Ahmed H. Eltom
Professor, Electrical Engineering
College of Engineering and Computer Science
The University of Tennessee at Chattanooga
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EDUCATION:

1984	Ph.D. Electrical Engineering	Clarkson University	Potsdam, NY
1982	M.S. Electrical & Computer Engineering	Clarkson University	Potsdam, NY
1973	B.S. Electrical Engineering	University of Khartoum	Khartoum, Sudan

PROFESSIONAL REGISTRATION:

Registered Professional Engineer (PE, ID 00100011), Tennessee

PROFESSIONAL EXPERIENCE:

Academic:

1998- Present	**Professor:**	The University of Tennessee at Chattanooga,
1991-1998	**Associate Professor:**	The University of Tennessee at Chattanooga,
!996-1997	**Fulbright Scholar:**	The University of Qatar, Doha, Qatar
1984-1991	**Assistant Professor:**	The University of Tennessee at Chattanooga
1981-1984	**Teaching Assistant** ,	Clarkson University, Potsdam, N.Y.,

Industrial:

1985-1996	**Consultant**,	Tennessee Valley Authority, Chattanooga, Tennessee
1993-1994	**Consultant:**	US Power**,** Philadelphia, Pennsylvania
1973 -1980	**The National Electricity Corporation,**	Khartoum, Sudan
1978 -1980	***Manager and Senior Commercial Engineer***,	Khartoum North
1977-1978	***Design Engineer (Special Detail*)**,	Ministry of Public Works, Riyadh, Saudi Arabia
1975-1977	***Commercial Engineer***	Khartoum District

1974-1975 ***District Engineer (Section Head),*** Damazin District

1973-1974 ***Field Engineer*** Khartoum District

RESEARCH:

1. Thesis & Dissertation

"Induction Motor Behavior During Single Phase to Ground Fault." M. S. Thesis, Clarkson University, Potsdam, New York, 1982

"Induction Motor Analysis During System Unbalanced Faults." Ph.D. Dissertation, Clarkson University, Potsdam, New York, 1984.

2. Books

N.D Sadanandan, Ahmed H. Eltom, Energy Efficient Motors Reference Guide, The Electrification Council, Washington D.C. Reprint 1993

N.D Sadanandan, Ahmed H. Eltom, Energy Efficient Motors Reference Guide, Tennessee Valley Authority, Chattanooga, Tennessee, 1992

3. Refereed Publications and presentations

Ahmed Eltom, Aliosman Demirbas," Motor System Energy Efficiency in the Nylon Industry: a Comparison of PWM and Square Wave Invertors." The IEEE International Electric Machines and Drives Conference. Miami Florida, May 3-6, 2009

Ahmed Eltom," Industry Grade Power System Protection Laboratory," ONR/NSF/EPRI/AEP-Sponsored Faculty Workshop Reforming Electric Energy Systems Curriculum With Emphasis on Renewables/Storage, Reliable Delivery and Efficient End-Use, NAPA, California, Feb 12-15, 2009. (Invited)

Ahmed Eltom, Oladokun Faduyile, "The Economics of Energy Efficient and Standard Motors When subjected to harmonic voltages." Accepted to IEEE, PES Power Africa 2007, Conference and Exposition. Johannesburg, South Africa, 16-20 July 2007

Ahmed Eltom, Mohamed Aziz, "The Economics of Energy Efficient Motors During Unbalanced Voltage Conditions." Inaugural IEEE Power Engineering Society Conference and Exposition in Africa. Durban, South Africa, 11-15 July 2005 (Refereed)

Ahmed Eltom, "UTC Power Laboratory a cooperation between Industry and Academia" Extended Abstract Presented at the ASEE South East Meeting , April 2005.

Ahmed H. Eltom, Rusapat Harnchotipun, “Microprocessor-Based digital Relay Laboratory,” Extended Abstract Presented at the ASEE South East Meeting , April 2002.

Phil Soo Yum, Fisher Campbell, and Ahmed Eltom, “The Diagnostic Analysis of Partial Discharge With Acoustic Monitoring in GIS Equipment.” Presented at the IEEE Power Engineering Society Summer Meeting, July 2002

Ahmed H. Eltom, Rusapat Harnchotipun, “Microprocessor-Based digital Relay Laboratory with Industry Support,” Presented at the IEEE Power Engineering Society Summer Meeting, July 2002.

M. Sendaula, S. Biswas, A. Eltom, C. Parten, and W. Kazibwe, "Simultaneous Solution of Unit Commitment and Dispatch Problem Using Artificial Neural Network," the International Journal of Electrical Power and Energy Systems,Volume 15, Number 3, 1993.

A.H. Eltom, N.S. Moharari, "Motor Temperature Estimation Incorporating Dynamic Motor Impedance," IEEE Trans.on Energy Conversion, March 1991.

A. H. Eltom, N. S. Mohrari," Motor Temperature Estimation Incorporating Dynamic Motor Impedance,"IEEE Tran. on Power Engineering Review, March 1991. (Paper Summary)

Sendaula, S. Biswas, A. Eltom, C. Parten, and W. Kazibwe, "Application of Artificial Neural Networks to Unit Commitment ",International Forum On Application of Neural Networks to Power System, Seattle ,Washington , July 1991. Conf. Proceeding pp. 256-260.

N.D. Sadanandan, A.H. Eltom, " Experience with the Power Donut System, Laboratory Test and Data Analysis," IEEE Southeastcon 90. Conference proceedings pp. 675 - 79.

A.H. Eltom, T. H. Ortmeyer, "Protection of Motors During Unbalanced System Faults," IEEE Industry Application Society Annual Meeting, 1985 Conference proceedings, pp. 371-75.

T.H. Ortmeyer and A.H. Eltom, "Induction Motor Response to Single Phase to Ground Fault," IEEE Industrial and Commercial Power Systems, 1982, Conference Records, pp. 1-4.

4. Technical Reports

Economics of Energy Efficient Motors Under Polluted Power System. Contract (1994-1995)

Evaluation of Energy Savings with use of Energy Efficient Motors Contract No. TV-79590T (1990- 92)

Wrote a Comprehensive Reference Guide on Evaluating Energy Efficient Motors. Contract No. TV-79590T (Oct 1990-May 1991)

Evaluation of Energy Savings with use of Energy Efficient Motors. Contract No. TV. 79590T.(89- 90)

Laboratory Plan to Test and Evaluate the Power Donut System. TV.R&D 1989/88

Field Plan to Test and Evaluate the Power Donut System. TV. R&D-1989/88

Experimental Plan to Evaluate the Distribution Automation to be implemented on Knoxville Utilities Board's Distribution System under the Two Way Power Line Carrier Communication, Distribution Automation and Control Projects. 1985.

Design and Development of a Mobile Fast Transient Data Acquisition System. 1985

5. ***Sponsored Research and External Funding:***

Schweitzer Engineering Laboratories, ABB, GE, Tennessee Valley Authority (TVA), and Omicron Inc

$283,325 Received new test systems and relays from ABB, TVA, Schweitzer Laboratories, and Omicron Inc support the Relay Laboratory 2003-04

$36,100 Received new test systems and relays from TVA, Schweitzer Laboratories to support the relay laboratory 2003

$27,690 Received new test systems and relays from TVA, Schweitzer Laboratories to support the relay laboratory 2001-02

$39,232 Received new test systems and relays from Volunteer Electric and Schweitzer laboratories to support the Relay Laboratory 1999-2000

The Electric Power Board of Chattanooga

$125,000 Contract to train company engineers to setting and testing digital relays 2002

The Electrical Power Research Institute (EPRI) and Tennessee Valley Authority

$44,5000 Grant from EPRI, and TVA to develop the Power Engineering Laboratory 1998

$30,000 Equipment donation from EPRI, to test the performance of Written Pole Motors and develop the power Laboratory 1999

$15,000 Tortional Vibration Machine, donation from TVA 1995

The Council for International Exchange of Scholars (Fulbright)

$69,000 Fulbright Scholar to Lecture and conduct research at the University of Qatar for the academic year

Tennessee Valley Authority

$31,025 Economics of Energy Efficient Motors Under Unbalanced Voltage Conditions. Contract No. TV-85688V July 1994 – May 1995

$24,734 Motor Reference Guide Contract No. TV-79590T October 1990 – May 1991

$11,570 Motor Reference Guide Contract No. TV-79590T June 1990 – September 90

$23,659 Motor Reference Guide. Contract No. TV. 79590T 11,20,89 – 8,31,90

$15,467 Laboratory Plan to Test and Evaluate the Power Donut System. Contract No. TV-48192A 1987 – 88

$15,467 Field Plan to Test and Evaluate the Power Donut System. Contract No. TV-48192A 1987 – 88

$9446 Experimental Plan to Evaluate the Distribution Automatons to be implemented on Knoxville utilities Board's Distribution System under the Two Way Power Line Carrier Communication, Distribution Automation and Control Projects. Contract No. TV-48192A May – July 1985

$14,295 Design and Development of a Mobile Fast Transient Data Acquisition System. Contract No. TV-48192A May – October 1985

American Society for Engineering Education (ASEE)

$1750 Structure and Interpretation of Computer Programs Short Course, MIT, 1987

6. ***Internal Funding***

UC Foundation

$25,125 Sabbatical to lecture and conduct research overseas, 1996/97

$6,000 Distinguishing Teaching Professorship, 1991-94

$1,234 Faculty Development to attend a short course on computer relaying, 1988

CECA

$2000 Modeling and Protection of Induction Machines, 1985

$2880 Microprocessor Motor Protection, 1989

GRADUATE STUDENTS SUPERVISED:

Fadyile Oladokun" Effect of Harmonics on Energy Efficient Motors," Aug. 2009

Aliosman Demibas," Laboratory Testing and Evaluation of Harmonics effect on Induction Motors" Dec. 2008

Womack, Tamatha**,"** Generator Protection Scheme to Reduce Single Point Failure while Maintaining Safety." The University of Tennessee at Chattanooga May 2008

Khadam, Ashraf," Evaluating the performance of Schweitzer 300-G generator protection unit in a laboratory environment," Special Project presented for Master of Science Degree, The University of Tennessee at Chattanooga, May 2008

JoAnn Vann," Microprocessor –Based Relay laboratory II," Special Project presented for Master of Science Degree, The University of Tennessee at Chattanooga, December 2005.

Mohammed Abdul Aziz," Effect of Voltage Unbalance on Energy Efficient Motors Compared to Standard Motors" The University of Tennessee at Chattanooga, Aug 2003

Pushkar Chindhade, "A Study of Interference between Direct-Sequence and Frequency-Hopping Spread Spectrum Wireless LANS in the 2.4 GHz Band." The University of Tennessee at Chattanooga, Feb 2002

Phil Soo Yum**, "**The Diagnostic of Partial Discharge With Acoustic Monitoring in GIS Equipment" The University of Tennessee at Chattanooga, December 2001

Rusapat Harnchotipun, "Microprocessor-Based Relay laboratory" The University of Tennessee at Chattanooga, December 2001

Sandeep, Sadanandan, "Protecting a multiterminal line power System With Adaptive Relaying" The University of Tennessee at Chattanooga, January 2000

Bidwell, Brian, " Case Study Comparison of Standard and Energy Efficient Polyphase Induction Motors Subjected to Unbalanced Phase Voltages" The University of Tennessee Dec. 1998

Hamad Almari and M Abdelatif," Evaluation of Energy Efficient Motors Under Unbalanced Voltage Conditions" The University of Qatar, Feb. 1998.

Navid Habib, "Economics Of Energy Efficient Motors when Subjected to Harmonics" The University of Tennessee at Chattanooga, Dec. 1995.

Ziad Abzaid, "Effect of voltage unbalance on the performance and Economics of Energy Efficient Motors," The University of Tennessee at Chattanooga, 1994.

Kalpana Anataraman, "Estimating Rising and Cooling Process in Induction Machines Using Electrical, Mechanical and Thermal Models," The University of Tennessee at Chattanooga, 1993.

John Sawan," The Smart Motor Relay," The University of Tennessee at Chattanooga, 1991.

A. Alibakhshi, "Rotor Bar Design: A New Approach to Improve Motor Efficiency," The University of Tennessee at Chattanooga, 1989.

N.S. Moharari, "Microprocessor Based Protection of Induction Motors, Using Thermal, Mechanical, and Electrical Models to Predict Motor Temperature Rise," The University of Tennessee at Chattanooga, 1989.

G.G. Davis, "Ground Relay Study on the Distribution System," The University of Tennessee at Chattanooga, 1986.

PROFESSIONAL MEMBERSHIP, ACTIVITIES, and HONORS:

***Honors*:**

Fulbright Scholar 1996/ 97, State of Qatar
Distinguished Teaching Professor at the University Of Tennessee at Chattanooga
College of Engineering outstanding Research Award 2000
Who and Who in American Men and Women Scientists
Former Member American Arbitration Association
Consultant for the African Development Bank
Nominated for college outstanding teaching award 2006

IEEE

Chairman, IEEE Power Engineering Society The Greater Chattanooga Section 1998- 2005
The Institute of Electrical and Electronic Engineers
Industry Applications Society
Power Engineering Society

Conferences and Workshops

Organizer and Moderator, Motor Challenge Conference, UTC 1998
Organizer and Moderator, Motor Challenge Teleconference, UTC 1998
Panelist and Speaker, Relaying Workshop, TVA 2001
Organizer and Moderator short Course on Reactive Power 2006
Presenter: Power Faculty Workshop on Reforming the Power Curriculum 2007
IEEE Transmission and Distribution Latin America Technical Program Committee
Reviewer ASEE South East Conference
Reviewer IEEE Power Africa

Students

Graduate students Coordinator 1997- Present
Former IEEE Students Chapter Counselor
Founder and Advisor, NSBE Student Chapter at UTC 1989-2002
Founder, Student's Horizon Festival at College of Engineering and Computer Science

Institutional Service

Distinguished Professorship Rank
University Faculty Council
Faculty Development Grants Committee
Budget and Status Committee
Athletic Committee
SACS Athletics Subcommittee
Curriculum Committee
Handbook Committee

General Education Committee
Instructional Excellence committee
Distinguished Professorship Rank
Graduate Council
SACS Graduate Subcommittee

College service

College Assessment Committee (**ABET EE lead faculty**) 2001-Present
EE and CPSC curriculum and Grade Appeal Committees, 1997
EE Curriculum Committee 1998-02
College Curriculum Committee 2000-02
College Graduate Committee 2002-present
College Dean Search Committee 2002-04
College Graduate Committee

TEACHING:

Courses Taught:

ENEE 472: Power System Analysis
ENEE 499: Power System Analysis II
ENEE 380: Electric Machines
ENEE 381: Electric Machines Laboratory
ENEE 325: Dynamic Systems II
ENEE 272: Electrical Circuits I
ENEE 271: Electrical Circuits Lab I
ENEE 270: Electrical Circuits
ENEE 272: Electrical Circuits II
CPSC 118: Computer Programming
ENEE 372: Electronic Circuits II
ENEE 379: Electronic Circuits Lab II
ENEE 113: Freshman Eng. Laboratory
EGEE 574: Power System Stability
EGEE 552: Power Operations
EGEE 562: Power System Protection
EGEE 562: Relaying Laboratory

Courses Developed:

EGEE 552: Power Operations
EGEE 562: Protective Relaying
ENEE 499: Power System Analysis II

Laboratories Developed:

ENEE 381: Electric Machines
EGEE 562: Power system Relaying Industrial grade laboratory

References:

Dr. Ronald B. Cox
Burkett Miller Chair of Excellence in Management and Technology and former Dean
College of Engineering and Computer Science
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Home telephone 423 886 1292
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Rotational Management and development
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Department of Electrical and Computer Engineering
Auburn Science Engineering Center
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Home Telephone: 330 836 4582
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