensor measures the current flowing through the devices then controller performs necessary calculations on data and put that data on the internet. Use of smart meter has changed the way to exchange energy in the grid. Now it is possible to change the direction of energy flow according to needs. This meter helps to monitor electricity among the different nodes in efficient way.

Keywords—Smart grid, Sensing system, IOT, Controller, Energy meter

I. INTRODUCTION

Earlier the power grids functions only as the medium to transmit power from one place to other place. Since the smart grid research, we will easily improved energy transfer and data transfer reports to monitor new things and go directly to our network of yesteryear are in place to improve with the use of power management in turn consumers about self-awareness creation to customers. Each time the power grid system availability, the system is connected to the micro-economy of the network to improve the working and improve power system. The intelligent network is the first step in our old network.

In order to monitor real-time energy according to demand, sensors and transducers have an important role in the future power grid. In real time, automatic power measurement and the decision to take the opportunity to offer new intelligent

search system for data processing. Intelligent electricity meters, energy suppliers and energy use is available in both energy consumption data is very useful detail. Greed is the time for the increasingly complex interconnected system. Electricity demand is high the current situation, it is necessary to demand the creation of more sustainable energy from the incoming power source. Today, we are seeing a complete change in the public power system. For example. Distributed energy generation plants in the presence of bidirectional flow was. Based on domestic demand, power is shared between different nodes. It is to change the direction of energy flow according to demand. As a general rule, Lack of energy is the energy that must be made with a large amount of money from microgrids. However, as the production of energy from intermittent energy sources such as many incoming components, the general criteria for the results. Moreover, the quality of the signal voltage and current limits available energy, guidance. Consequently, the flow of energy management is a very difficult task today. Currently, it is not given adequate attention to aspects of the network. As a result, end users suffered sometimes having a low energy level. The main result is given by domestic users. So, today, I interrupt the power supply and high-quality non-proliferation and energy are the two basic and essential need that must be guaranteed in the distribution of power. This new concept in the field of working researchers a new and significant challenges entitles. Many issues need to be addressed in the development of efficient and intelligent new system is introduced. Dynamically change its structure, The power grid is necessary to check up a radical amendment. The current situation is mono energy flow, to end users of directional flows from the power plant. This new situation is changing smart grid and energy flow is bidirectional, so you need a new system. This requirement is met intelligent electricity meters. This new concept in the field of working researchers a new and significant challenges entitles. Many issues need to be addressed in the development of efficient and intelligent new system is introduced. Dynamically change its configuration, the power grid is necessary to check up a radical repair. The current situation is the director of the energy flow through the plant produces mono energy users. This new situation is



Sr.No-06

H. V. Suresh
T. Sankaranarayanan
R. M. Vinod Kumar
L. C. Chandrasekhar Murugesan (Eds.)

Innovations in Electrical and Electronics Engineering

Proceedings of the 4th ICIEE 2019

 Springer

Sensorless Operation of PMBLDC Motor Drive Using Neural Network Controller



Poonam M. Yadav and S. Y. Gadgune

Abstract In this paper, a position sensorless permanent magnet brushless direct current (PMBLDC) motor drive is presented. For acknowledgment of sensorless activity, zero intersection of back emf is recognized. So as to produce the correct terminating beats for substitution of inverter circuit and to expel the clamor from the back-emf signals, low pass channels are utilized. The total drive framework is displayed in the MATLAB/Simulink programming. The sensorless drive is tested for various operating conditions.

Keywords BLDC motor · Back-EMF detection · Sensorless operation · Speed · Estimator · Hall-effect sensors

1 Introduction

A brushless DC (BLDC) engine is a pivoting self-synchronous framework whose stator is same as that of an enlistment engine, and the rotor has surface set up perpetual magnet. In BLDC engine, winding is situated on stator curl that is stationary, and perpetual magnets are set on rotor that is turning. In DC engine, the present extremity is modified by commutator and brushes; however, in brushless DC motor there are not any brushes and commutator. The present polarity reversal is managed through switches (MOSFET, IGBT) in synchronization with rotor role. So, sensed BLDC motor uses role sensors to experience the particular rotor role or the position may be detected without sensors [1].

Brushless DC automobiles are maximum famous over widespread DC motor due to its high performance, silent operation, compact length, reliability, and coffee upkeep. But the velocity manage of these cars is not a simple project; the

P. M. Yadav · S. Y. Gadgune
Dr. Babasaheb Ambedkar Technological University, Lonare, India

P. M. Yadav (✉) · S. Y. Gadgune
Electrical Engineering, Padmabhooshan Vasanttraodada Patil Institute of Technology,
Budhgaon, India

© Springer Nature Singapore Pte Ltd. 2020
H. S. Saini et al. (eds.), *Innovations in Electrical and Electronics Engineering*,
Lecture Notes in Electrical Engineering 626,
https://doi.org/10.1007/978-981-15-2256-7_44

463



Sr.No-07

An Attempt to Use Municipal Waste in Road Construction

Kulkarni S. B.*, **Hadole H. P.****, **Ranadive M. S.#**

*Research Scholar, College of Engineering, Pune-411005, Maharashtra, India.

Email: principal@sietghogaon.org

*M.Tech. Student, College of Engineering, Pune-411005, Maharashtra, India.

Email: hadole50@gmail.com

#Associate Professor, College of Engineering, Pune-411005, Maharashtra, India.

Email: msr.civil@coep.ac.in

Abstract: Natural materials being exhaustible in nature, its quantity is declining gradually. Also, cost of extracting good quality of natural material is increasing. Concerned about this, the scientists are looking for alternative materials for road construction, and industrial wastes product is one such category. If these materials can be suitably utilized in highway construction, the pollution and disposal problems may be partly reduced. In the absence of other outlets, these solid wastes have occupied several acres of land around plants throughout the country.

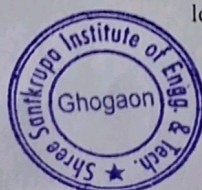
The objective of this paper is to study the use of waste materials in construction of roads, to list out the waste material that can be used for the construction of roads in various layers, to study the development in use of waste for substitute of bitumen, study of use of plastic, rubber inroads, to find out whether it is possible and feasible to use of pyro oil derived from plastic waste for construction of flexible pavement, to conduct all important tests of bitumen by adding the pyro oil to bitumen in various percentages i.e. 5 %, 7.5 % and 10 %. The problem of disposal of waste will be converted into a potential requirement of raw material for roads. The generation of waste from Industry as well as the municipal solid waste will be diverted maximum for roads. Necessary testing program will be run to ascertain the same.

Keywords: Waste Material, Strength, Pyro-oil

1. Introduction

In recent years, applications of industrial & municipal wastes have been considered in road construction with great interest in many industrialized and developing countries. The use of these materials in road making is based on technical, economic, and ecological criteria. The lack of traditional road materials and the protection of the environment make it imperative to investigate the possible use of these materials

carefully. India has a large network of industries located in different parts of the country and many more are planned for the near future. Several million metric tons wastes are produced in these establishments. Traditionally soil, stone aggregates, sand, bitumen, cement etc. are used for road construction. Natural materials being exhaustible in nature, its quantity is declining gradually. Also, cost of extracting good quality of natural material is increasing. Concerned about this, the scientists are looking for alternative materials for road



An Islanding Detection Method for Inverter-Based Distributed Generators based on the Reactive Power Disturbance

Sagar H.Mali

Student(ME Electrical)
Fabtech Technical Campus, Sangola.

Prof. Ch. Mallareddy

Asst.Professor, Department Of Electrical Engg
Fabtech Technical Campus, Sangola.

Abstract

In this paper, an islanding discovery technique for inverter-based distributed generators (DGs) is displayed, which depends on bothering reactive power yield. Two arrangements of unsettling influences are arranged in this technique, which have diverse amplitudes what's more, span time. The first set of reactive power disturbance (FSORPD) is intermittent with little amplitudes to break the reactive control adjust amid islanding, though the greatness of the second set of reactive power disturbance (SSORPD) is adequate to constrain the recurrence to stray outside its edge limits. Considering all the conceivable recurrence variety attributes with the FSORPD in the wake of islanding, three rules are intended for exchanging the aggravation from the FSORPD to the SSORPD. Since DGs situated at various positions have a similar, recurrence variety attributes, the SSORPDs can be included diverse DGs at a similar time without the need of correspondence. In this way, synchronization of the SSORPDs can be ensured for the framework with different DGs and the technique can distinguish islanding with a zero nondetection zone property. In addition, the strategy can be connected to the DG either working at unity power factor or providing reactive power too for its neighborhood stack.

Key Words-DG,PCC,FSORPD,SSORPD,PJD,NDZs.

I Introduction

THE inverter-based distributed generators(DG) utilizes sustainable vitality (photovoltaic, wind control, power device, and micro turbine, and so on.) to supply control for the system and neighborhood stack [1], [2]. It is by and large generally connected to secure condition and make the power business advancement supportable. So as to guarantee the protected activity of both the system and the DG, the DG must be furnished with islanding location work Islanding is a condition in which a bit of the utility framework that contains

both the DG and load keeps working while this bit is electrically isolated from the primary utility. Inadvertent islanding can bring about power quality issues, genuine gear harm, and even security perils to utility activity work force [5], [6]. Along these lines, the DG needs to identify islanding successfully for this situation and disengage itself from the organize as quickly as time permits to keep the harms specified prior. As per IEEE Std. 929-2000 and IEEE Std. 1547-2003, a most extreme deferral of 2 s is required for the discovery of an islanding and a non specific framework for islanding location contemplate is suggested too, where the appropriated organize, the RLC stack and the DG are associated at the point of common coupling (PCC). By and large, islanding recognition strategies can be ordered into following three classifications: 1) correspondence based strategies; 2) latent strategies; and 3) dynamic techniques. Communication based techniques do no damage to the power nature of the power framework and have no non detection zones (NDZs) in the hypothesis. Be that as it may, the cost is much high as a result of the need of correspondence foundation and the tasks are more intricate too [7]. Moreover, the adequacy can't be ensured with the danger of correspondence breakdown [8]. Consequently, latent what's more, dynamic techniques have been all around created. Latent techniques decide the islanding condition by estimating framework parameters, for example, the greatness of the voltage at the PCC, the PCC voltage recurrence, and stage hop [9]. As needs be, over/under frequency protection(OFP/UFP), over/under voltage protection(OVP/UVP) and phase jump detection (PJD) are the most generally utilized aloof islanding identification techniques. These uninvolved techniques are anything but difficult to execute what's more, do no mischief to the power quality,

