



Prof. Dr. Ömer Usta
Electrical Engineering
Istanbul Technical University
34469 Maslak, Istanbul

E-mail: ustao@itu.edu.tr

E-mail2: usta@ieee.org

Dr. Omer Usta received his BEng and MSc in Electrical Engineering from Istanbul Technical University in 1984 and 1988 respectively, and received his PhD in Electronics and Electrical Engineering from the University of Bath in 1993. He re-joined ITU in 1993 where he is presently a Professor of Power System Protection & Communications. He has been responsible for developing and running highly successful courses on Smart Grid such as Computer Networks for Power Systems, Power System Control and Communications, Power Transmission Systems, Power Generation, and Computer Relaying for Power Systems.

Dr. Usta's research interests include computer and communications applied to Smart Grid metering, protection, control and operation. He has published numerous conference and journal papers. He is currently an investigator and primary consultant on a number of research projects, including Design of Intelligent Electronic Devices, Remote Reading& Monitoring Systems, and Computer Networks for Power Systems funded by TÜBİTAK, ITU and Turkish Industry.

Dr. Usta was the **Head of the Electrical Engineering Department** between 2007 and 2010, and the **Dean of Electrical and Electronic Engineering Faculty** of Istanbul Technical University between 2010 and 2013. He was also the General Chair of IEEE PES ISGT Europe 2014 held in Istanbul. He is currently IEEE PES Turkey Chapter Chair. He is the ABET Coordinator of Electrical Engineering Program which was fully accredited by the ABET in 2011. He is married and has two sons.

1. Academic title and name: PROF. DR. ÖMER USTA		
2. Degrees with fields, institution and dates		
Degree of Field	Institution	Date
BSc, Electrical Engineering	ITU	1984
MSc, Electrical Engineering	ITU	1988
PhD, Electronics &Electrical Engineering, University of Bath, UK		1993
3. Number of years of this faculty: 29		
Date of Original Appointment: 1986		
1986-1988	Teaching Assistant	
1993-1994	Assistant Professor	
1994-2001	Associate Professor	
2001- ...	Professor	
4. Other related experience — teaching, industrial etc.		
<u>Educational Experience</u>		

<ul style="list-style-type: none"> • Courses Taught: Power Transmission Systems, Microprocessor Systems, Digital Protection and Signaling, Power System Control and Communications, Computer Relaying for Power Systems
<ul style="list-style-type: none"> • Thesis Supervised: 3 PhD, 20 MS
Industrial Experience
<ul style="list-style-type: none"> • Enrolled 6 different Research Projects and 15 Industrial Projects (in England and Turkey).
5. Consulting, patent, etc
Smart Grid and Intelligent Electronic Devices, ENTES ELECTRONIC, 2000,
<ul style="list-style-type: none"> • Remote Reading and Automatic Meter management, MAKEL ELECTRIC, 2004-2010.
<ul style="list-style-type: none"> • 6. Principal Publications (selected)
[1] B Feizifar, Ö Usta, MR Haghifam, "Impact of distributed generation on transient-based fault location techniques in distribution networks" IEEJ Transactions on Electrical Engineering, 2015 DOI: 10.1002/tee.22079.
[2] O Dağ, C Uçak, Ö Usta, " Harmonic Source Location And Meter Placement Optimization By Impedance Network Approach", Journal of Electrical Engineering March 2012, Volume 94, Issue 1, pp 1-10.
[3] O Özgönel, Irfan Güney, Ö Usta, H Dirik, "A Novel Three-Phase Transformer Hysteresis Model In MATLAB™ Simulink", Turk. J. Elec. Eng. & Comp. Sci., 20, (2012), pp. 479-492.
[4] E Kılıç, O Özgönel, Ö Usta, "PCA Based Protection Algorithm for Transformer Internal Faults", Turkish Journal of Electrical Engineering and Computer Sciences, Vol. 17, No. 2, 2009, s. pp.125-142, ISSN: 1300-0632.
[5] Ö. Usta, M. H. Musa, M. Bayrak, M.A. Redfern, M.A. Redfern, "A New Relaying Algorithm to Detect Loss of Excitation of Synchronous", Turkish Journal of Electrical Engineering and Computer Sciences, Vol. 15, No. 3, 2007, pp. 339-349, ISSN: 1300-0632.
[6] I Genç, and Ö Usta, "Impact of Distributed Generators on the Oscillatory Stability of Interconnected Power Systems", Turkish Journal of Electrical Engineering and Computer Sciences, Volume.17, Issue.2, pp.125-142, 2, Vol. 13, No. 1, 2005, pp. 149-160.
[7] Ö. Usta, M Bayrak, MA Redfern, "A New Digital Relay for Generator Protection against Asymmetrical Faults", IEEE Trans. on Power Delivery, Vol. 17, No. 1, 2002, pp. 54-59.
[8] Ö Usta, M Bayrak, "A New Power Based Digital Algorithm for Generator Protection", IEEE Power Engineering Review (Power Delivery), Vol. 20, No. 2, 02/2000, s. 49-52.
[9] Usta Ö., Kaypmaz A., Gül Ö., "Application of Diakoptics to Power System Analysis", Bulletin of the Technical University of Istanbul, Vol.49, No.3-4, pp. 389-401, 1996.
[10] MA Redfern, J Barrett, Ö Usta, "A New Microprocessor Based Islanding Protection Algorithm for Dispersed Storage and Generation Units", IEEE Trans. on Power Delivery., Vol. 10, No. 3, 1995, pp. 1249-1254.
[11] M A Redfern, Ö Usta, G Fielding, E P Walker, "A Power Based Algorithm to Provide Loss of Grid Protection for Embedded Generation", IEE (IET) Proceedings on Generation, Transmission and Distribution, Vol. 141, No. 6, 12/1994, pp. 640-646,
[12] MA Redfern, Ö Usta, G Fielding, " Protection Against Loss of Utility Grid Supply for a Dispersed Storage and Generation Unit", IEEE Trans. on Power Delivery ,Vol. 8, No. 3, 07/1993, pp. 948-954.
[13] Redfern, M.A.; Barrett, J.I.; Usta, O.; Yip, T., "A new microprocessor based loss of grid protection for embedded generation". 2nd International Conference on Advances in Power

System Control, Operation and Management, APSCOM-93. IET Conference Publications vol.1, Pages: 373 - 378

[14] Redfern, M.A.; Usta, O.; Barrett, J.I.; Fielding, G., "**A new digital relay for loss of grid to protect embedded generation**". The Fifth International conference on Developments in Power System Protection, 1993. IET Conference Publications pp: 127 - 130.

[15] Redfern, M.A.; Usta, O.; Barrett, J.I., "**Loss of grid protection for an embedded generator**". IEE Colloquium on Effective Response of a Public Electricity Network to Independent Generators, 1993. IET Conference Publications Pages: 4/1 - 4/6.

[16] Usta, O.; Redfern, M.A.; Barrett, J.I., "**Protection of dispersed storage and generation units against islanding**". 7th Mediterranean Electrotechnical Conference Proceedings, 1994. IEEE Conference Publications Pages: 976 - 979 vol.3, DOI: 10.1109/MELCON.1994.380938,

[17] Kaypmaz, A.; Tokad, Y.; Usta, O. "**Diakoptics-a parallel processing approach for the analysis of large-scale power systems**". 7th Mediterranean Electrotechnical Conference Proceedings, 1994. IEEE Conference Publications Pages: 1069-1072 vol.3, DOI: 10.1109/MELCON.1994.380885

[18] Usta, O.; Redfern, M.A.; Tarkan, N.; Erdogan, Z., "**Analysis of out of phase reclosing required for the protection of dispersed storage and generation units**". 8th Mediterranean Electrotechnical Conference, 1996. MELECON '96. IEEE Conference Publications Volume: 2, Pages: 742 - 745 vol.2, DOI: 10.1109/MELCON.1996.551323.

[19] Redfern, M.A.; Barrett, J.I.; Usta, O., "**A New Loss Of Grid Protection Based On Power Measurements**". Sixth International Conference on Developments in Power System Protection, 1997. IET Conference Publications pp: 91 - 94, DOI: 10.1049/cp:19970036.

[20] Usta, O.; Redfern, M.A.; Bayrak, M., "**Data Communications For Power System Relaying**". 9th Mediterranean Electrotechnical Conference, MELECON 98. IEEE Conference Publications Pages: 964 - 968 vol.2, DOI: 10.1109/MELCON.1998.699371.

[21] Usta, O.; Bayrak, M.; Redfern, M.A.; Musa, M.H., "**Microprocessor-based out-of-phase reclosing protection for nonutility generation units**". International Conference on Electric Power Engineering, 1999, PowerTech Budapest 99. IEEE Conference Publications Page: 253, DOI: 10.1109/PTC.1999.826685.

[22] Usta, O.; Bayrak, M.; Ozdemir, M., "**A New Digital Relay To Provide Protection Against Unbalanced Fault Conditions**". Seventh International Conference on (IEE) Developments in Power System Protection, 2001. IET Conference Publications Pages: 426 - 429, DOI: 10.1049/cp: 20010190.

[23] Usta, O.; Bayrak, M.; Redfern, M. A., "**A New Digital Relay for Generator Protection against Asymmetrical Faults**". IEEE PES Power Engineering Review, 2001. IEEE Journals & Magazines, Vol. 21, Issue. 11, Pages: 58 - 58, DOI: 10.1109/MPER.2001.4311160.

[24] Redfern, M.A.; Rusek, B.; Usta, O. "**A Novel Numeric Relay Algorithm For Extracting Negative Phase Sequence Quantities From Three-Phase Measurements**". IEEE Power Engineering Society Summer Meeting, 2002. IEEE Conference Publications Volume: 3, pp.1073-1077. DOI: 10.1109/PES.2002.1043422.

[25] Ozgonenel, O.; Dirik, H.; Guney, I.; Usta, O., "**A new transformer hysteresis model in MATLAB™ Simulink**". PowerTech, 2009 IEEE Bucharest, 2009. IEEE Conference Publications. Pages: 1 - 7, DOI: 10.1109/PTC.2009.5282234.

[26] Yumak, K.; Usta, O. "**A Controversial Issue: Power Components in Non-sinusoidal Single-Phase Systems**". 7th International Conference on Electrical and Electronics Engineering (ELECO), 2011. IEEE Conference Publications Pages: I-157 - I-161.

[27] Maleki, H.; Khederzadeh, M.; Asgharian, V.; Usta, O., "**Managing Microgrid Power Generation By Using Back To Back Voltage Source Converter**". IEEE PES Innovative Smart Grid Technologies Conference Europe (ISGT-Europe), 2014. IEEE Conference Publications Pages: 1 - 6, DOI: 10.1109/ISGTEurope.2014.7028958.

7. Professional societies of which he/she is a member:

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| • IEEE Power Engineering Society since 1991. |
| • IEEE Communication Society since 2000. |
| • The Chamber of Turkish Electrical Engineering since 1985. |

8. Honors and Awards

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| • Scholarship from Turkish High Education Council for PhD study in U.K. |
| • IEEE TR Chapter Engineering Award 2000. |

9. Institutional and professional services

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| • Head of Department of Electrical Engineering since 2007. |
| • Chair of IEEE PES Turkey Chapter, since 2009. |

10. Professional development activities
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| • ABET Team Leader for the Accreditation of Electrical Engineering Program. |
| • Member of University Accreditation Committee. |
| • Attendance to many national and international conferences as a steering committee member, chairmen and speaker. |
| • Attendance to ABET Workshop at ITU, 2009. |
| • General Chair of IEEE PES ISGT Europe 2014, Istanbul. |