

Number of research papers per teachers in the Journals notified on UGC website in A.Y. 2017-18

S.No.	Title of paper	Name of the author/s	Department of the teacher	Name of the journal	ISSN number	Link to website of the Journal	Link to article/paper/abstract of the article	Is it listed in UGC Care list/Scopus/Web of Science/other, mention	Page No.
1	Personalized anonymization for patient privacy in a mobile health world	Ram Prasad Reddy S. , Valli Kumari V., Raju K.	Computer Science Engineering	Journal of Advanced Research in Dynamical and Control Systems	1943-023X	https://www.scimagojr.com/journalsearch.php?q=20500195215&tip=sid&cliclean=0	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85089112793&partn	Scopus	3
2	Enhanced magnetic and magneto electric properties of mn doped multiferroic ceramics	Dhanalakshmi B, Kollu P., B.Chandra Sekhar ,et al.	Basic Sciences and Humanities	Ceramics International	0272-8842	https://www.journals.elsevier.com/ceramics-international	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85017478397&doi=	Scopus	4
3	Severity based contingency management approach: an indian scenario	Akanksha Mishra , Nagesh Kumar G.V.	Electrical and Electronics Engineering	Journal of Engineering Science and Technology	1823-4690	https://jestec.taylors.edu.my/	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85021975401&partn	Scopus	5
4	Spectroscopic (FTIR FT-Raman, UV-Vis) and quantum chemical studies of 4-chloro-3-iodobenzophenone	K.Venkata Prasad , Muthu S., Santhamma C.	Basic Sciences and Humanities	Journal of Molecular Structure	0022-2860	https://www.sciencedirect.com/journal/journal-of-molecular-structure	https://www.scopus.com/inward/record.uri?eid=2-s2.0-84988499025&doi=	Scopus	6
5	IbFWA: integrated bloom filter in watchdog algorithm for hybrid black hole attack detection in MANET	Kollati Vijaya Kumar , Somasundaram K.	Computer Science Engineering	Information Security Journal	19393547	https://www.tandfonline.com/toc/uiss20/current	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85013074521&doi=	Scopus	7
6	Two phase active counter mechanism embedded with particle swarm optimization technique for segmentation of bio-medical images	Jyothula Hari , Rao S.K., Vallikumari V.	Information Technology	Journal of Advanced Research in Dynamical and Control Systems	1943-023X	https://www.jardcs.org/	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85033502819&partn	Scopus	8
7	Applying level set and optimization technique for image segmentation to avoid noise and intensity inhomogeneity	Jyothula Hari , Koteswara Rao S., Valli Kumari V.	Information Technology	Fronteiras	2238-8869	https://doaj.org/toc/2238-8869?source=%7B%22query%22%3A%7B%22b00l%22%3A%7B%22mu	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85030546512&doi=	Scopus	9
8	Energy efficient IEEE754 floating point multiplier using dual spacer delay insensitive logic	Jyothula Sudhakar , Sushma K.	Electronics and Communication Engineering	Circuit World	0305-6120	https://www.emeraldgroupublishing.com/journal/cw	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85026193802&doi=	Scopus	10
9	A risk of severity based scheme for optimal placement of interline power flow controller using composite index	Akanksha Mishra , Kumar G.V.N.	Electrical and Electronics Engineering	International Journal of Power and Energy Conversion	17571162	https://www.inderscience.com/jhome.php?jcode=ijpec	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85024130172&doi=	Scopus	11
10	Design of Viterbi decoder for underwater marine receivers using multi-threshold null convention logic (MTNCL)	Jyothula Sudhakar , Maheswari A.U.	Electronics and Communication Engineering	Defence S and T Technical Bulletin	19856571	https://www.scimagojr.com/journalsearch.php?q=21100201063&tip=sid&cliclean=0	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85017470337&partn	Scopus	12

S.No.	Title of paper	Name of the author/s	Department of the teacher	Name of the journal	ISSN number	Link to website of the Journal	Link to article/paper/abstract of the article	Is it listed in UGC Care list/Scopus/Web of Science/other, mention	Page No.
11	A line utilization contingency distribution index based secured operation of power systems	Akanksha Mishra, Kumar G.V.N	Electrical and Electronics Engineering	Australian Journal of Electrical and Electronics Engineering	1389606	https://www.tandfonline.com/journals/tele20?cookieSet=1	https://www.tandfonline.com/doi/abs/10.1080/1448837X.2017.1389606	Scopus	13
12	Congestion management of deregulated power systems by optimal setting of interline power flow controller using gravitational search algorithm	Akanksha Mishra, Kumar G.V.N	Electrical and Electronics Engineering	Journal of Electrical Systems and Information Technology	2314-7172	https://jesit.springeropen.com/	https://www.sciencedirect.com/science/article/pii/S231471721630071X?via%3Dihub	Scopus	14

Document details - Personalized anonymization for patient privacy in a mobile health world

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Journal of Advanced Research in Dynamical and Control Systems

Volume 9, Issue 1, October 2017, Pages 362-377

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Personalized anonymization for patient privacy in a mobile health world(Article)

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Prasad Reddy, S., Valli Kumari, V., Raju, K.

^aDepartment of Computer Science & Engineering, Vignan's Institute of Engineering for Women, Visakhapatnam, Andhra Pradesh, India

^bDepartment of Computer Science & Systems Engineering, Andhra University, Visakhapatnam, Andhra Pradesh, India

^cResearch & Development, ANITS, Visakhapatnam, Andhra Pradesh, India

Abstract

The twenty first century has registered a significant role of telecommunications. Prominently, Mobile technology has shown strong growth in the past decade, reaching out every corner of the globe. It is now an important tool in monitoring global health programs. The Medical field has surplus advanced services that are limited to certain portions of the world. Mobile technology can be collaborated with medical services on a higher pace for focusing on people living in countries with a marginalized income. Today, Mobile health policies are being used to overcome access factors like geographic distance to services, social marginalization, inadequate skilled medical personnel, lack of financial resources etc.. According to a report by World Health Organization in 2011, governments cite issues related to data privacy and security and the protection of individual health information as two of the most significant hurdles for the expansion of Mobile health. Protecting personal health information that is collected and transmitted over mobile devices is essential to bringing Mobile health to scale up and provide a mature foundation for its continued growth. This paper attempts to address patient privacy in a mobile world using personalized k-anonymity. Experiments were conducted on synthetic datasets to verify our method and promising results were obtained. © 2017,

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SciVal Topic Prominence 

Topic: Anonymization | K-Anonymity | Big Data

Prominence percentile: 95.688



Author keywords

Anonymity

Data privacy

Location enlargement

Mobile health

Taxonomy

ISSN: 1943023X

Source Type: Journal

Original language: English

Document Type: Article

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Document details - Enhanced magnetic and magnetoelectric properties of Mn doped multiferroic ceramics

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Ceramics International

Volume 43, Issue 12, 15 August 2017, Pages 9272-9275

Enhanced magnetic and magnetoelectric properties of Mn doped multiferroic ceramics(Article)

Dhanalakshmi, B., Kollu, P., **Sekhar, B.C.**, Parvatheeswara Rao, B., Rao, P.S.V.S. ^aVignan's Institute of Information Technology, Visakhapatnam, 530049, India^bCASEST, School of Physics, University of Hyderabad, Hyderabad, 500046, India^cNewton Alumnus Researcher - The Royal Society London, Thin Film Magnetism group, Cavendish Laboratory, Department of Physics, University of Cambridge, Cambridge, CB3 0HE, United Kingdom[View additional affiliations](#)

Abstract

Single phase multiferroics of BiFeO₃ (BFO) and Mn doped Bi_{0.95}Mn_{0.05}FeO₃ (BMFO), and composite multiferroic systems of BiFeO₃-Ni_{0.5}Zn_{0.5}Fe₂O₄ (BFO-NZFO) and Mn doped Bi_{0.95}Mn_{0.05}FeO₃-Ni_{0.5}Zn_{0.5}Fe₂O₄ (BMFO-NZFO) have been prepared by using sol-gel autocombustion and solid state methods. Rietveld analysis on the BFO and BMFO samples reveals rhombohedrally distorted single phase R3c perovskite structures while that of the multi-phase composites exhibit both spinel (for the NZFO) and perovskite phases. Scanning electron micrographs of the samples show uniformly dispersed fine grained microstructures with indications of decreased grain size for the Mn doped samples. Polarization-electric field hysteresis (P-E) loops on the samples exhibit spontaneous ferroelectric polarizations with specific enhancements in the remnant polarization by the Mn doping either in the single phase BMFO or in the multi-phase BMFO-NZFO composite. Room temperature magnetic hysteresis (M-H) loop measurements on the samples indicate that the doping of Mn in bismuth sites in the BFO has produced a considerable improvement in the magnetization, and the Mn doped BMFO-NZFO composite has shown further improvement in its value compared to that of the undoped BFO-NZFO composite. Thus, it can be inferred from the above that the Mn doping in single phase/composite BiFeO₃ based multiferroic ceramics is capable of enhancing both the ferroelectric and ferromagnetic properties and thereby the magnetoelectric (M-E) coupling as evident from the obtained M-E curves. © 2017 Elsevier Ltd and Techna Group S.r.l.

SciVal Topic Prominence

Topic: Ferroelectric Materials | Magnetic Properties | Dromaiidae

Prominence percentile: 99.374

Author keywords

[Magnetic hysteresis loops](#) [Magnetoelectric coupling](#) [Multiferroics](#) [Rietveld analysis](#) [Sol-gel autocombustion](#)

Indexed keywords

Engineering controlled terms:

[Bismuth compounds](#) [Ceramic materials](#) [Electric fields](#) [Ferroelectric ceramics](#) [Ferroelectricity](#) [Iron compounds](#) [Magnetic hysteresis](#) [Magnetic materials](#) [Magnetism](#) [Perovskite](#) [Polarization](#) [Rietveld analysis](#) [Scanning electron microscopy](#) [Sol-gel process](#) [Sol-gels](#)

Engineering uncontrolled terms

[Electric field hysteresis](#) [Ferroelectric polarization](#) [Fine-grained microstructure](#) [Magnetoelectric couplings](#) [Magnetoelectric properties](#) [Multiferroics](#)

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Impedance spectroscopy and conduction mechanism of xNi.50Zn..... x)Bi0.9La... composites

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Sharma, S. , Reshi, H.A. , Siqueiros, J.M.

Stability of rhombohedral structure and improved dielectric and ferroelectric properties of Ba, Na, Ti doped BiFeO₃ solid solutions(2022) *Ceramics International*

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Structural, electrical and ferroelectric characteristics of lead-free ceramic: Bi(Fe_{0.85}...(2022) *Ferroelectrics*[View details of all 30 citations](#)

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Visakhapatnam-49.

SEVERITY BASED CONTINGENCY MANAGEMENT APPROACH: AN INDIAN SCENARIO

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Abstract

In today's electronic world, secured operation of the electric power system is one of the foremost requirements. Contingency analysis and management thus becomes the basic requirement of system analysis. In this paper, the contingency study has been done on a heavily loaded practical power system in an Indian scenario. A Composite Severity Index (CSI) has been proposed for the determination of critical line. The contingency analysis has been done using Rapid Contingency Ranking Technique (RCRT). By this method the number of lines on which the contingency analysis is to be performed is greatly reduced. Thereafter, an Interline Power Flow Controller (IPFC) has been placed in the system on the basis of CSI for improvement of the system situation post-contingency. An IPFC has been found to be very effective in the improvement of system condition of the heavily loaded Indian system.

Keywords: Contingency, Interline power flow Controller, Line utilization factor, Fast voltage stability index, Composite index, Optimal placement.

1. Introduction

The transmission lines, as a result of deregulation in recent times, are forced to carry more electrical power than their design limits. Therefore, chances of system disruption due to outages have increased to a great extent. Hence, Contingency analysis has become one of the most vital requirements of the power system. The security assessment may be of dynamic type [1] or may be done in static conditions. Many methods are available in literature for static type contingency analysis, which is basically a planning issue. The static methods used in literature

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Document details - Spectroscopic (FT-IR, FT-Raman, UV-Visible) and quantum chemical studies of 4-Chloro-3-iodobenzophenone

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Journal of Molecular Structure

Volume 1128, 15 January 2017, Pages 685-693

Spectroscopic (FT-IR, FT-Raman, UV-Visible) and quantum chemical studies of 4-Chloro-3-iodobenzophenone(Article)

Venkata Prasad, K., Muthu, S., Santhamma, C.

^aVIGNAN'S Institute of Engineering for Women, Visakhapatnam, A.P 530049, India^bDepartment of Physics, Arignar Anna Govt. Arts College, Cheyyar, Tamilnadu 604047, India^cDepartment of Eng. Physics, Andhra University, Visakhapatnam, A.P 530003, India

Abstract

The vibrational analysis of the substituted Benzophenone molecule 4-Chloro-3-iodobenzophenone (4, 3-ClIBP) is carried out using both FT-IR and FT-Raman spectra and also quantum chemical calculations of the scaled frequencies using the DFT method B3LYP/LanL2DZ basis set. The natural bond orbital analysis of this molecule has been carried out to describe the various intramolecular interactions responsible for the stabilization of the molecule. The HOMO, LUMO energy gap have been computed with the TD-DFT theory and the differences are compared with UV-absorption spectra. The statistical thermodynamic functions are calculated for the range of 100–1000 K. The Fukui functions are evaluated to describe the activity of the sites. © 2016 Elsevier B.V.

SciVal Topic Prominence

Topic: Density Functional Theory | Molecular Orbitals | Electric Dipole Moments

Prominence percentile: 96.291

Author keywords

DFT and fukui functions FT-IR FT-Raman UV-absorption

Indexed keywords

Engineering controlled terms:

Chemical analysis Chemical bonds Light absorption Molecules Polypropylenes

Engineering uncontrolled terms

FT-Raman FTIR and FT-Raman spectra Fukui functions Intramolecular interactions
Natural bond orbital analysis Quantum chemical calculations Quantum chemical studies
UV absorption

Engineering main heading:

Quantum chemistry

Cited by 5 documents

Ramana, P.V., Sundius, T., Muthu, S.

Spectroscopic, quantum mechanical, electronic excitation properties (Ethanol solvent), DFT investigations and molecular docking analysis of an anti-cancer drug Bendamustine

(2022) *Journal of Molecular Structure*

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Bangaru, S., Manivannan, P., Muthu, S.

Spectroscopic investigations, quantum chemical calculations and molecular docking studies of Mangiferin - an anti-viral agent of H1N1 Influenza virus

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IBFWA: Integrated Bloom Filter in Watchdog Algorithm for hybrid black hole attack detection in MANET

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^bDepartment of Computer Science and Engineering & IT, Aarupadai Veedu Institute of Technology, Paiyanoor, Chennai, Tamilnadu India

ABSTRACT

In recent days, the Mobile Ad-hoc Network (MANET) has gained more attention and popularity due to its dynamic nature. However, it is highly vulnerable to attacks due to its wireless nature and lack of central authority. This affects the overall performance of the network. To solve this problem, the Watchdog protocol was developed for attack detection. However, if it receives a false report from a misbehaving node, it fails to detect the attack. To overcome this problem, the Integrated Bloom Filter with Watchdog Algorithm (IBFWA) is proposed in this article to avoid packet loss. Here, the Certificate Authority (CA) validates the node through the process of key generation. Then, it checks whether the node is normal or attacker; if it is a black hole node, it will be blocked and communication through this node is avoided. If a node is compromised and revoked as a normal node, it is added to the network and communication through the node is enabled. The experimental results evaluate the performance of the proposed attack detection system in terms of lower node outage, residual energy, end-to-end delay, high detection probability, throughput, packet transfer rate and packet delivery ratio.



KEYWORDS

Black hole attack; Bloom filter; Integrated Bloom Filter with Watchdog Algorithm (IBFWA); Mobile Ad-hoc Network (MANET); Watchdog

1. Introduction

MANET (Khan, Imran, Abbas, & Durad, 2017; Lal, 2014; Sarika, Pravin, Vijayakumar, & Selvamani, 2016) is a self-configurable ad-hoc network of nodes that are deployed randomly. Each node is a mobile device that can act as a router as well as a host. Each node maintains a partial network state. The nodes are grouped to improve the network scalability. Due to the dynamic nature of the mobile nodes, there is uncertainty in the route prediction. The nodes are classified as well-behaved nodes if they cooperate with the forwarding activities and as misbehaving nodes if they act against the network. Also, the nodes are classified as faulty nodes, selfish nodes, and malicious nodes. Faulty nodes do not cooperate due to the hardware malfunction and software error. Selfish nodes drop all the packets received from the sender node and use other nodes to forward the packets. Malicious nodes affect the packet delivery rate and disturb the normal behavior of the MANET. This causes

severe degradation in the network performance (Serrat-Olmos, Hernández-Orallo, Cano, Calafate, & Manzoni, 2012). The malicious node can be predicted by using the behavior and communication history of the mobile node and the energy consumption for data packet transmission. A black hole (Manoranjini, Chandrasekar, & Rajiniginath, 2013) is defined as a malicious node that generates false replies for the route requests from a node and exploits the routing protocol by advertising the shortest route to the destination node. Then, the black hole is added as an active node in the network (Arathy & Sminesh, 2016; Dhaka, Nandal, & Dhaka, 2015; Mohanapriya & Krishnamurthi, 2014). The black hole node always tries to attract and capture the attention of the source node by advertising that it has the shortest path toward the destination node. The black hole attack is very dangerous in the network environment, and it leads to a denial-of-service (DOS) attack. When a black hole node is

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Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/uis.
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TWO PHASE ACTIVE COUNTER MECHANISM EMBEDDED WITH PARTICLE SWARM OPTIMIZATION TECHNIQUE FOR SEGMENTATION OF BIO-MEDICAL IMAGES

Hari Jyothula^{1*}, Koteswara Rao S.², Valli Kumari V³

¹ Department of Computer Science & Engineering, Vignan's Institute of engineering for Women, Visakhapatnam, India

² Department of Electronics & Communications Engineering, K L University, Vijayawada, India

³ Department of Computer Science & Systems Engineering, Andhra University, Visakhapatnam, India
^{*}harijyothula@gmail.com

ABSTRACT

In this paper, we recommend a progressed region-based active contour model in An variational level situated detailing What's more streamlining system. We define an vitality utilitarian with a nearby force fitting term, which induces An neighbourhood power with Lure the shape and stops it In object boundaries, What's more an assistant worldwide force level fitting term, which drives the movement of the shape a wide margin far from article limits. Therefore, the blending from claiming these two powers considers adaptable introduction of the forms. This vitality will be then consolidated under a level situated plan for a level situated regularization haul that is essential for exact calculation in the comparing level situated technique. Those recommended model may be initial exhibited as a two-phase level situated formulation, et cetera enlarged on a multi-phase detailing. Molecule swarm streamlining for minimization about vitality fill in. Numerical tests looking into a combination from claiming images indicate that the recommended figuring is hearty, stable, Also accomplishes immense enhancements once precision Furthermore proficiency again those state from claiming expressions of the mankind's background.

Keywords — Intensity Inhomogeneity; Noise; Level-Set Model; Active counter model; Particle Swarm Optimization (PSO).

I. INTRODUCTION

Image Since the prologue by Kass et al. [1], dynamic shape models need been generally utilized within image division for guaranteeing comes about. The models have the ability will gatherings give smooth birch What's more shut forms with recuperate object limits with sub pixel accuracy, which is normally not conceivable done established methods, for example, edge identification





Document details - Applying level set and optimization technique for image segmentation to avoid noise and intensity inhomogeneity

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Volume 6, Issue 2, 2017, Pages 299-306

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Applying level set and optimization technique for image segmentation to avoid noise and intensity inhomogeneity(Article)

Jyothula, H., Koteswara Rao, S., Valli Kumari, V.

^aDepartment of Computer Science and Engineering, Vignan's Institute of Engineering for Women, Visakhapatnam, India^bDepartment of Electronics and Communications Engineering, Koneru Lakshmi University, Vijaywada, India^cDepartment of Computer Science and Systems Engineering, Andhra University, Visakhapatnam, India

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Abstract

This paper displays a variational show for concurrent multiphase division and force predisposition estimation for images tainted by solid commotion and intensity inhomogeneity. Here, utilizing nearby paired fitting level set model and particle swarm optimization for minimization of vitality work .Numerical tests on an assortment of images show that the proposed calculation is hearty, stable, and achieves huge enhancements on exactness and proficiency over the condition of expressions of the human experience.

SciVal Topic Prominence ①

Topic: Active Contour Model | Level Set | Image Segmentation

Prominence percentile: 95.903



Author keywords

[Intensity Inhomogeneity](#) [Level-Set Model](#) [Local Binary Fitting \(LBF\)](#) [Noise](#) [Particle Swarm Optimization \(PSO\)](#)

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Consiglio Nazionale delle Ricerche		CNR
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Document details - Energy efficient IEEE 754 floating pointmultiplier using dual spacer delay insensitive logic

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Circuit World

Volume 43, Issue 2, 2017, Pages 72-79

Energy efficient IEEE 754 floating pointmultiplier using dual spacer delay insensitive logic(Article)

Jyothula, S., Sushma, K.

Vignan's Institute of Engineering for Women, Visakhapatnam, India

Abstract

Purpose-The purpose of this paper is to present a single-precision floating-point multiplier where a low-power operation is attained through the reduction of switching activity. A floating-point multiplier is the basic building block for many applications such as digital signal processing (DSP) processors and multimedia applications involving a large dynamic range. **Design/methodology/approach-**A floating-point multiplier was implemented in asynchronous logic such as multi-threshold null conventional logic and the proposed multi-threshold dual spacer dual rail delay insensitive logic (MTD3L). The proposed logic deals with high performance and energy efficiency. **Findings-**The Institute of Electrical and Electronics Engineering (IEEE) has provided a standard to define the floating-point representation, which is known as the IEEE 754 standard. Rounding has not been implemented because it is not suitable for high-precision applications. **Originality/value-**The performance aspects of the proposed asynchronous MTD3L floating-point multiplier are obtained using a Mentor Graphics tool and are compared with those of the existing asynchronous logic. © Emerald Publishing Limited.

SciVal Topic Prominence

Topic: Floating Point | Mantissa | Digital Arithmetic

Prominence percentile: 71.928

Author keywords

[Asynchronous](#) [Dual rail](#) [Low power](#) [Normalize](#)

Indexed keywords

Engineering controlled terms:

[Digital arithmetic](#) [Digital signal processing](#) [Digital signal processors](#) [Energy efficiency](#) [Formal logic](#) [Signal processing](#)

Engineering uncontrolled terms

[Asynchronous](#) [Basic building block](#) [Digital signal processing \(DSP\)](#) [Dual rail](#) [Low Power](#) [Multimedia applications](#) [Normalize](#) [Switching activities](#)

Engineering main heading:

[Computer circuits](#)

Cited by 3 documents

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Evaluation of Double Precision Dual-Rail Asynchronous IEEE 754 Intermediate Product Shifter

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Sudhakar, J., Durga, A.L., Sushma, K.

Evaluation of dual rail complete detection circuitry using asynchronous delay insensitive frameworks

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Document details - A risk of severity based scheme for optimal placement of interline power flow controller using composite index

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International Journal of Power and Energy Conversion

Volume 8, Issue 3, 2017, Pages 257-275

A risk of severity based scheme for optimal placement of interline power flow controller using composite index(Article)

Mishra, A., Kumar, G.V.N.

^aDepartment of EEE, Vignan's Institute of Engineering for Women, Visakhapatnam, Andhra Pradesh, India^bDepartment of EEE, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India

Abstract

Due to massive increase in the power transactions due to restructuring, the stress in transmission lines has increased largely and severity assessment is very essential. Contingency assessment of a power system predicts the effect of outages in transmission lines and generator units. In this paper, contingency ranking of the lines has been done using composite severity index. A risk-based strategy has been adopted for the placement of interline power flow converter (IPFC). From the list of the severe lines obtained, IPFC is placed on the line which has highest possibility of severity during the occurrence for different outages. To verify the proposed methodology, it is implemented on IEEE 30 and Indian Utility 62 bus systems. The load on the bus with highest load is further increased gradually up to the critical value and the results have been presented and analysed to ascertain the effectiveness of IPFC for contingency management. Copyright © 2017 Inderscience Enterprises Ltd.

SciVal Topic Prominence

Topic: Flexible AC Transmission System | Thyristors | Controller

Prominence percentile: 89.182

Author keywords

composite severity index contingency CSI fast voltage stability index FVSI interline power flow controller
line utilisation factor LUF optimal placement

ISSN: 17571154

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Document Type: Article

Publisher: Inderscience Enterprises Ltd.

Kumar, G.V.N.; Department of EEE, Vignan's Institute of Information Technology, Visakhapatnam, Andhra Pradesh, India;

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Design of viterbi decoder for underwater marine receivers using multi-threshold null convention logic (MTNCL)(Article)

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Abstract

In this paper, we develop a Viterbi decoder for underwater ITU- V.34 standard marine receivers. In order to have low power and to accomplish faithful quality of transmission, clockless approaches are found to better alternatives. The underwater message channel is not only band limited, but motionless as well and mostly difficult because of strong distortions. In view of this, underwater communications is the focus of exhaustive research aiming to accomplish higher data rates with optimized delay requirements. Null convention logic (NCL) is the traditional asynchronous design approach with which draw backs of clock distribution, power or delay are overcome. In order to obtain both advantages, we incorporate a multithreshold approach in the NCL, known as Multi -Threshold NCL (MTNCL). The proposed method of Viterbi decoder is designed using Xilinx tools and is compared with the performance of conventional complementary metal oxide Semiconductor (CMOS) and asynchronous NCL design in terms of power savings.

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A line utilization contingency distribution index based secured operation of power system

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ABSTRACT

The practical power systems undergo variable load throughout the year. Maintaining security and reliability in operation of these structures in such a vulnerable scenario is a huge challenge. In this paper, a line utilisation contingency distribution index (LUCDI) has been proposed for obtaining the weakest line of the real-time power system in cases of contingency. The contingency analysis has been executed for every hour load of the IEEE 30-bus system. The LUCDI has been computed for every transmission line of the power system for the severe-most outage, which specifies the stress on the transmission lines as a result of contingency for a real-time load. An interline power flow controller (IPFC) has been positioned and tuned to recover the system from the post-contingency condition. A function with multiple objectives has been used for tuning the IPFC using differential evolution and results have been evaluated to highlight the benefits of an IPFC for management of post-contingency condition in a real-time context.

ARTICLE HISTORY

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Interline power flow controller; optimisation; contingency; real-time power system

1. Introduction

Electric power is the foundation stone of today's industrialised and technologised world. The increased dependence on electricity makes continuous and uninterrupted electrical supply a compulsory prerequisite. A blackout of even a few hours not only causes heavy financial losses and security issues to the state but even the basic requirements and emergency services for the mankind are collapsed. In contrast, due to the ever-increasing load on the power systems, the transmission lines have to transmit power closer to their maximum limits and hence, the chance of its failure has increased considerably. Therefore, there is a foremost requirement of developing an effective method to maintain continuous electrical supply even in contingency condition.

Overloading in transmission lines has been reported to be the major cause for occurrences of some of the major contingencies in the world. Several researchers have suggested various methods to manage the problem severity post-contingency in transmission lines for fixed load on transmission lines. Haque (2008) proposed a voltage stability index with almost linear characteristic, thus, giving a good estimation of voltage collapse. Mishra et al. (2016) proposed the employment of IPFC based on composite severity index to improve the transmission system security for fixed loads. Facts devices have been used by researchers to solve various power system issues. Kumar (2010) used particle swarm optimisation

for tuning the parameters of FACTS controllers like SVC, STATCOM, TCSC and UPFC with an aim of damping the power system oscillations. Haque (2006) proposed the use of SSSC to improve the first swing stability limit and damping of a power system. FACTS controllers have been found to be a very effective tool in power systems for handling congestion and contingency issues using sensitivity-based methods (Kumar, Srivastava, and Singh 2005). Yousefi, Iu, and Fernando (2013) proposed the placement and sizing of SVC using non-dominated sorting genetic algorithm (NSGA II) to solve a multi-objective optimisation problem for the improvement of system security in normal and N-1 contingency condition. The proposed method has been applied on an IEEE 14-bus system. Jayasankar, Kamaraj, and Vanaja (2010) have used artificial neural network for TCSC placement for severity management of the system post-contingency. Naresh Babu and Sivanagaraju (2012) have used optimal power flow method in the presence of IPFC using intelligent search evolution algorithm for contingency management. IPFC is one of the most recent, flexible and powerful FACTS device (Gyugi, Sen, and Schauder 1999; Hingorani and Gyugyi 2000). IPFC has been found to reduce the overall stress on the lines very effectively for static load. Lashkar Ara et al. (2013) have placed a UPFC device on a transmission line, based on severity to reduce the average load ability of the system for N-1 contingency condition. Kumar and Kalavathi (2014) have used



Congestion management of deregulated power systems by optimal setting of Interline Power Flow Controller using Gravitational Search algorithm

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Abstract

In a deregulated electricity market it may at times become difficult to dispatch all the required power that is scheduled to flow due to congestion in transmission lines. An Interline Power Flow Controller (IPFC) can be used to reduce the system loss and power flow in the heavily loaded line, improve stability and loadability of the system. This paper proposes a Disparity Line Utilization Factor for the optimal placement and Gravitational Search algorithm based optimal tuning of IPFC to control the congestion in transmission lines. DLUF ranks the transmission lines in terms of relative line congestion. The IPFC is accordingly placed in the most congested and the least congested line connected to the same bus. Optimal sizing of IPFC is carried using Gravitational Search algorithm. A multi-objective function has been chosen for tuning the parameters of the IPFC. The proposed method is implemented on an IEEE-30 bus test system. Graphical representations have been included in the paper showing reduction in LUF of the transmission lines after the placement of an IPFC. A reduction in active power and reactive power loss of the system by about 6% is observed after an optimally tuned IPFC has been included in the power system. The effectiveness of the proposed tuning method has also been shown in the paper through the reduction in the values of the objective functions.

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Keywords: Congestion; Interline Power Flow Controller; Line Utilization Factor; IPFC placement; IPFC tuning; Gravitational Search algorithm

Abbreviations: IPFC, Interline Power Flow Controller; SSSC, Static Synchronous Series Compensator; TCSC, thyristor controlled series compensator; LUF, Line Utilization Factor; PSO, particle swarm optimization; GSA, Gravitational Search algorithm; VSC, voltage source converter; VD, voltage deviation; SM, security margin.

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