

CURRICULUM VITAE

KONSTANTINOS O. OUREILIDIS

DR. ELECTRICAL AND COMPUTER ENGINEERING

THESSALONIKI, NOVEMBER 2023

Περιεχόμενα

| | |
|--|----|
| 1. General Information | 2 |
| 1.1 General Data..... | 2 |
| 1.2 Personal Data | 2 |
| 1.3 Studies – Academic Titles | 3 |
| 1.4 Working Experience..... | 3 |
| 1.5 Memberships..... | 4 |
| 1.6 Languages | 4 |
| 1.7 Major Academic Awards..... | 5 |
| 2. Academic Activity | 6 |
| 2.1 Teaching of undergraduate courses..... | 6 |
| 2.2 Teaching of master courses..... | 6 |
| 2.3 Supervision of thesis..... | 6 |
| 3. Research Activity | 7 |
| 3.1 Research interests | 7 |
| 3.2 Participation in Research Programs | 7 |
| 3.3 Post-doc research | 7 |
| 3.4 Reviewer | 8 |
| 4. Publications | 9 |
| 4.1 Book chapters..... | 9 |
| 4.2 Papers published in international journals..... | 9 |
| 4.2 Papers published in international conferences..... | 10 |
| 4.3 Papers published in national conferences | 11 |

1. General Information

1.1 General Data

Dr. Konstantinos O. Oureilidis was born in Alexandroupolis at 01-08-1984. From 2008, he holds the Master of Electrical and Computer Engineering from the Aristotle University of Thessaloniki, Faculty of Engineering, Department of Electrical and Computer Engineering with honors, while from July 2015 he holds the PhD Diploma from the same University. During the post-graduate and post-graduate studies, he was distinguished for his excellent performance from the State Scholarships Foundation, Academy of Athens and other endowment scholarships. During the academic years 2015-2016 and 2016-2017, he received the scholarship for conducting post-doc researches in Greece from the State Scholarships Foundation under the IKY-Siemens Program. Furthermore, he holds the Master on Business Administration from the University of Macedonia in Greece. He has published 1 book chapter, 14 papers in international journals with peer-to-peer review and 21 papers in international conferences with peer-to-peer review. During the PhD studies, he has taught for several courses of the last two semesters of the Energy Sector of the Department of Electrical and Computer Engineering, while during the academic year 2016-2017, he was an adjunct lecturer for the course of Electric Motion Systems. During 2017-2022, he worked at the Greek Electricity Market Operator for the design and operation of the new electricity Markets in Greece, being Head of Markets Support at Markets Operation Department. Since April 2022, he is an Assistant Professor at the Department of Electrical and Computer Engineering, University of Western Macedonia.

His main research interests are focused on the electricity markets, distributed generation, control of power converter, renewable energy sources, microgrids, protection, loss minimization and design of electricity markets.

1.2 Personal Data

Name/Surname: Konstantinos Oureilidis

Date of birth: 01/08/1984

Place of work: ZEP Campus, University of Western Macedonia, Kozani

Nationality: Greek

Telephone: +30 24610 56519

Status: Married with two children

e-mail: koureilidis@uowm.gr

1.3 Studies – Academic Titles

- 07/2015 – 12/2021** Post-doc researcher, Aristotle University of Thessaloniki, Faculty of Engineering, Department of Electrical and Computer Engineering, Greece
- 12/2010 – 07/2015** PhD Candidate, Aristotle University of Thessaloniki, Faculty of Engineering, Department of Electrical and Computer Engineering, Greece
Grade: “Honors”
Subject of PhD dissertation: *“Decentralized control methods of microgrids with RES for the improvement of steady-state and transient operation”*
Supervisor: Dr. Charis Demoulias
- 09/2008 – 12/2015** Bachelor in Business Administration, School of Business Administration, University of Macedonia, Greece
Grade: 7.53/10
- 09/2002 – 03/2008** Master in Electrical and Computer Engineering, Aristotle University of Thessaloniki, Faculty of Engineering, Department of Electrical and Computer Engineering, Greece
Grade: 8.96/10
Subject of Thesis: *“Study of the dynamic and transient behavior of a wind park consisted of synchronous and inductive generators”*
Supervisor: Dr. Charis Demoulias
- 09/1990 – 06/2002** Basic education
Grade of high school graduation: 19.5/20

1.4 Working Experience

- 04/2022 – today** Assistant Professor, Faculty of Engineering, University of Western Macedonia, Department of Electrical and Computer Engineering
- 09/2020 – 04/2022** Adjunct lecturer for the course of “Power Electronics” (5th semester), “Special Issues on Power Electronics” (9th semester) and “Power Electronics” (8th semester), University of Western Macedonia, Department of Electrical and Computer Engineering, Greece
- 01/2019 – 02/2022** Hellenic Energy Exchange S.A., since 08/2020 Head of Market Support at Markets Operation Department
- 06/2017 – 12/2018** Cooperation with the Greek Electricity Market Operator (LAGIE S.A.) as a special scientist for the design of the new electricity markets in Greece (Forward Market, Day-ahead Market, Intra-day Market, Balancing Market) following the European Target Model

- 10/2016 - 09/2017** Adjunct lecturer for the course of Electric Motion Systems (9th Semester, energy sector), Aristotle University of Thessaloniki, Faculty of Engineering, Department of Electrical and Computer Engineering, Greece
- 10/2016 - 02/2017** Laboratory Associate for the course of Power Electronics (5th Semester), Western Macedonia University of Applied Sciences, Department of Electrical and Computer Engineering
- 12/2010 - 07/2015** Conducting tutorial and laboratory exercises in the courses of Electrical Machines C, Power Electronics I, Power Electronics II, Electric Motion Systems
- 03/2014 - 06/2014** Conducting seminars entitled: “Electrical Installations – Electrical Drives”, EUREM program, German-Greek Chamber of Commerce, Thessaloniki, Greece
- 04/2012 - 12/2013** Associate at ATE Leasing S.A. for the inspection of Performance Ratio (PR) of PV stations with aggregated nominal power of 4MWp and for the inspection of proper design and construction of PV stations with aggregated nominal power of 6.6MWp
- 04/2012 - 12/2013** Conducting seminars to engineers with subject: “Design and installation of photovoltaic projects (Theory and Practice)”
Coordinator: ENTA (Kavouki Eleni), Thessaloniki, Greece
- 2002 - 2013** Conducting statistical researches
Coordinator: Hellenic Statistical Authority, Alexandroupolis, Greece
- 01/2010 - 07/2011** Electrical Engineer in design and construction with the following subjects:
- Conducting designs and constructions of energy projects (Photovoltaics, Solar-thermal, Small Hydro)
 - Conducting electromechanical projects
 - Energy audits in residential buildings
- Coordinator: Energy Technologies G.P., Thessaloniki, Greece

1.5 Memberships

- Member of Technical Chamber in Greece (T.E.E.)
- Member of the Northern Greece Association of Electrical and Computer Engineering
- Member of the Economic Chamber
- Member of the Institute of Electrical and Electronics Engineers (IEEE)

1.6 Languages

- **English:** Excellent (C2), Certificate of English Proficiency, University of Michigan
- **German:** Very good (C1), Zentrale Mittlestufeproofung, Goethe-Institut
- **Spanish:** Good (B2), DELE Intermedio, Instituto Cervantes

1.7 Major Academic Awards

- Scholarship for 2 post-doc researches, IKY-Siemens program, State Scholarship Foundation (IKY), Program IKY-Siemens (September 2016 – August 2017, August 2015 – September 2016)
- Outstanding Reviewer Award as recognition for the reviews in Renewable Energy, Elsevier (year 2016, September 2015, November 2015)
- Endowment Scholarship for conducting PhD, Academy of Athens, Vasiliki Bekiari Scholarship (Academic years -2014, 2014-2015)
- Best presentation award for research paper, 47th International Universities' Power Engineering Conference (UPEC) (September 2012)
- Best presentation award for research paper, 2nd National Student Conference of Electrical and Computer Engineering (April 2008)
- Granted Scholarship of academic merit by the State Scholarship Foundation, academic years 2004-2005
- Endowment Scholarship of Aristotle University of Thessaloniki, Papamichailidis Scholarship, (Academic years 2004-2005, 2005-2006, 2006-2007)
- Ksipteras Award for the highest score in the courses of Electrical Machines A, B and C (Academic years 2004-2005, 2005-2006)

2. Academic Activity

2.1 Teaching of undergraduate courses

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| 2022 – 2024 | Assistant Professor, “Power Electronics I”, “Power Electronics II”, “Special Issues on Power Electronics”, “Electric Motion Systems” |
| 2020 – 2022 | Adjunct Lecturer of “Power Electronics”, “Special Issues on Power Electronics” and “Power Electronics II” (4 hour/week per course) |
| 2016 - 2017 | Adjunct Lecturer of “Electric Motion Systems” (3 hours/week) Laboratory exercises in the course “Power Electronics” (8 hours/week) |
| 2014 – 2015 | Teaching of tutorial and laboratory exercises in the courses: “Power Electronics II” and “Electric Machines C” (2 hours/week per course) |
| 2013 – 2014 | Teaching of tutorial and laboratory exercises in the courses: “Power Electronics I”, “Power Electronics II”, “Electric Machines C” and “Electric Motion Systems” (2 hours/week per course) |
| 2012 – 2013 | Teaching of tutorial and laboratory exercises in the courses: “Power Electronics I”, “Power Electronics II”, “Electric Machines C” and “Electric Motion Systems” (2 hours/week per course) |
| 2011 – 2012 | Teaching of tutorial and laboratory exercises in the courses: “Power Electronics II”, “Electric Machines C” and “Electric Motion Systems” (2 hours/week per course) |

2.2 Teaching of master courses

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| 2022 | “Energy Markets” at Executive MBA of International Hellenic University |
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2.3 Supervision of thesis

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| 2022 | Papafilippou Panagiotis, “Study of Superconductive Magnetic Energy Storage System for power smoothing” |
| 2017 | Tragianni Stella: “Study of Supercapacitor Energy Storage Systems for power smoothing of a PV installation” |
| 2013 | Kryonidis Giorgos: “ A control method for defining the SoC of distributed batteries in islanded converter-interfaced microgrids with linear and non-linear loads” |

3. Research Activity

3.1 Research interests

- Distributed Energy Resources
- Control of power electronic converters
- Renewable Energy Resources (RES)
- Microgrids
- Loss minimization of microgrids
- Protection of microgrids with RES
- Electricity markets

3.2 Participation in Research Programs

- European Program H2020: Generalized Operational FLEXibility for Integrating Renewables in the Distribution Grid – GoFLEX
- European Program H2020: Integrated Smart GRID Cross-Functional Solutions for Optimized Synergetic Energy Distribution Utilization & Storage Technologies – inteGRIDy
- European Program H2020: Meeting of Energy Professional Skills - MENs
- European Program MED: Promotion of higher penetration of distributed PV through storage for all - StoRES
- European Program H2020: Stimulating scientific through twinning in the quest for sustainable energy – TwinPV
- Intereg Mediterranean Research Program: Promoting Effective Generation And Sustainable Uses of electricity - PEGASUS
- European Program H2020: Enable Ancillary Services by Renewable Energy Sources – EASY-RES
- European Program solar-era.net: Enabling rising penetration and added value of photovoltaic generation by implementation of advanced storage systems – ERIGENEIA
- European Program H2020: TSO-DSO-Consumer INTERFACE aRchitecture to provide innovative grid services for an efficient power system [A methodology for the determination of congestion management requirements at both TSO and DSO levels - OCTANE]
- European Program ENI CBC MED: Cost-effective rehabilitation of public buildings into smart and resilient nano-grids using storage - BERLIN
- Program funded by Giz (Germany): Supporting Solar Energy Communities in SEE - SunSharing

3.3 Post-doc research

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| 2016-2017 | Title: “Development of smart control methodologies for converter-interfaced RES for providing ancillary services to the grid” |
| 2015-2016 | Title: “Decentralized control methods for enhancing the microgrid operation with energy storage systems” |

Supervisor: Dr. Charis Demoulias (Associate Professor)

3.4 Reviewer

- Renewable Energy (Elsevier)
- Ain Shams Engineering Journal (Elsevier)
- IEEE Transactions on Power Delivery
- IEEE Transactions on Power Electronics
- Energies

4. Publications

4.1 Book chapters

BC1. C. Demoulias, KN. Malamaki, G. Kryonidis, E. Kontis, S. Gkavanoudis, K. Oureilidis, JM. Mauricio, "Ancillary services provision in terminal distribution systems", *Reference Module in Materials Science and Materials Engineering, Elsevier*, 2023, ISBN 9780128035818, doi: 10.1016/B978-0-12-821204-2.00042-8)

4.2 Papers published in international journals

J1. K. Oureilidis, C. Demoulias, "An enhanced role for an energy storage system in a microgrid with converter-interfaced sources", *The Journal of Engineering, IET*, 2014

J2. Oureilidis, K.O.; Bakirtzis, E.A.; Demoulias, C.S., "Frequency-based Control Of Islanded Microgrid with Renewable Energy Sources and Energy Storage", *Journal of Modern Power Systems and Clean Energy*, January 2016, doi: 10.1007/s40565-015-0178-z

J3. Oureilidis, K.O.; Demoulias, C.S., "A Decentralized Impedance-Based Adaptive Droop Method for Power Loss Reduction In A Converter-dominated Islanded Microgrid," *Sustainable Energy, Grids and Networks*, Elsevier, vol.5, pp.39-49, March 2016 doi: 10.1016/j.segan.2015.11.003

J4. S. Gkavanoudis, K. Oureilidis, G. Kryonidis, C. Demoulias, "A Control Method for Balancing the SoC of Distributed Batteries in Islanded Converter-interfaced Microgrids", *Advances in Power Electronics*, Hindawi, May 2016, doi: 10.1155/2016/8518769

J5. Oureilidis, K.O.; Demoulias, C.S., "A Fault Clearing Method In Converter-Dominated Microgrids with Conventional Protection Means," *IEEE Transactions on Power Electronics*, vol. 31, no. 6, pp. 4628-4640, June 2016, doi: 10.1109/TPEL.2015.2476702

J6. Kryonidis, G.C.; Kontis, E.O.; Chrysochos, A.I.; Oureilidis, K.O.; Demoulias, C.S.; Papagiannis, G.K., "Power Flow of Islanded AC Microgrid: Revisited", *IEEE Transactions on Smart Grid*, 2018, doi: 10.1109/TSG.2018.2799480

J7. K. Oureilidis; K.N. Malamaki, K. Gallos, A. Tsitsimelis, C. Dikaiakos, S. Gkavanoudis, M. Cvetkovic, J. M. Mauricio, J.M. Maza-Ortega, J.L. Martinez Ramos, G. Papaioannou, C. Demoulias, "Ancillary Services Market Design in Distribution Networks: Review and Identification of Barriers", *MDPI Energies*, 2020, 13(4), 917, doi: 10.3390/en13040917

J8. S. Gkavanoudis; D. Tampakis; K.N. Malamaki; G. Kryonidis; E. Kontis; K. Oureilidis; J.M. Maza-Ortega; C. Demoulias, "Protection philosophy in low short-circuit capacity distribution grids with high penetration of converter-interfaced distributed renewable energy sources", *IET Generation, Transmission & Distribution*, Sep. 2020, doi: 10.1049/iet-gtd.2020.0714

J9. Charis S. Demoulias; Kyriaki-Nefeli D. Malamaki; Spyros Gkavanoudis; Juan Manuel Mauricio; Georgios C. Kryonidis; Konstantinos O. Oureilidis; Eleftherios O. Kontis; and Jose Luis Martinez Ramos, "Ancillary Services Offered by Distributed Renewable Energy Sources at the Distribution Grid Level: An Attempt at Proper Definition and Quantification", *MDPI Applied Sciences*, 2020, 10(20), 7106, doi: 10.3390/app10207106 (Concept Paper)

J10. G. C. Kryonidis; K-N Malamaki; S. Gkavanoudis; K. Oureilidis; et al., "Distributed Reactive Power Control Scheme for the Voltage Regulation of Unbalanced LV Grids," in *IEEE Transactions on Sustainable Energy*, vol. 12, no. 2, pp. 1301-1310, April 2021, doi: 10.1109/TSTE.2020.3042855

J11. A. Forouli, E. Bakirtzis, G. Papazoglou, K. Oureilidis, V. Gkountis, L. Candido, E.D. Ferrer, P. Biskas, "Assessment of Demand Side Flexibility in European Electricity Markets: A Country Level Review", *Energies*, 2021, 14(8):2324, doi:10.3390/en14082324

J12. I. Marneris, A. Ntomaris, P. Biskas, D. Chatzigiannis, C. Demoulias, K. Oureilidis, A. Bakirtzis, "Optimal Participation of RES Aggregators in Energy and Ancillary Services Markets", *IEEE Transactions on Industry Applications*, vol. 59, no. 1, Jan-Feb 2023, doi: 10.1109/TIA.2022.3204863

J13. P. Papageorgiou, K. Oureilidis, A. Tsakiri, G. Christoforidis, "A Modified Decentralized Droop Control Method to Eliminate Battery Short-Term Operation in a Hybrid Supercapacitor/Battery Energy Storage System", *Energies*, 2023, 16, 2858, doi: 10.3390/en16062858

J14. P. Papageorgiou, K. Oureilidis, G. Christoforidis, "A systematic review of hybrid superconducting magnetic/battery energy storage systems: Applications, control strategies, benefits, limitations and future prospects", *Renewable and Sustainable Energy Reviews*, 2023, Volume 183, 113436, doi: 10.1016/j.rser.2023.113436

4.2 Papers published in international conferences

C1. K. Oureilidis, C. Demoulias, "Microgrid wireless energy management with energy storage system", *47th International Universities' Power Engineering Conference (UPEC)*, London, UK, 4-7 September 2012

C2. S. Gkavanoudis, K. Oureilidis, C. Demoulias, "Fault ride-through capability of a microgrid with wtgs and supercapacitor storage during balanced and unbalanced utility voltage sags", *2nd International Conference on Renewable Energy Research and Applications (ICRERA)*, Madrid, Spain, 20-23 October 2013

C3. K. Oureilidis, C. Demoulias, "A Control Strategy for Inverter-Interfaced Microgrids Under Symmetrical and Asymmetrical Faults", *2nd International Conference on Renewable Energy Research and Applications (ICRERA)*, Madrid, Spain, 20-23 Oct. 2013

C4. K. Oureilidis, C. Demoulias, "Fault Clearing In A Converter-Dominated Microgrid With Traditional Protection Means", *IEEE 5th International Symposium on Power Electronics for Distributed Generation Systems (PEDG)*, Galway, Ireland, 24-27 June 2014

C5. S. Gkavanoudis, K. Oureilidis, C. Demoulias, "An Adaptive Droop Control Method for Balancing the SoC of Distributed Batteries in AC Microgrids", *7th IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, Trondheim, Norway, 27-30 June

C6. K. Oureilidis, S. Gkavanoudis, C. Demoulias, "Impedance-based Adaptive Droop Method in Islanded Microgrids with Three-phase and Single-phase Converters for Line Loss Reduction", *7th IEEE Workshop on Control and Modeling for Power Electronics (COMPEL)*, Trondheim, Norway, 27-30 June 2016

C7. K. O. Oureilidis, S. I. Gkavanoudis, K. N. Malamaki and C. S. Demoulias, "Fault detection and clearing control strategy in an islanded microgrid with converter-interfaced sources," *IEEE Manchester PowerTech*, Manchester, 18-22 June 2017

C8. S. Dimitra Tragianni, K. O. Oureilidis and C. S. Demoulias, "Supercapacitor sizing based on comparative study of PV power smoothing methods," *52nd International Universities Power Engineering Conference (UPEC)*, Heraklion, 28-31 August 2017

C9. K. N. D. Malamaki, C. S. Demoulias, K. O. Oureilidis, "Analytical calculation of the PV converter efficiency curve at non-unity power factors," *52nd International Universities Power Engineering Conference (UPEC)*, Heraklion, 28-31 August 2017

- C10.** V. Machamint, K. Oureilidis, V. Venizelou, V. Efthymiou, G. Georghiou, "Optimal Energy Storage Sizing of a Microgrid under Different Pricing Schemes," *IEEE 12th International Conference on Compatibility, Power Electronics and Power Engineering (CPE-POWERENG 2018)*, Doha, Qatar, 10-12 April 2018
- C11.** V. Machamint, K. Oureilidis, V. Efthymiou and G. E. Georghiou, "Investigation of the Role of an Aggregator Operating in the European Spot and Balancing Markets; the Case of an Island," *2018 15th International Conference on the European Energy Market (EEM)*, Lodz, 2018, pp. 1-5, 27-29 June 2018
- C12.** K.O. Oureilidis, V. Machamint, V. Efthymiou, G.E. Georghiou, I. Papageorgiou, "Demonstration Tools for Trading Flexibility in Distribution Grids in Cyprus – The Cases of a Microgrid and Dispersed Prosumers", *6th International Conference on Renewable Energy Sources & Energy Efficiency*, Nicosia, Cyprus, pp. 1-10, 1-2 November 2018
- C13.** V. Machamint, K. Oureilidis, C. Chalambides, V. Efthymiou, G. Georghiou, "Promoting Effective Generation and Sustainable Uses of electricity (PEGASUS) – The case of the FOSS lab area nanogrid", *6th International Conference on Renewable Energy Sources and Energy Efficiency (RESEE2018)*, Nicosia, Cyprus, pp. 1-11, 1-2 November 2018
- C14.** M. Florides, K. Oureilidis, V. Efthymiou, G. Georghiou, B. Kubicek, J. Kathan, S. Ubermasser, I. Ilicic, P. Rechberger, H. Heigl, A. Violaris, I. Papageorgiou, K.C. Bayindir, A. Kilic, G. Batar, A. Bayramoglu, S. Baykal, A. Terciyanli, "Enabling rising penetration and added value of photovoltaic generation by implementation of advanced storage systems (Erigenia)," *9th Solar Integration Workshop*, Dublin, October 2019
- C15.** K. Oureilidis; K-N Malamaki; S. Gkavanoudis; J-L Martinez-Ramos; C. Demoulias; "Development of Cost-Functions for the remuneration of New Ancillary Services in Distribution Networks", *9th International Conference on Renewable Power Generation*, Dublin, March 2021
- C16.** S. Gkavanoudis; D. Tampakis; K. Oureilidis; K-N Malamaki; C. Demoulias; "A Novel Protection Philosophy for Distribution Grids with High Share of Converter-Interfaced Distributed Renewable Sources", *9th International Conference on Renewable Power Generation*, Dublin, March 2021
- C17.** K. Oureilidis; S. Gkavanoudis; C. Demoulias; "Formulation of Parametric Cost-functions for Ancillary Services from Distributed Renewable Energy Resources in Distribution Networks", *CIREN 2021 – The 26th International Conference and Exhibition on Electricity Distribution*, Geneva, September 2021
- C18.** P. G. Papageorgiou, K. O. Oureilidis and G. C. Christoforidis, "Enhancing Stability of DC Microgrids Employing SMES-Battery Hybrid Energy Storage System," *2022 Workshop on Blockchain for Renewables Integration (BLORIN)*, Palermo, Italy, 2022, pp. 85-90, doi: 10.1109/BLORIN54731.2022.10028410.
- C19.** P. G. Papageorgiou, K. O. Oureilidis and G. C. Christoforidis, "An effective control algorithm for hybrid superconducting magnetic/battery energy storage systems employed in DC microgrids," *2023 IEEE Belgrade PowerTech*, Belgrade, Serbia, 2023, pp. 1-6, doi: 10.1109/PowerTech55446.2023.10202687.

4.3 Papers published in national conferences

- N1.** Γ. Κρυωνίδης, Κ. Ουρεϊλίδης, Χ. Δημουλιάς, "Μέθοδος Ανίχνευσης Επιπέδου Φόρτισης Μπαταριών σε Μικροδίκτυο με Διανεμημένες Πηγές Παραγωγής και Γραμμικά/μη Γραμμικά Φορτία", 6^ο Πανελλήνιο Συνέδριο Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών (ΣΦΗΜΜΥ), 26-28 Απριλίου 2013

N2. Κ. Ουρεΐλιδης, Σ. Γκαβανούδης, " Δυναμική και μεταβατική συμπεριφορά αιολικού πάρκου με σύγχρονες και ασύγχρονες γεννήτριες", 2^ο Πανελλήνιο Συνέδριο Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών (ΣΦΗΜΜΥ), Απρίλιος 2008