CURRICULUM VITAE (ABBREVIATED VERSION)

NAME: AKHTAR KALAM

PERMANENT ADDRESS:

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CORRESPONDENCE:

School of Engineering and Science
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PRESENT POSITION:

PROFESSOR – School of Engineering and Science

QUALIFICATIONS:

The University of Bath, Bath, UK, 1978-1981, PhD, Electrical Engineering
The University of Oklahoma, Norman, USA, 1974-1975, MS, Electrical Engineering
Aligarh Muslim University, Aligarh, India, 1969-1973, BScEng, Electrical Engineering
St Xavier's College, Calcutta, India, 1966-1969, BSc, Applied Science

PROFESSIONAL QUALIFICATIONS:

Engineers Australia – Fellow
The Institution of Engineers and Technology, UK – Fellow
The Institution of Electrical and Electronic Engineers, USA - Member

CHRONOLOGICAL LIST OF POSITIONS AND INSTITUTIONS:

1991 - to date **Victoria University, Melbourne, Australia:** Professor of Electrical Engineering (since 1997), School of Engineering and Science; Deputy Dean (1999 - 2006), Faculty of Health, Engineering & Science; Head of Werribee Group of Campuses of Victoria University (2000 – 2004), Associate Professor (till 1996); Senior Lecturer (till 1992); Research Director (till 1997); Course Director for Master's by coursework program (till 1992); Research grants and incentives of around $1.5 million (over the last 5 years) has been obtained from both internal to the University and very competitive external bodies

1990 – 1990 **City University, London, UK:** Senior Research Fellow (on PEP/ OSP program); research in Fault Location of Plain and Teed Feeders

1984 – 1990 **Footscray Institute of Technology, Melbourne, Australia:** Senior Lecturer (since 1987); Lecturer (till 1986)

1982 – 1984 **Capricornia Institute of Advanced Educations, Rockhampton, Australia:** Lecturer

1976 – 1978 **University of Technology, Baghdad, Iraq:** Assistant Lecturer

1975 – 1976 **Ingersoll-Rand, Calcutta, India:** Sales Engineer

1973 – 1974 **J.K. & Brothers, Calcutta, India:** Sales Engineer

PUBLICATIONS:

29 Books/Continuing Education Course Materials
13 Chapter in Books
2 Invited Articles in Magazine
26 Keynote Presentations
56 Papers in Refereed Journals
208 Conference papers in Refereed Proceedings
14 Seminar papers in Non-Refereed Proceedings
1 Patent

CURRICULUM VITAE

Professor Akhtar Kalam
BSc, BScEng, MS, PhD, FIEAust, CPEng, FIET, CEng, MIEEE

EXECUTIVE SUMMARY:

Professor Akhtar Kalam is a Professor of Electrical Engineering in the School of Engineering and Science at Victoria University, Melbourne, Australia.

He has been Deputy Dean of the Faculty of Health, Engineering & Science at Victoria University for 7 years since 1999.

He has wide experience in educational institutions and industry across four continents.

He has conducted research, provided consultancy and has over three hundred eight publications primarily on power system protection and independent power generation.

His key attributes include:

- High academic qualifications in Electrical Engineering. He was the recipient of the Cleo Cross International Scholarship and the University of Bath Scholarship.

- High professional qualifications in Electrical and Electronic Engineering, (CPEng; CEng; FIEAust; FIET and MIEEE).

- The capacity to manage teaching, research, industry and consultancy.

- The ability to conduct professional educational development courses to the industry.

- Chair of the Australasian Committee Power Engineering

- Convenor of the Engineers Australia's Course Accreditation of the engineering undergraduate courses at Victoria University.

- Chaired number of accreditation committees for Engineering Australia for the grant of necessary approvals to run undergraduate engineering programs in various universities in Australia.

- The potentiality to learn and adapt quickly to new environments, cultures and government approaches to education, training and research.

- Award Recipient under the category of "Financial and Social Contribution", celebrating excellence in the field of projects/initiatives beneficial to the Australian Muslims in Australia, and in particular, Victoria.

- Successful leadership of change processes in systems and organisations.

- The skills to communicate effectively and with a good sense of humour.

- The respect of his colleagues nationally and internationally in his field of expertise.

Akhtar KALAM

Employment Address & Contact Information

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NATIONALITY: Australian

CURRENT POSITION:

Professor,
School of Engineering and Science
Victoria University, Melbourne, Australia

EDUCATION/QUALIFICATIONS:

1981 PhD, Electrical Engineering, the University of Bath, Bath, UK.
Title of thesis: Fault transient analysis and simulation of series compensated ehv transmission lines and associated protective gear.

1975 MS, Electrical Engineering, the University of Oklahoma, Norman, USA
Title of minor thesis: Cost comparison of energy transported electrically and by rails between a mine station in Wyoming and Oklahoma City, a distance of 850 miles.

1973 BSc Eng, Electrical Engineering, Aligarh Muslim University, Aligarh, India
Title of project: Design and fabrication of an artificial transmission line.

1969 BSc, Pure Science, St Xavier's College, Calcutta, India

1966 Pre-University, St Xavier's College, Calcutta, India

1965 School Final, Don Bosco School, Calcutta, India

PROFESSIONAL QUALIFICATIONS:

Chartered Practicing Engineer, Engineers Australia, Australia
Chartered Engineer, Engineering Council, UK
Fellowship, Engineers Australia, Australia
Fellowship, Institution of Engineering and Technology, UK
Member, Institution of Electrical and Electronic Engineers, USA

SERVICE ON PROFESSIONAL AND NATIONAL COMMITTEES:

Advisory Council Member, **the Australian Electrical and Electronic Manufacturers' Association (AEEMA)**, representing the Australian Vice Chancellors' Committee (AVCC), 2004 – 2008

Chair (2007-2009) and currently member of the **Australasian Committee Power Engineering (ACPE)**

Director and Victoria University's Representative on the **Australian Telecommunications Cooperative Research Centre (AT_{crc})**, 1999 – 2006

Director and Victoria University's Representative on the **National Networked Teletest Facility (NNTTF)**, 2002 - 2007

Convenor, **ESAA Residential School Advisory and Management Committee**, 2002 –2006

Associate Editor, **Journal of Electrical and Electronics Engineering, Australia,** 2008 -

Guest Editor, "Special Issue on Power Engineering", **Journal of Electrical and Electronics Engineering, Australia,** 1999 - 2009

Guest Editor, Special Issues on AUPEC'00, **International Journal of Renewal Energy Engineering,** 2 (1), 2000

Member, **Chipskills Advisory Committee**, 2000 – 2006

Member, **Chipskills Management Committee,** 2000 – 2006

President, **IET, Victoria,** 2000 – 2002

Member, **CIGRE – Australian Panel B5**, 2000 –

Secretary, **3rd International Conference on Modelling and Simulation**, 1997

Treasurer, **Australian Council of Power Engineers**, 1996 – 2000

General and Technical Chair, **Australasian Universities Power Engineering Conference**, 2006

Technical Chairman, **Australasian Universities Power Engineering Conference**, 1996

Co-chairman, **2nd International Conference on Modelling and Simulation**, 1993

Vice-Chairman (Secretariat), **Australasia Universities Power and Control Engineering Conference**, 1991

Committee Member, **IET, Victoria**, 1990 – 2000

Secretary, **Electrical and Electronic Engineering Education (Power and Control) Group**, 1990 – 1994

Director, **Australian Cogeneration Association,** 1990 – 1994

Vice-President, **Australian Cogeneration Association**, 1990 – 1993

Co-chairman, **Pacific Region Conference in Electrical Engineering Education**, 1990

Committee Member, **the International Association for the Advancement of Modelling and Simulation in Enterprise**, South Pacific Group, 1987

Committee Member, **1st International Conference on Modelling and Simulation, Melbourne**, 1987

Committee Member, **Electrical Power Heads in Victoria**, 1985 – 1995

CHRONOLOGICAL LIST OF POSITIONS AND INSTITUTIONS:

1997 – present	**Victoria University, Melbourne, Australia**
	Professor, School of Engineering and Science
1999 – 2006	Deputy Dean, Faculty of Health, Engineering & Science
2000 – 2004	Head of Werribee Group of Campuses at Victoria University
1997 – 1999	Head of Department
1997 -	Promoted to Professor
1993 – 1997	Research Director
1996 -	Promoted to Associate Professor
1991 – 1992	Director for Master's by course work programme
1991 – 1995	Senior Lecturer

Duties as a Deputy Dean:

- deputise for the Dean during periods of his absence and for other occasions;
- coordinate the day to day affairs of the Faculty;
- advise the Dean on academic affairs;
- undertake teaching and research;
- on behalf of the Dean manage and monitor the Faculty's resources;

- monitor Faculty expenditure, derived from the operating grant, external grants, research and other contracts and trust funds, against approved financial delegations for physical resources;
- promote equal opportunity in employment and education in the Faculty;
- advise the Dean in coordinating the planning within the Faculty, in particular to assist in updating the Faculty's strategic plan in line with the University's strategic plan;
- ex-officio member of Dean's Advisory Committee and Faculty Board of Studies; Dean's nominee on Academic Progress Committee, Faculty Undergraduate and Coursework Programs Committee, OSP Committee of the Faculty, Faculty Organisational Change Consultative Committee, Workload Board of Review and Faculty Publicity Committee;
- member of selection committees for appointment of academic and general staff of the Faculty and a member of Faculty Academic Promotions Committee;
- assist the Dean in promoting the Faculty within the region, nationally and internationally;
- undertake duties or projects as determined from time to time by the Vice-Chancellor, Deputy Vice-Chancellors, Pro Vice-Chancellors or the Dean.

2008 – 2010 **Faculty of Electrical Engineering, Universiti Malaysia Perlis, Malaysia (Concurrent appointment)**

External Examiner; 2 weeks in a semester; facilitating planning, research and undergraduate processes that are relevant to undergraduate examinations.

2008 **Faculty of Electrical Engineering, Universiti Teknologi Malaysia, Malaysia (Concurrent appointment)**

Distinguish Visiting Professor; 2 weeks; evaluate Electrical Engineering courses; academic accreditation and recognition, present seminar, develop postgraduate programs, co-supervise postgraduate students and establish the Quality Management System.

2008 **Faculty of Electrical Engineering, Universiti Teknologi MARA, Shah Alam, Malaysia (Concurrent appointment)**

Visiting Professor; 2 weeks; evaluate Electrical Engineering courses; academic accreditation and recognition, present seminar, develop postgraduate programs, co-supervise postgraduate students and establish the Quality Management System.

2008 – present **Australian Journal of Electrical and Electronic Engineering (Power and Energy Systems), Engineers Australia (Concurrent appointment)**

Associate Editor; work closely with the Editor who assigns submitted papers in the relevant area to the Associate Editors through the Editorial Manager System (EMS) used by Engineers Media to manage submitted paper.

2004 – present **Scienceworks, Melbourne, Australia (Concurrent appointment)**.

Research Associate; research and consulting activities in the High Voltage Theatre at Scienceworks.

2000 – 2004 **Head of Werribee Group of Campuses**

Provide leadership and senior point of contact for the staff and the community across a range of activities, issues and interests, which include:

- participating in the works of the Campus Committee;
- articulating and advocating general direction for the development of the Werribee Group of Campuses;
- assisting with the development of proposals for new activities, and facilitating the implementation of ongoing activities, which strengthen the Werribee Group of Campuses within the university and in the community;
- assisting in attracting high profile events to the Werribee Group of Campuses and act as host for such events.

1996 – 1999 **Faculty of Electrical Engineering, Universiti Teknologi Malaysia, Malaysia (Concurrent appointment)**

Visiting Professor; 2 weeks in a semester; evaluate Electrical Engineering courses; establish the Quality Management System.

1990 – 1990 **City University, London, UK (Concurrent appointment)**

Senior Research Fellow (on PEP/ OSP programme); research in Fault Location of Plain and Teed Feeders; develop the analysis; simulate the primary waveforms using Electro Magnetic Transient Program (EMTP); work on the secondary programme for fault locator and validated the results.

1984 – 1990 **Footscray Institute of Technology, Melbourne, Australia**
1986 – Promoted to Senior Lecturer
1986 – 1990 Course Director for Master's by coursework programme
1984 –1986 Lecturer

Teach undergraduate and postgraduate electrical engineering subjects viz. Electrical Circuits, Electrical Machines, Power System Analysis, Power System Protection and supervise projects.

1982 – 1984 **Capricornia Institute of Advanced Educations, Rockhampton, Australia**

Lecturer; teach associate diploma, undergraduate and postgraduate electrical engineering subjects viz. Network Theory, Linear Systems Theory, Power System Analysis, Power System Protection, Engineering Mathematics and supervise projects.

1976 – 1978 **University of Technology, Baghdad, Iraq**

Assistant Lecturer; teach undergraduate electrical engineering subjects viz. Circuit Theory, Power System Analysis, Power System Protection, Engineering Mathematics, supervise projects and conduct undergraduate and postgraduate High Voltage and Power System Laboratory; also assist in building up the High Voltage Laboratory.

1975 – 1976 **Ingersoll-Rand, Calcutta, India**

Sales Engineer; study the air requirements of various consumers and suggest suitable compressors.

1973 – 1974 **J.K. & Brothers, Calcutta, India**

Sales Engineer; supervise the electrical and control installation at various commercial sites and suggest improvements.

OTHER RELEVANT EXPERIENCE:

Co-ordinator, Smart Energy Research Group
Chair, Faculty's Course Approvals Committee
Chair, Faculty's International Committee
Chair, Faculty's Publicity Committee
Chair, Faculty's Postgraduate Studies Committee
Program Leader for Program 6 – Commercialisation and Technology transfer
Member of the University's Learning and Teaching Strategy Working Group
Faculty's representative on the University Postgraduate Studies Committee
Faculty's representative on the University Marketing Committee
Faculty's representative on the University Course Approvals Committee
Ex-officio member of the Dean's Advisory Committee
Ex-officio member of the Faculty's Board of Studies
Nominee of the Dean on various other committees
Convenor of the Engineers Australia's Course Accreditation of the engineering undergraduate courses at Victoria University
Chairing number of accreditation committees for Engineering Australia for the grant of necessary approvals to run undergraduate engineering programs in various universities in Australia
Establishing and adopting the Quality Management System in the Faculty of Health, Engineering & Science
Principal Investigator and Project Manager of major research incentives from energy sector industries
Project Manager of Save Energy Research (SER) Group
Providing academic leadership in the energy area
Development and modification of undergraduate and postgraduate courses
Liaison with industries
Preparation of submissions for grants in the key research area of Telecommunication and Microelectronics on behalf of the Faculty
Teaching in the ESAA's continuing education programmes on Power System Protection, Cogeneration and Gas Turbine Operation and Grid Connected Systems
Conducting ESAA's distance education course on Power System Protection
Supervising postgraduate projects/ theses as Principal and Co-supervisor

CONSULTANCY and INDUSTRIAL CONTACTS:

Several joint projects have been carried out with the electricity supply industry and other staff members with the Department. Close links with various personnel of different organizations have been developed and are listed as follows:

SPAusnet – Victoria – Mr. Narendra Balvally
SPI PowerNet – Victoria – Dr Adam Klebanowski, Mr. Alex Palmarczuk

Powercor Australia – Mr. Bob Coulter
Pacific Power – Mr. Stephen Boroczky, Mr. Harvey Bell
Western Power – Mr. Harry McDonald
AGL – Mr. Colin Harrison, Mr. Ed Piegel
Flexible Drive Agencies – Mr. Kevin Murray
Nielsen Electric – Mr. Nahidh Karim, Mr. Vincent Ceravolo
Port Melbourne City Council – Mr. Bob Maker
Energy Research and Development Corporation – Mr. Merv Johnston, Mr.Griff Rose
Energy Supply Association of Australia – Mr. Allan Spicer, Mr. Ken Simms, Mr. Lawrence Bolton, Mr. Patrick McMullen
Monash University – Professor Bob Morrison, Professor Peter Wallace
RMIT – Associate Professor Majid Al-Dabbagh
University of Western Australia – Professor Derek Humpage, Associate Professor T.T. Nguyen, Professor Kit Po Wong
University of Central Queensland – Associate Professor Ward Oghana, Mr. Seshaprasad, Mr. Jack Sandell
University of Bath, UK – Professor Allan Johns, Professor Raj Aggarwal, Dr Philip Moore, Dr M Elkateb
Indian Institute of Technology Delhi, India – Professor Jagdish Nanda, Professor Dash Kothari
Crescent Engineering College, India – Professor Peer Mohammed
National University of Science & Technology, Pakistan – Lt General Shujaat Hussain
Universiti Teknologi, Malaysia – Professor Hashim Saibon, Associate Professor Mohammad Zin
King Abdulaziz University, Saudi Arabia – Dr Anwar Ali Mufti
King Fahd University of Petroleum and Minerals, Saudi Arabia – Dr M. H. Swehdi
University of Jordan, Jordan – Professor D.M. Dalabeih, Associate Professor H.M. Hamdan, Associate Professor G Halasa

I have been invited by the media to comment on my work. Also I have chaired a number of sessions both at national and international levels in conferences and seminars. I have also given useful feedback to national and international review committees. I have been invited to give views both on personal capacity as well as a consultant by a number of electricity supply related companies. As a consultant each of the projects has brought earning from $2,000 to $25,000 to the university. A list of my current consultancies as follows:

Flexible Drive Agencies – **Testing of windscreen motors from different suppliers**

Baker & McKenzie Solicitors – **Concepts of cogeneration in relation to arbitration between Smithfield and Integral**

Agility Management Pty Ltd – **Study into commercialization of microturbines**

Powercor Australia – **Development of a practical hybrid energy system**

Powercor Australia – **Dairy Farm Demonstration Package**

CSIRO Manufacturing Science and Technology – **Fuel Cells for cogeneration purpose**

Department of State and Regional Development – Business Growth Program – **Solar Network**

Brunswick Energy & Environmental Services – **Freeway Photovoltaic Project**

Northern Territory Power and Water Authority – **Low frequency induction and earth potential rise analysis for telecommunications coordination**

Kennedy-Taylor (Vic) Pty Ltd – **ABC Southbank Substation harmonics calculations**

State Electricity Commission of Victoria – **Review and report on the significant neutral harmonic currents present when a 415 V, 487.5kVA generator is operated in parallel with the SECV system**

Ballarat Base Hospital – **Review of cogeneration protection at BBH rated 22kV/415V**

Toussaint & Richardson Pty Ltd – **Combined Differential/ REF protection for 27MVA, 132/23.3kV transformer including earthing transformers**

Kvaerner Boving (ANZ) Pty Ltd – **Minimum protection and cost for small stand-by generators (440 – 600 kW)**

Footscray City Council – **Analysis for protection requirements for LV and HV generators in parallel with utility distribution network**

BHP Steel – **Knowledge based system for transformer protection design**

ASEA Brown Boveri – **Review of transmission protection system and fault locators**

Nielsen Industrial Electronics Pty Ltd – **Digital Energy Meters**

Crescent Engineering College, India – **Faculty of Engineering infrastructure**

National University of Science and Technology, Pakistan – **Review the engineering programmes**

RESEARCH INTERESTS:

My current research topics are:

1. Power transmission and distribution networks utilising underground cables
2. Performances of Distribution Transformers
3. Development of Hybrid Energy Systems
4. Artificial Intelligence and its application to Power Systems
5. Telecommunication in Power System Protection
6. Algorithms for battery storage plants (BSPs) when connected to a utility grid in power and industrial networks
7. Design and development of protection and control tools to enable the efficient and reliable use of cogeneration and renewable energy plants
8. Fuel cells and its application in cogeneration
9. Fault location techniques to distribution feeders
10. Dynamic studies in Power Systems

RESEARCH GRANTS FROM INDUSTRY AND GOVERNMENT:

Have been successful in obtaining substantial research grants and incentives worth more than $1.5 million obtained from both internal to the University and very competitive external bodies.

A short list of achievements includes:

Funding from API for the development of alternative energy systems laboratory (2009-10). This project is for development of a laboratory model for demonstrating diverse alternative energy systems. The overall aim is to:

- attract undergraduate students to opt for Power Engineering;
- give opportunity for undergraduate students to do experimental studies and get hands-on experience;
- provide avenue for open day shows demonstrating to the general public alternative sources of power;
- build a new laboratory which will attract students from all over the university to observe diversification of power sources (viz. wind, PV, battery and fuel cells).

API has allocated $50,000 towards this project.

Funding from API for the development of effective power system monitoring system using Broadband over Power Line (2008-9). This project will investigate the technology behind broadband over power line (BPL) and develop an effective, reliable and secure power system monitoring system using BPL for the next generation power utility. BPL may even provide utilities with benefits beyond additional revenue. The same system that transmits internet data can be used to remotely monitor household electricity usage, eliminating the need to send a technician out to inspect the household meter. The system can also provide detailed feedback on electricity usage in real time, which could potentially detect brownouts before they escalate into blackouts. For home and office broadband users, the ever presence of power lines offer services that were not available to many in remote areas. For broadband users in the urban areas, additional choices mean competitive prices and better services. API has allocated $50,000 towards this project.

Funding from Olex Australia Pty Ltd for providing standard testing procedure for XLPE cables (2005-6). This research project investigates water treeing in standard, monosil and tree-retardant XLPE in medium voltage power cables. The project aims is to study the existing Australian manufactured XLPE cables that are currently being used by Olex overseas and niche testing procedures that will be acceptable universally. Olex in the initial phase has allocated $45,000 towards this project.

Funding from the Energy Safe Victoria (formerly known as the Office of the Chief Electrical Inspector) for Technical consideration and impact of converting Overhead Lines to Underground Power Cables (2004-8). This research investigates the technical trend of moving overhead lines to underground cables. It looks at both the local and overseas experience and practices in this area. New ideas are contributing in the development of underground system

significantly, which enhance reliability, efficiency and lowering the cost of installation and maintenance. These ideas covers various phases of underground system. The objective of this research is to investigate the effect of new technology and practices on moving overhead lines to underground cables to improve safety of personal efficiency e.g. reduce risks of fatal accidents caused by cars hitting poles and reliability of electricity supply, as well as improve the landscape. The project aims is to study the existing and new underground system designs, identify few novel designs and analyse them to develop a model that will increase reliability and efficiency of electricity supply. The Energy Safe Victoria has allocated $140,000 towards this project.

Funding from the State Government for Building Integrated Photovoltaic Showcase Installations and Energy Efficiency Awareness in Regional Victoria (2003-5). The Commonwealth Government Photovoltaic Rebate Program (PVRP) provides up to $10,000 for a 2-kilowatt (kW) solar PV system on a community-use building. Whilst a number of metropolitan councils and educational institutions have availed themselves of the PVRP, the take up from regional areas has been less pronounced. Most PV systems installed under the PVRP have been overlays on existing structures. Building Integrated Photovoltaics (BIPV) is where the photovoltaics are part of the building fabric and fully integrated into external wall cladding or roofing material. This technology is lagging considerably in Australia compared to, for example, in Europe or Japan. This project aims to seek out and develop three BIPV installations on community facilities in regional Victoria. Each installation is in a suitable high profile position and incorporates a different style/type of leading edge building integrated photovoltaic product. Potential installations were sought through working with councils and other suitable organisations (eg. schools) that were in the process of constructing or renovating their own community buildings. Awareness of greenhouse, energy efficiency and renewable energy has been raised through the project and savings pledged by the community through undertaking simple energy efficiency measures at home. Depending on installation complexity, the aim is to install up to 3 kW of BIPV at each location. The cost of each installation is met through a combination of the PVRP, Community Action Fund and a contribution from the recipient of each of the systems. A 3 kW system covers approximately 30 square metres, and is substantial enough to stimulate local interest. The project is extensively promoted through a variety of channels, during the search for participants at the beginning, and again as each installation commenced and when completed. Victoria University provides research, development and testing services for the BIPV products. A unique Internet site dedicated to BIPV in Australia was developed with the support of Victoria University featured the new regional Victorian 'mini-Showcase' BIPV projects. The Community Action Fund from the Victorian Government allocated $50,000 for this project.

Funding from Australian Gas Light (AGL) Electricity for Fault detection and location on Distribution Feeders (22kV & 11kV) (2000-4). Following the privatisation of the Victorian Electricity Supply Industry, AGL Electricity emerged as one of the five electricity distribution companies in Victoria. One of the Key Performance Indicators set for the company by the Office of the Regulator-General is the Reliability of Supply. Two major indices that characterise the Reliability of Supply are the customer minutes off supply and frequency of customer supply interruptions. AGL's objective is to minimise these two indices so that the Reliability of Supply standards set by the Office of the Regulator-General are met and indeed exceeded. Progressive automation of AGL's distribution feeder network, i.e. 22kV and 11kV, was adopted as a means of improving the Reliability of Supply. An absolute prerequisite for safe Distribution Feeder Automation is a reliable fault detection and fault location scheme. Thus the development of the fault detection and location scheme is perceived by AGL as a

preliminary but essential step that will lead to full Distribution Feeder Automation. At present there are a number of Radio Remotely Controlled & Monitored High Voltage devices that were introduced on AGL's network as part of the gradual approach to Feeder Automation. This research involved introduction, project management as well as for the development of the communication strategy necessary for this application. A fault detection and location scheme has been developed which is applicable to the electrical distribution network and facilitates a safe and reliable reconfiguration of the distribution feeder(s) under fault condition. Achieving this objective has resulted in an improvement in the Reliability of Supply, which is a key factor in AGL operation. AGL Electricity allocated $120,000 towards this project.

Earlier research and competitive funding (1989-95).

Have been successful in obtaining substantial funding worth $1,043,192 for the period 1989-95. Research grants and incentives obtained from both internal to the University and very competitive external bodies are as follows:

IMPACT OF THE INCLUSION OF RENEWABLE ENERGY SOURCES, BATTERY STORAGE AND COGENERATION ON POWER UTILITIES

The objectives of the project is to facilitate the introduction of grid connected elements such as cogeneration, renewable energy sources and battery storage and increase the safety, reliability and energy efficiency and decrease the system operating costs of, the resultant composite system by:

- developing, testing, demonstrating and promoting to industry, a standard computer model for assessing the impact of grid connected renewable energy sources, battery storage and cogeneration systems in power system planning and industrial energy usage planning

- developing, testing, demonstrating and promoting to industry, a standard system for automatic control and protection of renewable energy sources, cogeneration systems and battery storage, and their interface with the utility grid.

Joint work with RMIT and SECV - VU was the submitting organisation and I was the principal investigator and the project manager. The total value of research incentive was $744,000 from 1993-95 period, with 50% financial contribution from Energy Research and Development Corporation, 14% by RMIT, 17% by SECV and 19% by VU.

ACCURATE TRANSMISSION LINE FAULT LOCATOR

There is always an urgent need for research in this area, in order to assist operational staff to quickly and accurately locate faults; to enable supply to be rapidly restored and to avoid major Power System consequences. The main objectives of the research was involving development of mathematical and digital techniques to ensure accuracy and reliability in fault location and the development will have practical application and be of significant benefit to all Australian power authorities.

Recipient of the Electrical Industry Research grant of $30,000 for the year 1990-92, for development of the locator.

APPLICATION OF MODAL ANALYSIS USING ADAPTIVE SCHEME OF INTERFERENCE CANCELLATION FOR POWER LINE CARRIER COMMUNICATION

Power line carrier (PLC) is widely used for the communication of RF signals over high voltage lines. The rapid development over the last few decades of power lines for long distance transmission has caused an increasing demand for PLC facilities. PLC is applied to power lines for providing voice communication and many other vital services viz. protective relaying, telemetering, load-frequency control, supervisory control, fault location. Frequencies in the range of 30 - 300 kHz are commonly utilised in PLC. This frequency band is high enough to be isolated from the power frequency and associated noise, yet not so high enough so as to encounter excessive attenuation. Line traps are now commonly in use in PLC application. These are expensive to manufacture and maintain because of the large amount of power frequency current that is carried.

Adaptive techniques have been applied for cancelling harmonics noise in distribution systems. In an active filtering technique, a portion of transmitted/received signal is adjusted in phase and amplitude and fed in external side of the link in order to cancel the leaks through the line trap. The building block uses the correlation cancellation loop (CCL). In this work CCL technique has been adopted for adaptive interference cancellation as applied to PLC over hv and ehv transmission lines in order to provide a low-cost solution for achieving high level cross-bus isolation, so that PLC signals can be used in adjacent line sections without mutual interference. Modal analysis theory has been used to study non-conventional couplings.

DEET Overseas Student Award (EMSS) for PhD Study of $43,500 for the year 1992-94.

DEVELOPMENT OF A KNOWLEDGE BASED SYSTEM FOR POWER SYSTEM PROTECTION

This research deals with an expert system technique for the design, testing, and assessment of relay protection systems. This work will introduce new engineers with limited expertise in power system protection to experience the knowledge and information of the subject.

Recipient of the Australian Electrical Research Board grant of $10,000 for the year 1989 and $6,000 for the year 1990. $11,900 grant for the year 1991.

APPLICATION OF ARTIFICIAL INTELLIGENCE FOR ASSESSING POWER SYSTEM PROTECTION PERFORMANCE

The objective of this research is to create a library of expert for complete power system design, analysis and assessment. This project is a joint work with the State Electricity Commission of Victoria. A common expert shell KAPPA is used, so that the developed work can be easily transferable between the organisations.

Recipient of the Australian Electricity Supply Industry Research Board grant of $27,500 for the year 1992. Grant approved for 1993 is $18,200.

APPLICATION OF FUZZY LOGIC STABILISERS FOR POWER SYSTEMS

Power system stabilisers have been known to be used to improve the dynamic performance of a

power system. Normally a lead-lag stabiliser is used, where the gain settings are fixed at certain values. With abnormal conditions, it is advisable to adapt the stabiliser parameter in real-time based on on-line measurements. This led to the development of self-tuning stabiliser and better dynamic performance. However, identification in real-time is time consuming. So, it is suggested that a new type of stabiliser, which does not use real-time identification, be used. To improve operating conditions speed deviation and acceleration of a machine are chosen as input to the stabiliser. Recent techniques have seen wide use of rule-based systems, knowledge-based systems, fuzzy logic etc. Fuzzy logics are used as a means of expressing necessarily imprecise knowledge and coping with problems of an incomplete knowledge base. Use is made of fuzzy relation matrix, which gives the input to output relationship. Such approach may be used for practical implementation.

FIT post-graduate industry award of $38,208 for the year 1990-92 for PhD study.

A SEQUENTIAL APPROACH OF SOLVING EXACT DECOUPLED SECOND ORDER AC-DC LOAD FLOW AND STATE ESTIMATION PROBLEM

This research presents a new framework for second order ac-dc load flow in rectangular coordinates. Such formulation is completely expressible in the Taylor series and contains derivatives up to the second order only, the third and other higher order derivatives being zero. The Jacobian matrix is kept constant and thereby, needs to be computed and triangularised once only in the iterative scheme. The newly developed super second order algorithms for the ac system load flow are computationally more efficient and reliable than the Newton-Raphson and fast decoupled load flow algorithms. In addition a new version is proposed which presents better performance.

FIT post-graduate industry award of $38,208 for the year 1992-95 for PhD study

ADVANCED MICROPROCESSOR BASED RELAYS FOR OVERCURRENT AND DIFFERENTIAL PROTECTION

The aim of the research program is to develop new digital relaying technique for a secure relaying protection using microprocessor based principles. The speed of the relay response is enhanced by the use of 32-bit microprocessor.

This project, when successful, has the ability of providing the power system protection with reliability, accuracy, security, reduction in maintenance costs, reducing panel space requirements etc, which is of prime importance and relevance to the power industry.

FIT post-graduate industry award of $38,208 for the year 1992-95 for PhD study.

TRANSIENT ANALYSIS OF INDUCTION GENERATORS INTERCONNECTED TO THE POWER GRID

Dispersed storage and generation devices are connected to the distribution feeders. Problems due to over-voltages due to shunt faults, self-excitation of generators etc can occur. The aim of this project is to study the transient voltages and currents occurring due to fault conditions at various points in the system, to be able to predict any abnormalities in the system and also to highlight current trends in the planning of such type of connections.

FIT post-graduate industry award of $18,734 for the year 1990-91 for Master's study.

DESIGN AND DEVELOPMENT OF MICROPROCESSOR BASED DEVICE TO PROTECT POWER DISTRIBUTION FEEDER AGAINST ARCING FAULTS

High impedance faults occur randomly in distribution system and are not easily detected by traditional protection devices. These faults pose potential fire hazard and property damage including risk to public safety. As such there is a desire in the utility industry to detect these faults. The main objectives of the research are to develop mathematical techniques to check the occurrence of such faults and to build a microprocessor device to protect against such abnormalities.

FIT post-graduate industry award of $18,734 for the year 1992-93 for Master's study.

DEVELOPMENT OF SUCCESSFUL PARTNERSHIPS WITH INDUSTRIES AND OTHER UNIVERSITIES:

Have been involved in the following leading edge research and development which have regional, national and international relevance:

Australian Telecommunications CRC (2001-6). I represented the University, the convenor of the Victorian node and was a Director in the CRC. The members were Curtin, Monash, RMIT, Victoria University, University of Western Australia, Ericsson, Vodaphone, Agilent, Open Telecommunications, and several other SME companies.

National Networked Tele-Test Facility for Integrated Systems (2001-7). The collaborating partners of this consortium were Edith Cowan, Victoria University, University of Western Australia, Adelaide, Griffith, Motorola, Intelligent Pixels, Gemplus, Spider Silicon, Australian Microelectronics Network, RADLogic, Mentor Technologies and Agilent. As the university's representative and a Director on the consortium I aided in successfully attracting $4.77 million from Federal Government under the Major National Research Facility Program and $300,000 from the State Government of Victoria.

Victorian State Government's Chipskills Program (2000-6). Microelectronics is the world's fastest growing industry. It is forecast to be the key driver of applications such as in internet and small-scale technologies, wireless technologies, embedded systems, automotive, transportation and biotechnology. Initially Victorian government together with a number of Victorian universities (Victoria University, RMIT, LaTrobe and Swinburne) and key industry players (Ericsson, NEC, Bandspeed, Agilent, Bosch, Fujitsu, Motorola, Softronics, Calyptech, Spangaro Systems, Analog Devices and Semiconductor Technologies Australia) developed a full-fee paying postgraduate coursework programmes in Microelectronic Engineering. From 2003 onwards the universities partners are RMIT and Victoria University. Having strong industry backing, these are the first programmes of its kind in Australia. Students enrolled in these programmes have access to cutting edge design tools, opportunities to work on real industry projects and gain skills that the microelectronic industry demands. I managed this programme in the Faculty, Chair the Management Committee and represent the university at various external levels.

LEADERSHIP IN COMMUNITY AFFAIRS - PROFESSIONAL, COMMERCIAL AND INDUSTRIAL SECTORS:

High Voltage Electricity educational and research facility at Scienceworks (2002-till date). Victoria University and Scienceworks have recognised the importance of promoting science, engineering and technology to not only researchers and general community, but also to primary, secondary and tertiary sectors youth. Therefore the two institutions developed a novel and unique theatre (approximate cost $550,000) that captures the imagination of the Australian youth. Telstra donated its multi-million dollar High Voltage Research laboratory equipment to Scienceworks. The equipment included an impulse generator and Tesla coil capable of generating 2 million volts of electricity. Such equipment is rare and unable to easily be replicated and the knowledge of its operation lies with very few people in Australia. The equipment is used for public demonstrations, formal education/training programs and on-going research. Scienceworks utilised parts of this equipment and expertise in its recent "Megawatt" exhibition, during which a science show about electricity and its properties, lightning strikes, magnetism and safety was provided hourly with great response from general visitors and education audiences alike. No other Science Centre of Museum (Boston Science Museum comes close) utilises this capacity of high voltage generation in its programming. The capacity for Scienceworks to offer this experience and educational program on an ongoing basis is extremely beneficial to the community.

Conceived and led the formulation of the Victoria University Islamic College, Memorandum of Understanding signed in July 2000. The understanding provides Victoria University and a community based organisation to be offering foundation course and first year programmes in business and science. It will enable approximately 500 eftsus of overseas students to commence from 2005. There is also an opportunity to provide education to local community students in courses such as nursing and teacher education. The community is going to contribute in pastoral care, publicity, promotion and student accommodation towards this project. This will provide a golden opportunity for VU to attract further fee-paying students.

Head of the Werribee Campus of Victoria University (2000-2004). This role has effectively provided me with ideal leadership opportunities. It is a senior point of contact for staff and the community across a range of activities, issues and interests. Werribee Campus is developing into the research wing of the university. Close association with BHP, the Austin Research Institute and the Australian Government Analytical Laboratories can provide incentives for major infrastructure development (over $25 million) and research.

Chair various Committees in the Faculty (1999-), which includes course approvals committee, publicity committee, international committee, postgraduate studies committee etc. This gives me an opportunity to work closely with the staff of the Faculty, understand the needs of the market, foster undergraduate and research training programmes.

Visiting Professor at Universiti of Teknologi, Malaysia (1996-2000). I was invited to be the external examiner for UTM, Malaysia - a rare honour for an Australian academic. This has given me an appreciation of international programmes in engineering, enabled me to share and learn best practices and has provided me with the opportunity to use established international benchmarking.

Spear headed the development of the first Doctoral programme in Electrical and Electronic Engineering (1989), recognised as one of the more successful research programmes within the Faculty of Science, Engineering & Technology. Half of the University's research students and income comes from the Faculty of Science, Engineering & Technology. In 2006, I also developed the first professional doctorate (DEngSc) programme to cater for the needs of South East Asian market.

Professional Development courses (1984-). I am contracted by API and Electricity Supply Association of Australia (ESAA) to run professional development courses in Australia and New Zealand in the area of Power System Protection and Cogeneration & Gas Turbine Operation. I have also been invited to run these courses in South East Asia and the Middle East. The courses also include presentations by a number of industry experts and are designed to give delegates the basic skills to commence practice in the topic. I was the Convenor of the ESAA Residential School in Electric Power Engineering.

Examiner of External Thesis (1984-). I am examiner of Master and Doctoral thesis of various universities in Australia and overseas.

Keynote Speaker. I have been invited to be the keynote speaker in numerous conferences, workshops both nationally and internationally.

Accreditation Panel Member. Chair and a member of the evaluation panel for Engineers Australia for accreditation of undergraduate engineering courses. Have also been invited by interstate and overseas universities to conduct review of their engineering programs.

Editor. I am the Guest Editor of Engineers Australia Special Journal on Power Engineering, International Journal of Renewable Energy Engineering and other conference proceedings. I am a regular examiner of ARC proposals, IET and other journals.

LIST OF PUBLICATIONS:

A significant amount of papers (journal and conference – refereed and non-refereed) and books have been written and published both in Australia and overseas.

(1) Books/ Continuing Education Course Material

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(4) Keynote Presentation – Invited or Plenary Speaker

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Kalam, A., O'Brien, P. and Schroder, F., 1985, 'Computer Aided Setting of Overcurrent Relays', **1985 Power Engineering Symposium**, University of Sydney.

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(b) Non-Refereed Proceedings, Seminar and Internal Working Papers

Kalam, A., 2008, 'Power System Principle Applied in Protection Practice', Tutorial to staff, student and PECon conference delegates, **UTM**, Malaysia.

Kalam, A., 2008, 'How to write high impact research papers', Seminars to staff at both Penang and Shah Alam Campuses at **UiTM**, Malaysia.

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Kalam, A., 1999, 'Cogeneration and Gas Turbine Operation', Seminar Paper, **Australian Cogeneration Association**, Melbourne.

Kalam, A., 1999, 'Cogeneration in Australia', Seminar Paper, **Reyrolle**, Melbourne.

Kalam, A., 1999, 'Grid Connected Energy System', Seminar Paper, **ESAA**, Melbourne.

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Kalam, A., 1998, 'Photovoltaic (PV) pilot project to be used on Urban Freeways', Seminar Paper, **Monash University**, Melbourne.

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Rich, N. and Kalam, A., 1989, 'Expert System on Power System Protection', **E^4G Conference on Power and Control**, S.I.T., Melbourne.

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(6) Patent

Mahdavian, H., Zayegh, A. and Kalam, A., 1999, 'Induction of Power (in Motor) from a Stationary Object (Stator) to a Rotary Object (Rotor) with Automatic and Sensorless Speed and Position Detection', Patent Number 708569, **Australian Patent Office**.

PROFESSIONAL, IN-SERVICE and PUBLIC SERVICE TRAINING:

I have been involved in the design, development, implementation and evaluation of academic programmes for students at both undergraduate and postgraduate levels. I have contributed to the course design, instructional methods and learning styles. I have and continue to present syndicate and lectures to the ESAA's Power Engineering Residential School in Australia. I am also involved in the transfer of established and new knowledge, ideas and skills to personnel from the electricity supply industry. My established teaching areas are:

A. Power System Analysis, Control, Protection and Communications;
B. Alternative Energy Systems;
C. Design Theory;
D. Electrical Machine;
E. Digital Simulation of Power System;
F. Electrical Circuits and Linear System Theory;
G. High Voltage Engineering.

This year I have been requested by the API to develop one postgraduate and two undergraduate module for API, under the collaborative Power Engineering Centres of Excellence scheme. VU will be paid between $25,000 - 40,000 for each of the modules. The modules are:

- Overhead design and Construction (PG)
- Telecommunications and Communications Protocols (UG)
- Engineering System Fundamentals (UG).

Also, I have given contributions to educational excellence, by conducting various seminars and workshops to professional bodies (viz. API, Energy Supply Association of Australia, Electricity Supply Industries of Victoria, Australian Cogeneration Association, Engineers Australia, etc.) and overseas. Each of these courses has provided valuable financial returns (from $15,000 to $30,000) to the University. In Australia, besides Victoria, the professional development courses have run in Queensland, Northern Territory, New South Wales, Western Australia and South Australia. ESAA has chosen Power System Protection as the first in a

series of units in Electric Power Engineering to be provided on distance education mode. This unit provides credit towards Masters and Graduate Diplomas of Engineering and Technology offered by various providers. This distance education unit provides corporations and the individual with a flexible means of accessing training to meet immediate needs for skill development. A major part of the unit has been adapted and revised with the assistance of Allan Spicer of ESAA, from my book on Power System Protection – this is the study unit developed for ESAA's Continuing Education courses. Again along with Bob Coulter, I have run continuing education courses on Power System Protection in Malaysia, Saudi Arabia and New Zealand. A list of national and international seminars and professional development courses I have conducted/ organised is as follows:

- Power System Protection, **ESAA & VUT**, Adelaide, Darwin, Wellington, Melbourne, Perth, Sydney 1996-2004.
- Cogeneration and Gas Turbine Operation, **ESAA, ACA, IE Aust & VUT**, Townsville, Brisbane, Alice Springs, Perth, Melbourne, Sydney 1997-2004.
- Grid Connected Energy System, **ESAA**, Melbourne 1999.
- Power System Protection, **UTM & VUT**, Johor Baru, Malaysia, 10-12 December 1996.
- Cogeneration, **ESAA, ACA & VUT**, Sydney, 26-28 March 1996.
- Power System Protection, **ESAA & VUT**, Melbourne, 6-8 June 1995.
- Packaging Private Power, **ACA**, Melbourne, 29 April 1995.
- Power System Protection, **ESAA & VUT**, Melbourne, 7-9 November 1994.
- Cogeneration, **ESAA, ACA & VUT**, Melbourne, 14-16 June 1994.
- Transmission and Distribution System Protection and Workshop, **ESAA, UWA & VUT**, Adelaide in conjunction with CIGRE, 26-29 July 1993.
- Power System Protection, **ESAA & VUT**, Melbourne, 9-11 November 1992.
- Power System Protection, **ESAA & VUT**, Melbourne, 23-25 September 1991.
- Power System Protection for distribution, sub-transmission and transmission engineers, **FIT**, Melbourne, 19-23 February 1990.
- E^4G Conference on Power and Control, **S.I.T**., Melbourne, 30 September 1987.
- Power System Protection, **FIT**, Melbourne, 16-19 June 1987.
- Power System Protection for municipal electrical authorities, **FIT**, Melbourne, 5-7 November 1986.

- All India Seminar on Protection and Grounding, **The Institution of Engineers (India)**, Bhubaneswar, 22-24 January 1984.

- Circuit Breakers, **CIAE**, Rockhampton, 26-27 September 1984,

- Power System Protection for para-professional, **CIAE**, Gladstone, 29-30 November 1983.

- Recent trends in Power System Protection and their application, **CIAE**, Rockhampton, 11-13 July 1983 and **GIAE**, Churchill, 19-21 July 1983.

I have written papers and course materials directly resulting from the research activities and quality teaching approach. I have been invited to teach electrical power engineering courses and provided syndicate in Australia (viz. Curtin University of Technology – API Power Engineering Summer Residential School, 2008 and 2009, University of Tasmania – Power Engineering Summer School, 2007, University of New South Wales – Power Engineering Summer School, 2005 and 2006, University of Queensland – Power Engineering Summer School, 2004, Monash University – Power Engineering summer school, 2001; Monash – Power Engineering summer school, 1993; Melbourne – Power Engineering summer school, 1996) and overseas. In 2002, both Monash and Victoria University ran ESAA residential summer school in Power Engineering cooperatively. At the end of 2001, I was invited to give a course in India on 'Current trends in Power'. Also I have taught in certain non-electrical courses in other institution viz. Australian Catholic University, Mercy Campus.

Student Evaluation

My students have evaluated all the courses in which I have been involved. Also feedback has been obtained from the continuous education course run for the electricity supply industry.

After every course an evaluation form is given to each participant and many a time very useful feedback has come back – this has eventually helped in improving the teaching style and course material. The teaching and evaluation methods are not only based on end of year or semester examination but continuous monitoring of student progress through home assignments, class tests and oral examinations.

My evaluation sheet has been made available to all academic staff in the former Department of Electrical and Electronic Engineering. Also many colleagues now use similar continuous self-assessment methods in teaching their course.

SUPERVISION OF RESEARCH STUDENTS:

I have supervised a number of projects, both at undergraduate and postgraduate levels. The following is the list of theses/ projects I have been associated with:

Postgraduate:

Doctoral by research (Principal Supervisor)

Implementation of the IEC61850 International Protocol for Accurate Fault Location and Arc Voltage estimation in Overhead Power Lines	Blagoj Stojevski	Initial Stage (2011)
Advanced Transient Control of a Hybrid Solar/Diesel Electric Power System	Tay Yin Taky Chan	Initial Stage (2011)
Medium High Voltage Power Cables Testing and Diagnostics	Can OĞUZ	Initial Stage (2011)
Direct Current based microgrid/distribution/power system/grid Integration of DG	Faizan Dastageer	Initial Stage (2011)
Power Quality Issues in Electric Power Distribution System	Zahir J. Paracha	Intermediate Stage (2010)
Investigation of distribution networks with non-conventional energy sources	Goparanjan Mohapatra	Intermediate Stage (2010)
Experimental Analysis and Development of a Secure Power System	Abdulrahman Hadbah	Intermediate Stage (2010)
Technical consideration and impact of converting overhead powerlines to underground power cables	Hassan Al-Khalidi	Examination Stage (2009)
Soft computing Technologies in power system analysis	Joseph Nihal Fernando	Completed (2008)
Experimental analysis and modelling of an information embedded power system	Amanullah Maung Than Oo	Completed (2007)
A new approach to assessment and utilisation of distribution power transformers	Selver Corhodzic	Completed (2006)
Fault detection and location on 22kV and 11kV distribution feeders	Ryzard Orlowski	Completed (2006)
Transient analysis of a private generation scheme	Rushan Muttucumaru	Completed 1999
Power system stabilisers using fuzzy logic and neural networks	Nasser Hozzeinzadeh	Completed 1998
Application of expert system to power system protection system design, analysis and assessment	Sow Kum Wong	Completed 1997
Implementation of massively large processing elements	Jugdutt Singh	Completed 1997

A sequential approach of solving exact decoupled second order ac-dc load flow and state estimation problem	Zahidul Haque	Completed 1996
Advanced microprocessor based relays for overcurrent and differential protection	Ze Jian Chen	Completed 1996
Application of modal analysis using adaptive scheme of interference cancellation for power line carrier communication	Iqbal Gondal	Completed 1996
Accurate transmission line fault locator	Lara Al-Dabbagh	Completed 1994

Doctoral by Research (Co-supervisor)

Communication infrastructure for protection and network automation	Charles Ozansoy	Completed (2006)
A smart motor drive system for domestic and industrial applications	Hossein Mahdavian	Completed 2001
Fault location on ehv lines using wide band spread spectrum techniques	Victor Taylor	Completed 1998
Application of fuzzy logic stabilisers for power systems	Joanne Shi	Completed 1994

Master's by Research (Principal Supervisor)

High performance Electric Vehicles	Lavanya Varadharajan	Initial Stage (2011)
Impact of Distributed Generation (DG) on Smart Grid (SG)	Nur Aysik	Initial stage (2010)
Power Transfer Analysis of a Fuel Cell Inverter	Joevis Claveria	Intermediate Stage (2010)
Protection for Wave Power Generating System	Tay Yin Taky Chan	Completed 2004
Integration of power system protection and control substations	Indunil C. Kannangara	Completed 1994

Cogeneration in distribution system: Planning, operation and transients	Mahabir Singh	Completed 1994
A local area network using spread spectrum techniques (acting for Mr P Leung)	Alec Simcock	Completed 1990

Master's by coursework (Principal Supervisor)
(The following theses/ projects were successful externally examined)

IEC61850 – Pilot Project – Protection	Mohammed Iftekhar Ahmed Syed	2009
IEC61850 – Pilot Project – Communication	Gibran Malik	2009
Power System Analysis – Line Models and performances	Wahaj Habib	1999
An analysis of industrial electrical power systems software	Darius S. Salehi	1998
Associate protection techniques in cogeneration	P.M. Aloot	1996
Design of a Fuzzy Logic Based Power System Stabiliser (FLBPSS)	Suhail Naqshbandi	1995
Digital synthesise of protection test waveforms for monitoring and testing response of power system protection equipment	H.D Renuka Rodrigo	1994
Comparison between a conventional PI controller and a PI like fuzzy controller	Rupinder Singh	1994
Benchmark algorithm for spectral analysis of fault induced transients	V. Navaratnam	1994
Temperature alarm and control systems	Jia Qi Gao	1994
Sequence development on ABB MOD 300 distributed control system	Dan Hohor	1994
Advanced microprocessor based multi-digital for overcurrent protection	Zhenrong Liu	1994
32-bit Microprocessor for protecting power transformers	Wang Yi Bin	1994
Stability study on Victorian Hospitals	Alan Goodridge	1994

cogeneration project		
Simulation of Power Line Carrier System	Jing-Hao Gu	1993
Power Transmission Line	Tao Jiang	1993
Synchronous machine simulation using TACS	Peter Tsetis	1993
32-bit microprocessor application for multiple protective relaying	Hong Xu Chen	1993
Development of fault location algorithm for series compensated ehv power transmission lines using ATP4	Con Themelios	1993
Modelling synchronous machine for the analysis of electromagnetic transients	Sarath Kumara Kapudwage	1993
New protective scheme for unsymmetrical fault detection on industrial cogeneration – public network interface	Chandra Jayanth Weliwitage	1993
Adapting ATP4 program for teaching Power Electronics	Kuo-Hsing Chiang	1993
Intel 80386 microprocessor system application on overcurrent protection relaying	Yao Yukun	1993
Simulation of an AVR and stabiliser for a synchronous generator	Huan Li	1992
Design and implementation of a PC based AVR and stabiliser for a synchronous Chen generator	Ze Jian	1992
Fast decoupled load flow analysis	Selladurai Sivapathasundaram	1992
Simulation of series compensated transmission system on ATP4	Chau Minh Huynh	1992
Load flow analysis for multi-busbar system using finite mathematics with the help of PC	Chong Yan Fatt	1991
Fault transient simulation of ehv transmission system	Iqbal Gondal	1991

Undergraduate (4^{th}/ 3^{rd} year Projects):

Since 1982, I have been running number of 3^{rd} and 4^{th} year design projects. For the last few years, I have supervised about 19 final year undergraduate projects annually. One of the projects has also received the best IREE final year student project award.

EE461	**Development of remote signaling emergency unit (Year 4) IREE BEST FINAL YEAR PROJECT AWARD***	**Matry Thianesysavanah**	**1989**

EXTERNAL EXAMINATION, REVIEWS AND ASSESSMENTS:

I have been external examiner for various institutions. Some of the recent Australian and overseas research theses and other assessments I have examined are listed as follows:

Chair, Engineers Australia Accreditation Committee for various Australian Universities
Expert External member (nominated by the DVC) to the RMIT's Faculty of Engineering Academic Promotions Scheme from Level D to E
Assessor of Manuscript: King Fahd University of Petroleum and Minerals, Saudi Arabia
Assessor of Manuscript: IET. Proceedings: Generation, Transmission and Distribution
Assessor of Manuscript: Engineers Australia
Assessor of Manuscript: International Journal of Renewable Energy Engineering
Assessor of Manuscript: Microelectronics Reliability
Examiner of Higher Degree Thesis: Monash University
Assessor of Grant Application: Monash University. ARC Small Grants 2000
Assessor of Manuscript: Powercon 2000
Examiner of Higher Degree Thesis: University of Western Sydney
Examiner of Higher Degree Thesis: Indian Institute of Technology, New Delhi, India
Examiner of Higher Degree Thesis: Central Queensland University
Examiner of Higher Degree Thesis: Indian Institute of Technology, Bombay, India
Examiner of Higher Degree Thesis: Indian Institute of Technology, New Delhi, India
Examiner of Higher Degree Thesis: Monash University
Examiner of Higher Degree Thesis: Swinburne Graduate Research School, Swinburne University of Technology
Editorial Reviewer: IE Australia
Assessor of Grant Application: University-Industry Research Collaboration Committee, SPIRT Grant, ARC
Examiner of Higher Degree Thesis: University of North Bengal, India
Examiner of Higher Degree Thesis: University of Delhi, India
Editorial Reviewer: Solar 99
Editorial Reviewer: Australasian Universities Power Engineering Conference
Editorial Reviewer: Iranian Journal of Science and Technology
Editorial Reviewer: Electric Power Systems Research
Assessor of Research Grant Proposals: Research Grants Council of Hong Kong
Assessor of Grant Application: Australian Research Council Large Grants Scheme
Assessor of Grant Application: Monash University – Australian Research Council Small Grant
Assessor of Grant Application: Australian Research Council SPIRT Grants Scheme
Examiner of Higher Degree Thesis: RMIT
Examiner of Higher Degree Thesis: University of Tasmania
Examiner of Higher Degree Thesis: IIT Kanpur, India
Examiner of Higher Degree Thesis: TIET Patiala, India
Examiner of Higher Degree Thesis: IIT Kharagpur, India
Examiner of Higher Degree Thesis: Swinburne University of Technology

ADMINISTRATIVE CONTRIBUTIONS:

I have contributed significantly to the University's continued growth and have been nominated/ selected for various administration positions. Some of the notable contributions of mine within the last seven years are:

- Chair of the Werribee OH&S Committee.
- Member of the Committee for Werribee.
- Chair of the Werribee Advisory Committee.
- Member of the Werribee Management Committee.
- Deputy Dean of the Faculty of Health, Engineering & Science , VU.
- Head of the former Department of Electrical and Electronic Engineering, VU.
- Research Director in the former Department of Electrical and Electronic Engineering, VU.
- Visiting Professor in the Faculty of Electrical Engineering, University of Technology Malaysia (UTM).
- Visiting Professor in the Faculty of Electrical Engineering, University of Technology MARA (UiTM).
- External Examiner in the Faculty of Electrical Engineering, University of Malaysia Perlis (UniMAP).
- Member of VU's former Faculty of Engineering Research Committee.
- Member of VU's former Faculty of Engineering Promotion (Associate Professor and Professor) Committee.
- Member of VU's former Faculty of Engineering International Committee.
- Course Director for Master of Electrical and Electronic Engineering by coursework at VU.
- Member of the Course Advisory Board in the Department of Electrical and Electronic Engineering.
- Mentor for 1st year Electrical and Electronic Engineering degree students at FIT/ VU.
- Member of FIT's Research and Graduate Studies Committee.
- Member of VU's former EEE Higher Degrees Committee.
- Member of the course accreditation committee for both undergraduate and postgraduate studies.

Being the former Course Director of the Master's by coursework degree, I contributed to the complete establishment of that programme from a very humble beginning to a very strong growth of 100 enrolments in 1992. Some of the staff have completed this course – which facilitated their personal development. There was no PhD programme offered by the former department and I personally administered the submission through the Faculty, course advisory board, research and graduate studies committee, academic and progress committee and finally the doctoral committee. I initiated and wrote (with other within the former department) the submission for the first doctoral programme in the former Faculty of Engineering. One of our academic staff has completed doctoral studies under my supervision. Recently I initiated the first DEngSc programme in the Faculty of Health, Engineering & Science.

I have been a member of the export of education working group since 1985. In this capacity, I have represented FIT/ VUT overseas and recruited students, not only for engineering and science but other faculties as well. From time to time the International Office consults me on various international student matters and issues. I have been a member of VU's strategic Planning on 'Internationalisation of VUT'.

I have also been a member of various Faculty's (internal and external) undergraduate and postgraduate accreditation/ approval/ review committees. The contribution given on these committees has been on restructuring the courses, incorporating new syllabus of various engineering subjects, views on overseas engineering courses, administrative structure etc. The establishment of the QMS in the Faculty of Health, Engineering & Science has been my big achievement.

FURTHER ACTIVITIES

Muslim Chaplain, VU
Chairman and Director of Muslim Cooperative Credit Australia
Member of the VU working party for export of educational services.
Member of the FIT Footscray Language Centre.
Chairman if the Islamic Book Service.
Chairman of the VU Muslim Student Association.
Member of the Committee on Arabic and Middle East course formation in the Humanities Department at FIT.
Delivering various lectures on minority issues and comparative religion at La Trobe, Monash, Chisholm, Mercy and other Institutions.

REFEREES

The names and addresses of six referees are as follows:

1. Professor Albert E. J. McGill
   89 Melvins Road
   Riddells Creek
   Victoria 3431
   Tel: +61 3 5428 6461
   Mob: +61 4 1936 1910
   e-mail: Albert.Mcgill@futureforfood.com

   Current contact (till December 2009):
   School of Food Science
   National University of Singapore
   Singapore
   Tel: +65 651 63501
   Mob: +65 9120 7798
   e-mail: chmmaej@nus.edu.sg

(Professor McGill, former Dean of Faculty of Science, Engineering & Technology, Victoria University has been my immediate supervisor from 1999 and is well aware of all my teaching, research, administrative and external activities)

2. Professor D P Kothari
Vice Chancellor
(Former Director and Professor of Centre for Energy Studies - Indian Institute of Technology, Delhi)
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India
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Fax: +91 416 2243092, 2240411
Email: vc@vit.ac.in

(Professor Kothari is a world leading energy expert and will be able to comment on my research activities)

3. Associate Professor Aladin Zayegh
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PO Box 14428
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Fax: +61 3 9919 4908
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(Professor Zayegh is the former Head of the School of Electrical Engineering at Victoria University and has knowledge of all my teaching, research and external initiatives)

4. Mr. Patrick McMullan
Senior Engineer – Standards and Communications Design and Engineering
Energy Australia
Level 13
570 George Street
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Tel: +61 2 8260 1716
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(Mr. McMullan has knowledge of the professional development and distance education courses that I provided to the electricity supply industries in Australia and overseas)

5. Mr. R Coulter
Manager, Engineering and Strategic Development
Adapt Australia
29 Barrie Road

Tullamarine
Victoria 3043
Tel: + 61 3 9330 0666
Fax: +61 3 9330 0777
Mob:+61 4 2245 1050
Email: bob.coulter@bigpond.com

(Mr. Coulter, formerly of Powercor Australia has been associated with me for along period of time. We, jointly, present courses to the industries, conduct research and provided consultancy in the energy area)

6. Mr. Allan Cotton
Manager – Network Asset Management
SP-Ausnet
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385 Bourke Street
Melbourne 3000
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Mob: +61 4 1901 0225
Email: alan.cotton@sp-ausnet.com.au

(Mr. Cotton is also a member of the ESAA Advisory Committee and can comment on my industry's initiatives).