

## CURRICULUM VITAE

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### Career Objective:

To associate myself to work in to reputed organization that gives scope to update my knowledge and skills in accordance with latest trends and to be a part of a team that dynamically works towards the growth of organization.

### Education:

- **PhD Specialization in Electrical Power Systems** at Kumar Bhaskar Varma Sanskrit and Ancient Studies University (2012-2015), Assam, India.
- **M.Tech** (Electrical & Electronics Engineering) Specialization in **Electrical Power Systems**. Affiliated to JNTU (Hyderabad) (January 2011)
- **B. Tech** (Electrical & Electronics Engineering) From Nimra College of Engineering, Vijayawada, Affiliated to JNTU (Hyderabad)

### International Book Publications:

1. Published a **book** on "**Electrical Machines**" by Lambert publications Germany in 2013.

### International Article Publications:

1. Published an article titled "**Travelling Waves for Finding the Fault Location in Transmission Lines**" in International Journal (JEEE) by Science PG U.S.A. in 2013.
2. Published an article titled "**Transient Stability Improvement of Multi-machine Power System using Fuzzy Controlled TCSC**" in IOSR, (2014).
3. Published an article titled "**Reactive Power Correction Using Distributed Static Synchronous Compensator**" in ELIXIR Journal, (2014).
4. Published an article titled "**The Improvement on the System Robustness through Power Management System**" in International Journal of Latest Research in Science and Technology, (2014).
5. Published an article titled "**Experimental Study of Photo Voltaic Systems and Converters**" in International Journal TJPRC, 2015.
6. Published an article titled "**Experimental Study of Photo Voltaic Systems and Converters**" in Middle-East Journal of Scientific Research IDOSI, 2015.

7. Published an article titled “**Positioning and Adjusting the Frequencies of the Rotor in Permanent Magnet Synchronous Machine to achieve high performances**” in IJAER, RIP 2015.
8. Published an article titled “**Multivariable State Feedback Control of Three-phase Voltage Source PWM Current Regulator**” in Middle-East Journal of Scientific Research IDOSI, 2016.
9. Published an article titled “**A Low cost PMSG topology and control strategy for small-scale wind power generation systems**” in IJESRT, 2016.
10. Published an article titled “**Localisation of Fault Using Travelling Wave Theory Based on Multi-End System**” in IJAER, 2017.
11. Published an article titled “**Performance Analysis and Optimization of a Parabolic Trough Solar Power Plant in the Middle East Region**” in ENERGIES, 2018.
12. Published an article titled “**Potential of Solar Collectors for Clean Thermal Energy Production in Smart Cities using Nanofluids: Experimental Assessment and Efficiency Improvement**” in Applied Sciences, 2019.

#### **Reviewer IEEE Potential:**

1. Reviewed an article ID POT-2014-0065 titled "**Location and Characterization of Faults in Coaxial Cables Using Reflectometry and Impedance Spectroscopy**" for the **IEEE Potentials** in Sept 2014.
2. Reviewed an article POT-2015-0045 titled "**ANFIS Based Novel Technique to Locate Transmission Line Faults for Resilient Power System**" for the **IEEE Potentials** in Sept 2015.
3. Reviewed an article ID 7156110-14 titled "**Fault Classification and Location in Transmission Lines Using Traveling Waves Modal Components**" for the **Indian Journal of Science and Technology** in Oct 2015.
4. Reviewed an article ID POT-2015-0045.R1 titled "**A Wavelet - Adaptive Network Based Fuzzy Inference System for Location of Faults in Parallel Transmission Lines**" for the **IEEE Potentials** in Jan 2016.

#### **Teaching Experience:**

2001 – 2007: Worked as **Asst Professor** in Hi-point College of Engineering & Technology, Hyderabad.

2007 - 2012: Worked as **H.O.D (Asst Professor)** & Exams In-charge at Chilkur Balaji Institute of Technology, Hyderabad.

2012 to till I am working as a lecture in EE Department in College of Engineering at MAJMAAH University, K.S.A.

#### **Certification:**

- Award of Excellence for teaching Engineering Graduates.
- Paper presentation Certificates during teaching.
- D2L Training certificate.

#### **Academic Committees:**

- Member of **Documentation and Archiving Committee**
- Member of **Lab Development Committee**

- Member of **Research Committee**
- Member of **Teaching Quality Assurance Committee**
- Member of **Undergraduate Coordination Committee**
- Member of the **Undergraduate Research and Assistance Committee**

### **Research(s):**

- A Research is going on “**WIRELESS POWER TRANSMISSION**”. The aim of this paper is to introduce a new system of transmitting the power which is called wireless electricity or **WiTricity**. **WiTricity** is based upon coupled resonant objects to transfer electrical energy between objects without wires. The system consists of a **WiTricity transmitter** (power source), and devices which act as **receivers** (electrical load). It is based on the principle of resonant coupling and microwave energy transfers. The action of an electrical transformer is the simplest instance of wireless energy transfer. There are mainly two types of transfers i.e. short range and long-range transmission. The short range are of 2-3metres whereas the long range are of few kilometers.
- “**Fuzzy logic by using conventional control methods**” Fuzzy logic has rapidly become one of the most successful of today’s technologies for developing sophisticated control systems. The reason for which is very simple. Fuzzy logic addresses such applications perfectly as it resembles human decision making with an ability to generate precise solutions from certain or approximate information. It fills an important gap in engineering design methods left vacant by purely mathematical approaches (e.g. linear control design), and purely logic-based approaches (e.g. expert systems) in system design.
- A Research is going on “**Localizations of Transmission line faults using Travelling wave Theory with wavelet transforms.**” An electric power system comprises of generation, transmission and distribution of electric energy. When a fault occurs on a transmission line, the voltage at the point of fault suddenly reduces to a low value. This sudden change produces a high frequency electromagnetic impulse called the travelling wave (TW). These travelling waves propagate away from the fault in both directions at speeds close to that of light.

### **Practical Profile:**

- Handled subjects like Electrical Machines-I and Machines –II for Engineering students in B. Tech level
- Installation of laboratories like Electrical technology, Measurements, AC Machines, DC Machines.
- Handled simulation labs for B. Tech students during Projects.
- When I taught power systems-I I secured 100% pass result in particular subject.
- Successfully Installed the D.C Motors and D.C Generators in the campus.
- Seminars have been given on the above topics.

### **Projects Handled:**

- **Multipurpose power Generator:** It is an ingenious product which works on conversion of mechanical energy to electrical energy with optimum efficiency. This

project has been successfully done with the help of bicycle it consists of an alternator, battery and circuit components such as DC Voltmeter and Galvanometer.

- **Circuit Breaker maintenance by software technology:** The maintenance of circuit breakers deserves special consideration because of their importance for routine switching and for protection of other equipment. Electric transmission system breakups and equipment destruction can occur if a circuit breaker fails to operate because of a lack of a preventive maintenance. The need for maintenance of circuit breaker is often not obvious as circuit breakers may remain idle, either open or closed, for long periods of time. Breakers that remain idle for six months or more should be made to open and close several times in succession to verify proper operation and remove any accumulation of dust or foreign material on moving parts and contacts.
- **Robotic control using fuzzy logic:** Automatic guided vehicle or mobile robots is an intelligent machine that has intelligence to determine its motion starts according to the environment conditions. Fuzzy logic can help design robust individual behaviors units. Fuzzy logic controllers incorporate heuristic control knowledge.

#### **Paper presentation attended:**

- **DC Motor Speed Control Fuzzy Approach:** This paper presents an insight into the speed control of D.C motor using a fuzzy logic controller to meet the desired speed. Fuzzy logic is one of the most successful applications of fuzzy set in which the variables are linguistic rather than numeric.
- **Real Time Power System Security:** This paper presents a topology error identify algorithm capable of processing networks modeled at substation level. To improve the efficiency of the method a cosine tests is used.
- **Recent Trends in Power System Operation and Control:** The paper reviews th key issues and design considerations for the present and new generation of SPS & emergency control schemes and evaluates the strategies for their implementation. Wide area protection; Power system blackouts; Phasor measurements; Voltage stability; Angular stability; Out-of-step relaying.
- **FACTS and control:** A flexible alternating current transmission system is a system composed of static equipment used for the AC Transmission of Electrical Energy. It is meant to enhance controllability and increase power transfer capability of the network. It is generally a Power electronics-based system
- **SCADA:** Acronym for supervisory control and data acquisition, a computer sys for gathering and analyzing real time data. SCADA systems are used to monitor and control a plant or equipment in industries such as telecommunications, water and waste control, energy, oil and gas refining and transportation
- **AC to DC Converter:** Converters which convert the alternating current (AC) from the mains to a direct current (DC) are used in a great variety of applications, for example, such as controlling DC motors for household or industrial use (e.g., in washing machines, refrigerators, dishwashers, industrial machines). Such converters are also known as "Switch Mode Power Supply" (SMPS). AC to DC

- converters generally comprise a rectifier bridge to rectify the AC current of the input line and a regulating device supplying on output of one or more regulated
- **Transmission lines:** A Transmission Line is a device designed to guide electrical energy from one point to another. It is used, for example, to transfer the output rf energy of a transmitter to an antenna. This energy will not travel through normal electrical wire without great losses.
  - **Automatic speech Recognition System:** Automatic Speech Recognition (ASR) is technology that allows a computer to identify the words that a person speaks into a microphone or telephone. The "holy grail" of ASR research is to allow a computer to recognize in real-time with 100% accuracy all words that are intelligibly spoken by any person, independent of vocabulary size, noise, speaker characteristics and accent, or channel conditions.
  - **Wireless Transmission of Electricity:** Wireless energy transmission, is the process that takes place in any system where electromagnetic energy is transmitted from a power source (such as a Tesla coil) to an electrical load, without interconnecting wires. Wireless transmission is employed in cases where interconnecting wires are inconvenient, hazardous, or impossible.
  - **Non-Conventional Energy Sources Waste to Electrical Energy:** The demand for power has gradually increased. Hence the burden on the countries, especially developing countries like India have increased to meet the demands in the present day. Most of the demands are met by conventional sources such as fossil fuels, hydal, nuclear power etc. The use of these sources has not only resulted in their depletion. But also increased the population. Hence there is a great need for improving technology in the use of non-conventional sources of energy which could greatly decrease the environmental needs, and which would assure the future needs particles to rural people at affordable rates.
  - **Special purpose machines:** Day by day the interest on special machines increases. Because these machines serve for several applications. For instance, the nano generator could drive biological sensors by making use of wind energy or water flow, eliminating the need for external batteries. This not only reduces the device cost but also at the same time reduces the entire equipment size.

### **Project during B-Tech:**

#### **Induced Draft (ID) fans and Forced Draft (FD) fans proposed to improve the plant efficiency and save the energy for global interest.**

##### **Description:**

The Induced Draft (ID) fans and Forced Draft (FD) fans provide control for draft and forced air zoning of fuel burned furnaces of steam generation plant of a thermal power plant. The ID fan exhausts flue gases from the furnace and induces combustion air into the furnace by having the furnace operated under negative pressure. Forced Draft (FD) fans are used for supplying the combustion air into the furnace of a boiler. A good design of fan and its control system increases plant reliability by improving furnace pressure control and airflow control, which is most critical control part of combustion control system. In the present paper, the performances of the typical ID fans in the steam generation unit of a naphtha and natural gas based captive power plant have been studied. From the online data of a running plant, it has been observed that the considerable part of the losses in the ID

fan is due to the over design than the present requirement and also the older design is another cause of low efficiency. So, from this performance calculation of ID fan a better design of a fan has been proposed to improve the plant efficiency and save the energy for global interest. Transmission lines are considered the most vital components in power systems connecting both generating and consumer areas with huge interconnected networks. They consist of a group of overhead conductors spreading in a wide area in different geographical and weather circumstances.

### **Project during M-Tech:**

#### **Transient Stability Improvement of Multi-machine Power System using Fuzzy Controlled TCSC**

##### **Description:**

Power system is subjected to sudden changes in load levels. Stability is an important concept which determines the stable operation of power system. In general rotor angle stability is taken as index, but the concept of transient stability, which is the function of operating condition and disturbances deals with the ability of the system to remain intact after being subjected to abnormal deviations. A system is said to be synchronously stable (i.e., retain synchronism) for a given fault if the system variables settle down to some steady-state values with time, after the fault is removed. For the improvement of transient stability, the general methods adopted are fast acting exciters, circuit breakers and reduction in system transfer reactance. The modern trend is to employ FACTS devices in the existing system for effective utilization of existing transmission resources. These FACTS devices contribute to power flow improvement besides they extend their services in transient stability improvement as well. In this thesis, in order to improve the Transient Stability margin further series FACTS device has been implemented.

### **Dissertation during PhD:**

#### **The Improvement on the System Robustness through Power Management System**

A power system converts, transmits, and controls energy to perform useful work. Power systems are usually large non-linear systems, which are often being subjected to low frequency electromechanical oscillations. Latest innovative ideas to make the life easier using the technology depends upon the application of the power electronics in turn about power quality. With increasing the quantities of non-linear loads being added to electrical systems, it has become necessary to establish criteria for limiting problems from system voltage degradation.

One of the major problems observed in the distribution system in recent days is Power Quality. Today most of the people are using the sophisticated electrical equipment's based on the semiconductor device, this equipment pollutes the power quality. The sag and swell problem not only occur by the disturbed power quality but also due to the high system tapping at the point of common coupling in the system. The nonlinear load is also creating same problem at the load end.

This thesis presents the power quality problems, issues, related international standard, effect of power quality problem in different apparatuses and methods for its correction, which is a technology management and to improve the robustness of the power system by managing power management system. The power Quality issues associated with the isolated, transportation, stand alone, or decentralized power systems are becoming more complex and requiring additional consideration as more advanced generation and load-controlled techniques are utilized.

Power System Stabilizers (PSSs) are often used as effective and economic means for damping the generators' electromechanical oscillations and enhance the overall stability of the power systems. Power system stabilizers have been applied for several decades in utilities and they can extend power transfer stability limits by adding modulation signal through the excitation control system. Sliding mode control is one of the main methods employed to overcome the uncertainty of the power system. This controller could be applied very well in presence of both parameter uncertainties and unknown nonlinear function such as disturbance.

Power system stabilizer (PSS) controller design, methods of combining the PSS with the excitation controller (AVR), investigation of many different input signals and the vast field of tuning methodologies are all part of the PSS topic. To enhance stability and improve dynamic response of the system operating in faulty conditions a Fuzzy based Sliding Mode Control PSS is developed for a multi-machine system with two generators and it is compared with the Conventional PSS, Fuzzy based PSS, Sliding Mode based PSS.

**Technical Skills:**

Operating System: Windows 98, Windows2000, Windows NT, Windows XP  
Packages : P-Spice, MATLAB, Multi-Sim, C, Ms-Office

**Area of Interest:**

1. Electrical Technology
2. Power Systems
3. Electrical Machines
4. Power Electronics
5. Electrical Measurements
6. Control Systems
7. Electrical Circuits
8. Utilization of Electrical Energy
9. Distribution System
10. Power System Operation Control
11. HVDC

**Extra-Curricular Activities:**

1<sup>st</sup> prize in technical quiz at college level  
1<sup>st</sup> prize in seminar at intra and inter college level

**Personal Profile:**

Name : Mohammad Abdul Baseer  
Father's Name : Sabir Subhani  
Marital status : Married  
DOB : 10-06-1977  
Passport Number : L0011198  
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K.S.A

**Declaration:**

I consider myself familiar with Electrical Engineering aspects. I am also confident of my ability to work in a team. I here by declare that the information furnished above is true to the best of my knowledge.

Date:

Place:

Mohammad Abdul Baseer