

Dr. Nick Papanikolaou is an Assistant Professor at Democritus University of Thrace (DUTH), Department of Electrical & Computer Engineering, where he teaches Power Electronics. His research interests include power electronic converters topologies and their applications to all-electric vehicles, to renewable energy sources &

energy saving, as well as to power quality improvement. He is the author and coauthor of 50 research and technical papers in his field, which have been cited in more than 500 papers by third researchers. He has 15 years of experience in the Electric Energy Industry and Market, as well as in National and European research programs in his field (Clean Sky, Hellenic Cooperation, Hellenic SMEs, etc). Dr. Papanikolaou is a Senior Member, IEEE, a CIGRE Member and a Member of the Technical Chamber of Greece.

Education:

- **2002:** PHD in Electrical & Computer Engineering (Power Electronics), from University of Patras.
- **1998:** Diploma (5-year studies) in Electrical & Computer Engineering (Power Systems), from University of Patras.

Employment History:

- August 2013 today: Assistant Professor at Democritus University of Thrace, in the field of Power Electronics.
- April 2008 August 2013: Lecturer at Technical Educational Institute of Lamia, Greece, in the field of Power Systems, Power Electronics and Electric Drives.
- March 2005 April 2008: Power Systems Analysis Expert Engineer at Hellenic Transmission System Operator (HTSO S.A.), engaged with Hellenic and European System Studies including
 - Connection of Turkey with the synchronous UCTE zone (static studies).
 - Secretary of the UCTE South East Regional Forum for the coordination planning of transmission projects.
 - Maximum penetration level assessment of Wind Farms in the North Hellenic System.
 - \circ $\,$ Calculation of load losses factors for the Hellenic Distribution Network.
 - Power quality studies for the Hellenic System.

• July 2004 – March 2005: Senior Engineer at Athens Trolleybuses S.A., engaged with the setup of the new 250 Trolleybuses of the company, in cooperation with Kiepe S.A.

List of recent research projects:

- CLEAN SKY JOINT UNDERTAKING: Thermoelectric cooling using innovative multistage active control modules - THERMICOOL (01/06/2014-31/05/2016). Head of the DUTH research group, engaged with the design and prototyping of the power electronic converters that are controlling the thermoelectric cooling process in aircraft electronic devices.
- 2) CLEAN SKY JOINT UNDERTAKING: Innovative management of energy recovery for reduction of electrical power consumption on fuel consumption - RENERGISE (01/07/2011-31/10/2014). Member of the research group, engaged with the design and testing of the power electronic converters that are implementing the Dynamic and Static Waste Heat Recovery in aircrafts.
- 3) HELENIC COOPERATION 2011: Fuel consumption reduction in marine power systems through innovative energy recovery management – ECOMARINE (02/01/2013-30/06/2015). Head of the KTESE research group, engaged with the design and setup of the power electronic converters that are implementing the Static Waste Heat Recovery in ships.
- HELENIC COOPERATION 2009: Energy saving in elevator systems LESS (18/05/2012-17/05/2015). Head of the TEI of Central Greece research group, engaged with the development and testing of the regenerative braking system for KLEEMANN HELLAS elevator models.
- 5) HELENIC SMEs: Regenerating braking energy for industrial loads 23SMEs2009 (17/2/2011 – 16/8/2014). Head of the research undertaking group, engaged with the development and testing of a plug n play regenerative braking system for industrial loads.
- NATIONAL FRAMEWORK ARCHMEDES 2009: Interconnection of distributed renewable generation in low voltage distribution networks; development and modeling of power converters – DGRES (02/01/2013-30/11/2015). Head of the research group, engaged with the design and modeling of grid-tied inverters for the low voltage network.
- 7) NATIONAL FRAMEWORK THALES 2009: Studying and Resolving Power Quality Problems in Ship Electric Energy Systems – DEFKALION (1/2/2013-

30/**1**/**2015).** Member of the research group, engaged with the analysis of power electronics' solutions for high power quality in ships.

List of completed PhD Theses under his guidance

- George Christidis, "Optimum Flyback micro-inverter design for the interconnection of solar PV panels to the Low Voltage network", 2016, University of Patras, Greece (Member of the Advising Committee).
- Dionisios Voglitsis, "Anti-islanding detection technique for grid-tied current source inverters in the prospect of high penetration level of RES", 2017, Democritus University of Thrace, Greece (Supervisor – President of the Advising Committee).

List of publications in scientific journals:

- E. Karampasis, N. Papanikolaou, D. Voglitsis, M. Loupis, A. Psarras, A. Boubaris, D. Baros, and G. Dimitrakopoulos, "Active Thermoelectric Cooling Solutions for Airspace Applications: the THERMICOOL Project", IEEE Access, (Accepted for publication), DOI: 10.1109/ACCESS.2017.2672818.
- 2) D. Voglitsis, N. Papanikolaou, A. Kyritsis, "Incorporation of harmonic injection in Interleaved Flyback inverter for the implementation of an active antiislanding technique", IEEE Transactions on Power Electronics (Accepted for publication), DOI: 10.1109/TPEL.2016.2646419.
- 3) N. Papanikolaou, M. Loupis, N. Spiropoulos, E. Mitronikas, E. Tatakis, C. Christodoulou, V. Zarikas, T. Tsiftsis, "On the Investigation of Energy Saving Aspects of Commercial Lifts", Springer Energy Efficiency (Accepted for publication).
- 4) G. Christidis, A. Kyritsis, N. Papanikolaou, E. Tatakis, "Investigation of Parallel Active Filters' Limitations for Power Decoupling on Single Stage/Single Phase Micro-Inverters", IEEE Journal of Emerging and Selected Topics in Power Electronics, Vol. 4, Issue 3, September 2016, pp. 1096-1106.
- 5) C. Christodoulou, L. Ekonomou, I. Gonos, N. Papanikolaou, "Lightning protection of PV systems", Springer Energy Systems, Vol. 7, Issue 3, August 2016, pp. 469-482.
- 6) A. Kyritsis, N. Papanikolaou, S. Tselepis, C. Christodoulou: "Islanding Detection Methods for Distributed PV Systems; Overview and Experimental Study (Book Chapter)", Intelligent Solutions for Electricity Transmission

and Distribution Networks, Springer, 2016, pp. 63-79.

- 7) I. Perpinias, N. Papanikolaou, E. Tatakis: "Fault Ride Through Concept in Low Voltage Distributed Photovoltaic Generators for Various Dispersion and Penetration Scenarios", Sustainable Energy Technologies and Assessments, Elsevier, Vol. 12, December 2015, pp. 15-25.
- ⁸⁾ T. Tsiftsis, P. Sofotasios, N. Papanikolaou, M. Loupis: "On the Deployment of a Wireless Sensor Network in Dispersed Renewable Energy Sources for Increasing Efficiency of Power Distribution Networks", Journal of Modern Power Systems and Clean Energy, Special Issue on Active Distribution Systems, Springer, Vol.3, Issue 4, pp.610–618, December 2015.
- 9) N. Papanikolaou, A. Kyritsis, M. Loupis, C. Tzotzos, and E. Zoga, "Design considerations for single phase line frequency transformers applied at photovoltaic systems", IEEE Power and Energy Technology Systems Journal, Vol. 2, No. 3, September 2015, pp. 82-93.
- ¹⁰⁾ I. Perpinias, N. Papanikolaou, E. Tatakis: "Optimum Design of Low Voltage Distributed PV Systems Oriented to Enhanced Fault Ride Through Capability", IET Generation, Transmission & Distribution, Special Issue on Power Electronic Converter Systems for Integration of Renewable Energy Sources, Vol. 9, Issue 10, July 2015, pp. 903–910.
- ¹¹⁾ N. Papanikolaou, C. Christodoulou, M. Loupis: "Introducing an improved bidirectional charger concept for modern residential standalone PV systems", Springer Energy Systems, Volume 6, Issue 1, March 2015, pp. 21-41.
- 12) C.A. Christodoulou, L. Ekonomou, N. Papanikolaou, I.F. Gonos: "The effect of the grounding resistance to the behavior of high voltage transmission lines' surge arresters", IET Science, Measurement & Technology, Vol. 8, Issue 6, November 2014, pp. 470 – 478.
- ¹³⁾ C. Christodoulou, N. Papanikolaou, I. Gonos: "Design of Three-Phase Autonomous PV Residential Systems with Improved Power Quality", IEEE Transactions on Sustainable Energy, Vol. 5, No. 4, October 2014, pp. 1027-1035.
- ¹⁴⁾ A. Kyritsis, N. Papanikolaou, S. Tselepis, C. Christodoulou: "Islanding Detection Methods for Distributed PV Systems; Overview and Experimental Study", Intelligent Solutions for Electricity Transmission and Distribution Networks, Springer, 2014, Accepted for publication.

- ¹⁵⁾ N.P. Papanikolaou: "Low-voltage ride-through concept in flyback inverterbased alternating current-photovoltaic modules", IET Power Electronics, August 2013, Vol. 6, Issue 7, pp. 1436-1448.
- ¹⁶⁾ T. Tsiftsis, N. Papanikolaou, M. Loupis, V Zarikas: "On the application of cooperative communications in renewable energy sources for maximizing the reliability of power distribution networks", Journal of Green Engineering, September 2013, Vol. 3, Issue 4, pp. 403-420.
- 17) N. Papanikolaou, J. Karatzaferis, M. Loupis, E. Tatakis: "Theoretical and Experimental Investigation of Brake Energy Recovery in Industrial Loads", Energy and Power Engineering, September 2013, Vol. 5, pp. 459-473.
- ¹⁸⁾ J. Karatzaferis, N. Papanikolaou, E. Tatakis, M. Loupis, J. Spanoudakis:
 "Comparison and Evaluation of Power Factor Correction Topologies for Industrial Applications", Energy and Power Engineering, August 2013, Vol. 5, pp. 401-410.
- ¹⁹⁾ V. Zarikas, N. Papanikolaou, M. Loupis, N. Spyropoulos: "Intelligent Decisions Modeling for Energy Saving in Lifts: An Application for Kleemann Hellas Elevators", Energy and Power Engineering, May 2013, Vol. 5, pp. 236-244.
- 20) M.I. Loupis, C., Kavadias, N.P. Papanikolaou: "A Component Repository and Search Engine tool for SME software re-users", International Review on Computers and Software, September 2012, Vol. 7, Issue 5, pp. 2139-2148.
- ²¹⁾ A.C. Nanakos, E.C. Tatakis, N.P. Papanikolaou: "A weighted-efficiencyoriented design methodology of flyback inverter for AC photovoltaic modules", IEEE Transactions on Power Electronics, July 2012, Vol. 27, Issue 7, pp. 3221-3233.
- ²²⁾ A. Ch. Kyritsis, E. C. Tatakis, N. P. Papanikolaou: "Optimum design of the current source flyback inverter for decentralized grid-connected photovoltaic systems", IEEE Transactions on Energy Conversion, March 2008, Vol. 23, Issue 1, pp. 281-293.
- ²³⁾ N. P. Papanikolaou, E. C. Tatakis: "Active voltage clamp in flyback converters operating in CCM mode under wide load variation", IEEE Transactions on Industrial Electronics, June 2004, Vol. 51, No. 3, pp. 632-640.
- ²⁴⁾ N. P. Papanikolaou, E. C. Tatakis: "Minimisation of power losses in PFC flyback converters operating in the continuous conduction mode", IEE Proceedings – Electric Power Applications, July 2002, Vol. 149, No. 4, pp.

283-291.

- ²⁵⁾ N. P. Papanikolaou, E. C. Tatakis, "Optimal control of battery chargers with P.F.C. preregulators", Journal of Electrical Engineering (JEE), Vol. 1/2001, No.1, paper No. 3, pp. 20 25.
- 26) N. P. Papanikolaou, E. J. Rikos, E. C. Tatakis, "Novel technique for power factor correction in flyback converters", IEE Proceedings – Electric Power Applications, March 2001, Vol.148, Issue 2, pp. 177 – 186.

Full publication list:

- Google Scholar: <u>http://scholar.google.gr/citations?user=kAVyjjkAAAAJ&hl=el</u>
- Scopus: http://www.scopus.com/authid/detail.url?authorId=55396749200