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3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last 5 years [2022, 2021, 2020, 2019, 2018]

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedi	Name of the conference	National / International	Year of publication	ISBN/ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Sushant Kumar	International Conference, 3rd Go Green Summit, held at Manila, Philippines.	Sustainable development of groundwater: A case study of Begamganj block in Bina River Basin of Madhya Pradesh, India.	Inte rnati onal Conf eren ce, 3rd Go Gre en	Intern ational Journa l of Recent Resear ch Aspect s	International conference at Manila, Philippines	2018	ISBN:978-81-932966-1-5	Dellhi Technological University	
2	Sushant Kuma	Smart cities with focus on environmental challanges-2018	Performance of FaL-G Bricks in Aggressive Chemical Environment	Sma rt citie s with focu	Smart cities with focus on enviro	International Conference	2018	-	Dellhi Technological University	-
3	Mr. Shiv Narain Gupta		A Literature Review on IOT Innovation	2nd Nati onal	2nd Nation al	National	2018	978-93-86238-52-8	Greater Noida Institute of Technology	Excellent Publication House
4	Mr. Vivek Gupta		Relative Comparison Of Narrow Band Spectrum Sensing Technique: A Survey	Com miss ion	Comm ission for Sci.	National	2018	NA	Greater Noida Institute of Technology,	NA
5	Mr. Priyesh Tiwari		Relative Comparison Of Narrow Band Spectrum Sensing Technique: A Survey	Com miss ion for	Comm ission for Sci. &	National	2018	NA	Greater Noida Institute of Technology, Greater Noida	NA
6	Raveendra Kumar Bharati		"Disruptive Technologies pushed (->) Teaching Engineering is "On the Edge of the Crevasse" - Challenges and Solutions	Inte rnati onal Conf	Intern ationa l Confe	International	2018		Shobhit University	
7	Richa Bajaj		Smart Education with artificial intelligence based determination of learning styles	Inte rnati onal Conf	Intern ational Confer ence	International	2018	Computer Science Elsevier, Vol. 132,		
8	Dr Moti Singh		Study of newly appeared $\gamma-gamma$ band, in 104-108Mo	63rd DAE - BRN	63rd DAE - BRNS	International	2018	8920121862	Greater Noida Institute of Technology,	Department of Atomic Energy, Govt of India
9	Moti Singh		On electric Quadrupole Transition between rotational states of 188-192Os	63rd DAE - BRN S	63rd DAE - BRNS Sympo	International	2018	8920121862	Greater Noida Institute of Technology, Greater Noida	Department of Atomic Energy, Govt of India
10	Shipra Srivastava	NATIONAL CONFERENCE ON CLOUD COMPUTING AND INFORMATION TECHNOLOGY-2018	Software Engineering as a tool for visulization of large volume Hypuspical & mEDICAL	Dept. Of Compute r Scie nce Engi neer	Dept. Of Comp uter Scienc e Engine ering IIMT	National	2018		Greater Noida Institute of Technology, Greater Noida	Dept. Of Computer Science Engineering IIMT COLLEGE OF ENGINEERING GNOIDA
11	Dr Anuranjan Misr	Soft Computing: Theories and Applications	Effective Data Clustering Algorithms", Advances in Intelligent Systems and Computing				2018	2194-5365,	Accurate Institute c	Springer Singapore
12	Dr. Deepak Kumar Verma		Cloud storage -optimizing the initial Phase for Privacy-Preserving Public Auditing		2ndInt	International	2018		IEC-CET	Springer
13	Dr. Deepak Kumar Verma		Improved RSA algorithm and analysis of Encryption Schemes for Cloud Computing Security		8thInt.	International	2018		IEC-CET	IEEE

14	JAY SHANKAR PRASAD	Smart Innovations in Communicatio n and Computationa l Sciences	All Domain Hidden Web Exposer Ontologies: A Unified Approach for Excavating the Web to Unhide Deep Web	CCS-2	ent Syst	International	2018	3-981-13-241	MVN UNIVERSITY	SPRINGER
15	Dr. Jitendra Sharma		Robust PID load frequency controller design with specific gain and phase margin for multi-area power systems	3rd I	PID 18	International	2018	2405-8963	IIT Roorkee	IFAC, ELSEVIER
16	Mr. Ankit Gupta		Constant torque control schemes for PMSG based wind energy conversion system	1st I	EEIC 20	International	2018	-1-5386-234	School of Enginee	IEEE

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The Organizing Committee congratulates **Mr. Sushant Kumar** of Delhi Technological University, India for his/her worthy Oral Presentation titled *"A case study: Sustainable development of groundwater in Begamganj block of Bina River Basin, Madhya Pradesh, India"* at the 3rd Go Green Summit held on 23rd - 24th March 2018 at Manila, Philippines.

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A Literature Review on IOT Innovation

Jitender Kumar[1], Shubham Vishnoi[2], Shiv Narain Gupta[3] and Manish Gupta[4]

[1, 2, 3]Electronics and Communication Engineering

Greater Noida Institute of Technology, Greater Noida

[4]Department of Electronics and Communication Engineering Inderprastha Engineering College, Ghaziabad

[1]jkjitender87@gmail.com, [2]dakshvishnoi081@gmail.com, [3]shivgnit@gmail.com, [4] guptamanish2004@gmail.com

Abstract: ***The Internet of Things (IOT) is illustrated in many different ways, and it incorporates numerous parts of life from associated homes and urban communities to associated cars and roads, roads to devices that track an individual's conduct and utilize the information gathered for push administrations. IOT is a kind of "general worldwide neural system" in the cloud which interfaces different things. Numerous mechanical IOT applications have been progressively created and deployed in recent years. Internet of Things (IOT) has given a chance to build intense mechanical framework and applications by utilizing the developing presence of RFID, remote, versatile and sensor devices. The main objective of proposed framework is to provide a technology oriented and low-cost system to make an advanced industry for those who away from their industry and want to control devices.***

Keywords: Internet of Things (IOT), Server, Raspberry Pi, Webpage, Ethernet, Smart phone etc.

I. INTRODUCTION

The Internet of Things (IOT) is a recent communication paradigm in which the objects of everyday life will be equipped with microcontrollers, transceivers for digital communication, and suitable protocol stacks that will make them able to communicate with one another and with the users, becoming an integral part of the Internet.

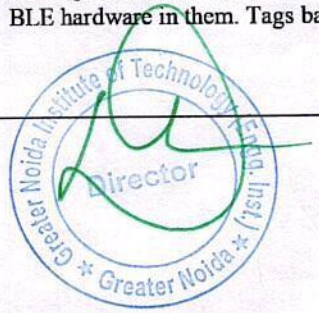
A novel paradigm named "The Internet of Thinks (IOT)" has been introduced in the field of wireless communications several years ago. This term was first coined by Kevin Ashton in 1999 in the context of supply chain management [1]. However, in the past decade, the definition has been more inclusive covering wide range of applications like healthcare, utilities, transport, etc [2]. Although the definition of 'Things' has changed as technology evolved, the main goal of making computer sense information without the aid of human intervention remains the same. A radical evolution of the current Internet into a Network of interconnected objects that not only harvests information from the environment (sensing) and interacts with the physical world (actuation/command/control), but also uses existing Internet standards to provide services for information transfer, analytics, applications, and communications. Fuelled by the prevalence of devices enabled by open wireless technology such as Bluetooth, radio frequency identification (RFID), WiFi, and telephonic data services as well as embedded sensor and actuator nodes, IOT has stepped out of its infancy and is on the verge of transforming the current static Internet into a fully integrated Future Internet [3]. The Internet revolution led to the interconnection between people at an unprecedented scale and pace. The next revolution will be the interconnection between objects to create a smart environment. Only in 2011, the number of interconnected devices on the planet overtook the actual number of people. Currently there are 9 billion interconnected devices and it is expected to reach 24 billion devices by 2020. According to the GSMA, this amounts to $1.3 trillion revenue opportunities for mobile network operators alone spanning vertical segments such as health, automotive, utilities and consumer electronics.

Enabling technologies for the IOT: - There are three types of technologies that enable the internet of things,

i. Near-field communication and Radio Frequency Identification (RFID) - In the 2000s, RFID was the dominant technology. After few years, NFC became dominant (NFC). NFC has become common in smart phones during the early 2010s, with uses such as reading NFC tags or for access to public transportation.

ii. Quick response codes and Optical tags - This is used for low cost tagging. Phone cameras decode QR code using image-processing techniques. In reality QR advertisement campaigns gives less turnout as users need to have another application to read QR codes.

iii. Bluetooth and low energy - This is one of the latest techniques. All newly releasing smart phones have BLE hardware in them. Tags based on BLE can signal



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RELATIVE COMPARISON OF NARROW BAND SPECTRUM SENSING TECHNIQUE: A SURVEY

Dr.S.N. Sharan[1], Vivek Gupta[2] and Priyesh Tiwari[3]

[1]Professor & Director, School of Electrical, Electronics & Communication Engineering
Manipal University Jaipur

[2] Assistant professor Department of electronics and comm. GNIOT Gr.Noida

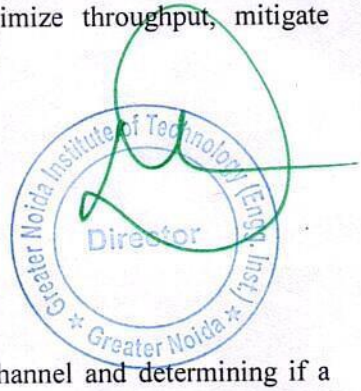
[3] Assistant professor Department of electronics and comm. GNIOT Gr.Noida

ABSTRACT

Radio spectrum is limited and precious resource. However, a fixed spectrum access has lead to underutilization of spectrum as a great portion of licensed spectrum is not effectively utilized. We need to come up with a means for improved utilization of the spectrum creating opportunities for dynamic spectrum access. Cognitive radio is the solution of the dynamic allocation of freq band.cognitive radio will search the white space in the licence band and allotted it to unlicensed or secondary user .present paper is review of cognitive radio and various narrow band spectrum sensing technique .

Keyword –Cognitive radio(CR), Spectrum Sensing (SS),dynamic spectrum access(DSA)

1.Introduction –The wireless application is increasing day by day so that the effective utilization of the freq band is very necessary but by the static allocation of the freq band some of the frequency band will be underutilize .Therefore dynamic spectrum access(DSA)[1] will be used in the cognitive radio(CR)[2]. Cognitive radio(CR)[2] is a radio or system that senses its operational electromagnetic environment and can dynamically and autonomously adjust its radio operating parameters to modify system operation, such as maximize throughput, mitigate interference, facilitate interoperability, access secondary markets" [3].



CR Consists of Four important Steps

1. Spectrum sensing
2. Spectrum decision
3. Spectrum sharing
4. Spectrum mobility

Spectrum sensing is the process of a cognitive radio sensing the channel and determining if a primary user is present, detecting the spectrum holes. Spectrum management is selecting the best available channel (for a cognitive user) over the available channels. Spectrum sharing is the

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Smart Education with artificial intelligence based determination of learning styles

Richa Bajaj[a]*, Vidushi Sharma[b]

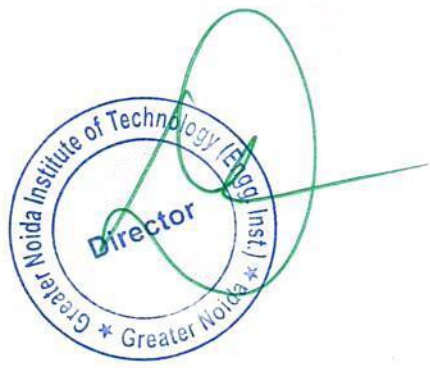
[a,b]*Department of ICT, Gautam Buddha University, Greater Noida 201302, India*

Abstract

The need of the hour in present day education environment is adaptivity. Adaptive educational systems aim to customize content and learning paths of students. These aid's in the minimizing disorientation and cognitive overload problems; thus maximizing learning efficiency. Present learning systems are lacking adaptivity; as they offer same resources for all users irrespective of their individual needs and preferences. Students learn according to their learning styles and determining these is a crucial step in making eLearning or traditional education adaptive. To determine learning styles, learning models have been suggested in literature, but there is no readily available software tool that provides the flexibility to select and implement the most suitable learning model. To fulfil this dire need, a framework of a tool is proposed here, which takes into consideration multiple learning models and artificial intelligence techniques for determining students' learning styles. The tool would provide the facility to compare learning models, to determine the most suitable one for a particular environment. It is suggested that this tool be deployed in a cloud environment to provide a scalable solution that offers easy and rapid determination of learning styles.

Keywords: Smart education; Artificial intelligence; Learning styles; Felder & Silverman; Kolb; Adaptive learning, Decision trees, Perceptrons

* Corresponding author. Tel.: +91-9899-630-501
E-mail address: richa.kbajaj@gmail.com



10.1016/j.procs.2018.05.095

Study of newly appeared γγ band in $^{104\text{-}108}$Mo

*M. Singh[1], Mani Varshney[2], Y. Singh[3], A K Varshney[4] and K. K. Gupta[5]

[1]*Department of Physics, Greater Noida Institute of Technology, Greater Noida - 201306, INDIA*
[2]*Department of Physics, Krishna Institute of Engineering & Technology, Ghaziabad – 201001, INDIA*
[3]*Department of Physics, Govt. College, Shahpur, Kangra – 176205, INDIA*
[4] *Department of Physics, Govt. College, Palampur, Kangra – 176061, INDIA*
[5] *Department of Physics, Govt. College, Dhaliyara, Kangra – 177103, INDIA*

* *Email: singh.moti@gmail.com*

Introduction

The neutron rich molybdenum isotopes around A ≈ 100 are found to exhibit different kind of nuclear structure. Thus it has always been a subject of keen interest for experimentalists and theoreticians to see whether the nucleus under consideration is axial, γ - soft or γ – rigid. Sometimes back spontaneous fission of ^{252}Cf with Gamma sphere detector array has yielded many high states in Mo nuclei including a fresh appearance of $K^\pi = 4^+$, γγ band besides the usual $K^\pi = 0^+$, yrast band and $K^\pi = 2^+$, γ band spectrum [1-3]. Modified soft rotor formula has been found successful in reproducing the energies of these various levels [4].

In the present work, we shall investigate whether a half century old predictions on the existence of $K^\pi = 4^+$, γγ band has become a reality [5]. According to ref. 2 the violation of axial symmetry of even nuclei generates two energy states for I = 2 (2_1^+, 2_2^+) one for I = 3 (3_1^+) three for I = 4 (4_1^+, 4_2^+, 4_3^+), two for I = 5 (5_1^+, 5_2^+), four for I = 6 (6_1^+, 6_2^+, 6_3^+, 6_4^+) etc corresponding to the rotation of the nucleus. 2_1^+, 4_1^+, 6_1^+ ..... make yrast band, 2_2^+, 3_1^+, 4_2^+, 5_1^+, ... make gamma band while 4_3^+, 5_2^+, 6_3^+ ..... make γγ band. Yrast band is normal while the other to bands i.e. γ band and γγ band are anomalous bands. We shall evaluate the values of energy of the levels of observed spectrum within the framework of Asymmetric Rotor Model (ARM) and compare them with experiment just to explore whether the nucleus under consideration are rigid or not. Since the energy predicted in ARM is large, the relative displacement of the odd spin levels with respect to even spin levels (odd – even staggering OES) will be taken as signature of nucleus being γ-rigid, γ soft or axial [6]. The staggering indices S(I) for the experimental as well as asymmetric rotor energy levels of γ – band and for γγ – band is expressed as –

$$S(I) = \frac{(E_I - E_{I-1}) - (E_{I-1} - E_{I-2})}{E2_1^+}$$

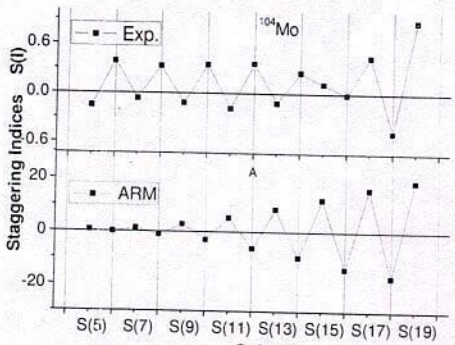


Fig. 1 (a)

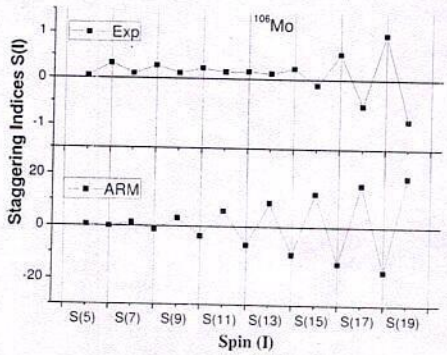


Fig. 1 (b)

On electric Quadrupole Transition between rotational states of $^{188\text{-}192}$Os

*Y. Singh [1], Mani Varshney[2], M. Singh[3], A K Varshney[4] and K. K. Gupta[5]

[1] *Department of Physics, Govt. College, Shahpur, Kangra – 176205, INDIA*
[2]*Department of Physics, Krishna Institute of Engineering & Technology, Ghaziabad – 201001, INDIA*
[3]*Department of Physics, Greater Noida Institute of Technology, Greater Noida - 201306, INDIA*
[4]*Department of Physics, Govt. College, Palampur, Kangra – 176061, INDIA*
[5]*Department of Physics, Govt. College, Dhaliyara, Kangra – 177103, INDIA*

* *Email: singh.moti@gmail.com*

Introduction

There has been a long-standing debate on the nature of the spectra characterizing Osmium isotopes. Some groups consider these nuclei as being γ – soft [1, 2, 3] while others as γ – rigid asymmetric rotor [4, 5]. The equilibrium values of the asymmetric parameter γ, predicted by Lender in ref. 3 are 20^0, 20^0, 25^0 while Faessler in ref. 5 are 19^0, 22^0, 25^0 respectively for ^{188}Os, ^{190}Os, ^{192}Os. The basic parameter that distinguish the rigid rotor from γ – soft nuclei are –

$\Delta E_1[= E3_1^+ - (E2_1^+ + E2_2^+)] = 0$ and

$\Delta E_2[= E3_1^+ - (2E2_1^+ + E4_1^+)] = 0.$

The modulus of $|\Delta E_1|$ and $|\Delta E_2|$ for $^{188\text{-}192}$Os are given as $|\Delta E_1|$ = 2, 11, 5 and $|\Delta E_2|$ = 2, 171, 302 respectively. Recently the triaxiality is associated with the odd – even staggering (OES) in γ – band considering the sign of $S(4)$ and $S(6)$ which is negative in γ – soft while positive in γ – rigid [6, 7].

We have calculated these $S(4)$ and $S(6)$ signtures of γ-rigid and γ – soft nuclei and found their values to be positive in all these nuclei under consideration and are tabulated in table – I.

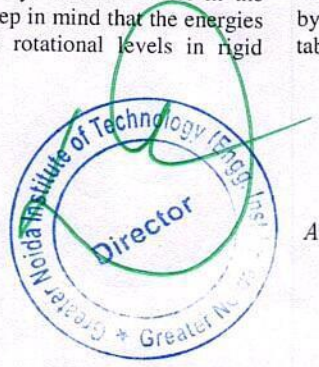
Table – I

The values of staggering indices $S(4)$ and $S(6)$ in $^{188\text{-}192}$Os nuclei

Nucl.	^{188}Os	^{190}Os	^{192}Os
S(4)	0.120	0.0096	0.055
S(6)	0.185	0.112	0.470

This observation supports our point of view underlying in the study of these nuclei in the present work. We keep in mind that the energies obtained for various rotational levels in rigid rotor model are too large and as such to bring them down the correction due to centrifugal stretching or the coriolis antipairing effect at large γ deformation with increasing angular momentum are necessary. These corrections were introduced by generalizing the variable moment of inertia by Faessler [5] or by introducing Lipas correction [8, 9] however the values of the quadrupole transitions between various rotational levels remains unaltered due to the correction applied [10]. Another parameter that comes in support of the present study is $\beta A^{2/3}$. According to Mayer – ter – vehn $\beta A^{2/3} < 4$ in vibrational nuclei and $\beta A^{2/3} > 7$ in well deformed nuclei and $4 < \beta A^{2/3} < 7$ is recommended fit for nuclei to be considered as asymmetric rotors [11]. In another approach these nuclei were taken as ideal triaxial liquid drop having $\gamma = 30^0$ and the liquid drop Hamiltonian written in intrinsic frame was separated into two terms describing the β and γ – variables. The potential in β consists of a centrifugal term and a sextic potential while the differential equation for γ as that for the Mathiew function [12] and the Osmium nuclei were treated in this Sextic Mathiew Approach (SMA).

In the present work, we evaluate the B (E2) values for $^{188\text{-}192}$Os nuclei between different rotational energy states using rigid triaxial rotor model [4 5] and list them along with the corresponding theoretical values obtained from SMA. These values are compared with the experimental data. The theoretical values of SMA and the experimental values are taken from the ref. 12 (Table – II). The values which deviate by more than a factor of two are underlined in table – II.



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Robust PID Load Frequency Controller Design with Specific Gain and Phase Margin for Multi-area Power Systems

Jitendra Sharma*, Yogesh V. Hote, Rajendra Prasad†**

*Electrical Engineering Department, Indian Institute of Technology, Roorkee, INDIA (e-mail: jitendra13.pj@gmail.com).

**Electrical Engineering Department, Indian Institute of Technology, Roorkee, INDIA (e-mail: yhotefee@iitr.ac.in).

† Electrical Engineering Department, Indian Institute of Technology, Roorkee, INDIA (e-mail: rpdeefee@iitr.ac.in).

Abstract: In interconnected power systems, the load frequency control (LFC) is considered a hugely beneficial ancillary service. The goal of the LFC in an interconnected power system is to limit the frequency of each area within certain bounds and to maintain the tie-line power flows within some pre-specified latitudes by balancing the power outputs of the generators so as to satisfy ever changing load demands. In the classical control theory, PID controller is said to be robust if it provides some specific gain and phase margin. In this paper, a novel methodology is proposed for the robust PID controller design having specific gain and phase margins for LFC in a multi-area power system. The proposed technique is based on stability boundary locus and PID controllers are designed for four-area power system having different types of turbines. The simulations are carried out using MATLAB and effectiveness of the proposed methodology is verified by the comparison with a recently published approach.

Keywords: Load frequency control, multi-area power system, PID controller, specific gain and phase margin, stability boundary locus.

1. INTRODUCTION

For the power system to be operated satisfactorily, the frequency should remain almost constant. The constant frequency enables consistent speed of synchronous and induction motors. The frequency of a system depends on the balance of active power. Since frequency is a common component everywhere in the system, a deviation in the active power demand at one point is echoed all over the system by a deviation in frequency. In an interconnected system having more than one independent control areas, frequency as well as power generation inside each area has to be regulated so as to uphold the scheduled power interchange. The control of frequency and generation is frequently mentioned as load frequency control (LFC) (Kundur, 1994).

LFC is an active area of research now-a-days. A PID controller design scheme based on the direct synthesis (DS) approach in frequency domain is presented by (Anwar & Pan, 2015). An observer based integral sliding surface is developed and a sliding mode LFC (SMLFC) controller is suggested for minimizing the frequency changes in wind power systems by (Cui et al., 2017). In (Guha et al., 2016), LFC problem has been explained in a multi-area power system where PI/PID controllers are tuned using grey wolf optimization (GWO) approach. In (Hussein et al., 2017), Proportional-Integral-Observer (PI-Observer) based state feedback controller has been synthesized for LFC problem of a single area isolated power system model. (Padhan & Majhi, 2013) estimated the power system dynamics using relay based identification technique and then a PID controller is designed for the LFC problem of single and multi-area power systems where PID controller gain parameters are acquired by enlarging the controller transfer function using Laurent series. (Prasad et al., 2017) tackled LFC problem in three area power system using nonlinear sliding mode controller (SMC) with matched and unmatched uncertainties and the proposed approach is validated on IEEE 39 bus power system. The neural network based integral sliding mode controller is used for LFC problem for nonlinear power systems with wind turbines by (Qian et al., 2016). A tilt-integral-derivative controller with filter (TIDF) is designed for LFC problem of multi-area power systems by (Sahu et al., 2016) in which TIDF controller parameters has been optimized by Differential Evolution (DE) algorithm.

A two degree of freedom internal model control (IMC) filter is designed for the LFC problem by (Saxena & Hote, 2013) in which the proposed control strategy is implemented on the reduced order model of the single-area power system. In (Saxena & Hote, 2017), IMC approach is used for the stabilization of perturbed LFC single-area and multi-area power systems and the proposed technique is further validated on the standard IEEE 39 bus system. In (Shayeghi et al., 2008), LFC problem has been solved in a restructured power system by implementing a particle swarm optimization based multi-staged fuzzy (PSOMSF) controller. In (Sondhi & Hote, 2016), a fractional order PID controller has been synthesized by taking the perturbed model of the single-area

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Constant Torque Control Schemes for PMSG Based Wind Energy Conversion System

Ankit Gupta , Yogesh Kumar Chauhan, Nidhi Singh Pal
[1&3]Department of Electrical Engineering, School of Engineering, Gautam Buddha University, Greater Noida (201312), India, Ph. +91 9899439873
[2]Department of Electrical Engineering, Kamla Nehru Institute of Technology, Sultanpur (228118), India
[1]guptaankit299@gmail.com, [2]chauhanyk@yahoo.com , [3]nidhi@gbu.ac.in

***Abstract*— In this paper, the operation of wind energy conversion system is introduced by modeling of constant torque control schemes. Proportional-Integral, Fuzzy logic and Artificial neural network based schemes are proposed to control the blade pitch angle and tip speed ratio. A MATLAB/Simulink model is developed for the wind turbine based power generation system by combining the designed controllers. The system performance is tested under different operating condition for each controller assisted wind energy conversion system and found satisfactory. Furthermore, a comparative study is made in terms of controller response and control parameters.**

Keywords*— *renewable energy, wind turbine, fuzzy logic controller, artificial neural network, constant torque controller, proportional-integral controller

I. Introduction

As the availability of the fossil fuels is declining continuously, there is an urgent need to consider the use of renewable energy (RE) sources to meet the current energy demand. Wind energy is the most promising alternative source of energy [1].

In [2], various control systems for medium & large-scale wind turbine (WT) generators have been discussed. The authors in [3] have proposed a blade pitch angle (BPA) controller using genetic algorithm, but other unconventional artificial intelligence based algorithms are not discussed. In [4], the authors have predicted the optimal tip speed ratio (TSR) and the power factor of a WT using artificial neural networks (ANN), but integration of BPA with TSR is not discussed. The authors in [5] have designed a BPA controller for aerodynamic performance optimization of a wind farm, but TSR controller is not discussed. Authors in [6] have designed real value model of WT with permanent magnet synchronous machine (PMSG), BPA and TSR controller are not discussed.

The comparison of PI, FL and ANN based constant torque control schemes for BPA and TSR has not been reported to the best of author's knowledge.

The research addition of this paper is to present a comprehensive analysis of PI, FL and ANN based constant torque control schemes for BPA and TSR of WT. Three cases are considered as BPA or TSR is controlled independently; and both BPA and TSR are controlled.

II. System Description and Dynamic Modeling of WECS

The system under investigation is shown in Fig. 1 as:

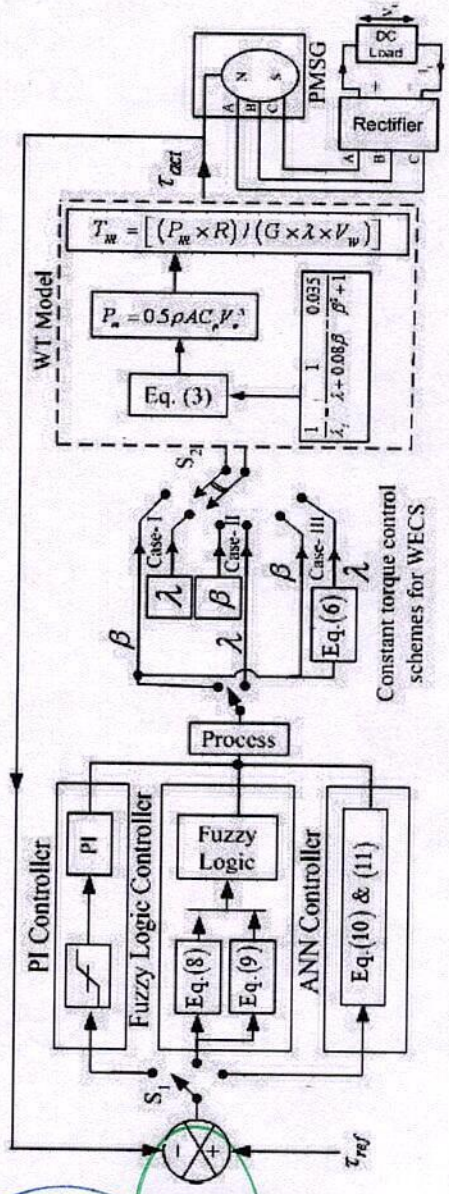

Fig. 1. PI/FL/ANN based constant torque control schemes for WECS