

**John Chatzakis** received his diploma in Electrical Engineering from the National Technical University of Athens. He received the M.S. degree and the PhD degree from the Dept. of Department of Electronic Engineering and Computer Engineering of the Technical University of Crete, Chania, Crete, Greece. He is currently Associate Professor in the Dept. of Electronic Engineering of the Technological Educational Institute of Crete.

## **WORKING EXPERIENCE:**

From 2000 up to 2004 he was visiting professor in the Dept. of Electronics and Computer Engineering of the Technical University of Crete (TUC).

From 1992 until 2003 he worked as visiting professor in the Dept. of Electronics of the Technological Educational Institute of Crete.

In 2003 he was appointed Lecturer and now is Assistant Professor in the Dept. of Electronic Engineering of the Technological Educational Institute of Crete.

He has worked in programs in the Technical University of Crete:

1. Development of an Uninterruptible Power Supply.
2. Development of an autonomous hybrid system for the energy support of television transponder 1.5KW
3. Development of the charging system for photovoltaic systems.
4. Development of an interface between the sensors and the control system of a building.

He has worked in programs in the Technological Educational Institute of Crete:

1. Technical support for the "Renewable sources of energy and the management of the environment" remote education course.
2. Teaching of courses in the "Department of Telecommunications and Networks" (Special Training Program)
3. Development of an intelligent management system for Greenhouse, Archimedes I.
4. Unified technological and methodological approach of geoelectromagnetical study of West Crete, Archimedes II
5. Project Coordinator of the Archimedes II project with subject the "Development of a platform for the study of the behavior and the durability of electric appliances against the low power quality of the electric network voltage"
6. Development of the electronics of the pulse forming line (Marx bank, its trigger unit, optical connection of the laser source and the trigger unit). Simulation of the pulse forming line. Marie Curie Host Fellowships for Transfer of Knowledge "Development of an Innovative X-ray source".
7. Archimedes III "Design and development of an innovative neutron source with application to detection of explosives".
8. Archimedes III "Development of an integrated system for the optimaization of bait sprays against dacus olaeae by using modern automation techniques (ISO-BSaDO-MAT)".
9. Project Coordinator of the Archimedes II project with subject the "Development of a solid state device for the real time imaging of neutron beam energy profile (SoSta INBEnPro)".

## **PUBLICATIONS:**

### **In peer reviewed Journals:**

1. E. Koutroulis, J. Chatzakis, K. Kalaitzakis and N. C. Voulgaris, "A Bidirectional, High-Frequency Inverter Design", IEE Proceedings on Electric Power Applications, Vol. 148, No. 4, July 2001, p. 315-321.
2. E. Koutroulis, J. Chatzakis, K. Kalaitzakis, S. Manias and N. C. Voulgaris, "A SYSTEM FOR INVERTER PROTECTION AND REAL-TIME MONITORING", Microelectronics Journal, Vol. 34, Issue 9, Sep. 2003, p. 823-832.
3. J. Chatzakis, K. Kalaitzakis, N. C. Voulgaris and S. Manias, "Designing a New Generalized Battery Management System", IEEE Trans. on Industrial Electronics, vol. 50, No. 5, Oct. 2003, p. 990-999.

4. J. Chatzakis, M. Vogiatzaki, H. Rigakis, M. Manitis, E. Antonidakis "A novel High Bandwidth Pulse-Width Modulated Inverter", WSEAS Trans. On circuits and systems, Issue 8, Volume 5, August 2006.
5. E. Antonidakis, J. Chatzakis, M. Vogiatzaki, H. Rigakis, M. Manitis, D. Kolokotsa, "Electrical Appliances Testing Platform" WSEAS Trans. On systems, Issue 9, Volume 5, Sept 2006.
6. G. Saridakis, K. Dalamagidis, D. Kolokotsa, G. S. Stavrakakis, E. Koutroulis, K. Kalaitzakis, E. Antonidakis, J. Chatzakis, I. Kaliakatsos, "Development of a Greenhouse Model with an Intelligent Indoor Environment and Energy Management System for Greenhouses" WSEAS Trans. On ENVIRONMENT and DEVELOPMENT, Issue 5, Volume 2, May 2006.
7. J. Chatzakis, S. M. Hassan, E. L. Clark, C. Petridis, M. Tatarakis and P. Lee "High Repetition Rate Pseudospark Trigger Generator", The Review of Scientific Instruments. 2008 Aug, 79(8):086103.
8. A. Tsapras, C. Balas, K. Kalaitzakis, J. Chatzakis "A New Equalization Scheme for Series Connected Battery Cells", EPE Journal Volume 19-3, Sep. 2009.
9. S.M. Hassan, E.L. Clark, C. Petridis, G.C. Androulakis, J. Chatzakis, P. Lee, N.A. Papadogiannis, M. Tatarakis "Filamentary Structure of Current Sheath in Miniature Plasma Focus" IEEE Trans. on Plasma Science, Vol. 39, Issue: 11, Part: 1, 2011, p. 2432 – 2433.
10. J. Chatzakis, S. M. Hassan, E. L. Clark, M. Tatarakis and P. Lee "A novel trigger generator for a pseudospark switch", The Review of scientific instruments. 2015 Jan, 86(1): 016108
11. E. Kaselouris, V. Dimitriou, I. Fitis, A. Skoulakis, G. Koundourakis, E. L. Clark, J. Chatzakis, M. Bakarezos, I. K. Nikolos, N. A. Papadogiannis and M. Tatarakis "Preliminary investigation on the use of low current pulsed power Z-pinch plasma devices for the study of early stage plasma instabilities" Plasma Phys. Control. Fusion 60 (2018) 014031(8pp).
12. E. Markoulakis, I. Rigakis, J. Chatzakis, A. Konstantaras, E. Antonidakis "Real time visualization of dynamic magnetic fields with a nanomagnetic ferrolens" Journal of Magnetism and Magnetic Materials, Volume 451, 1 April 2018, Pages 741-748.

#### **In peer reviewed conference proceedings:**

1. J. Chatzakis, K. Kalaitzakis and N. C. Voulgaris, "A New Method for the Design of a Class-D DC to AC Inverter", Proceedings of the 31st Universities Power Engineering Conference 1996, Vol. 3, 18-20 Sep. 1996, p. 929-932.
2. J. Chatzakis, K. Kalaitzakis, N. C. Voulgaris and S. Manias, "A New Charge-Discharge Equalization Technique for Series Connected Battery Cells", EPE 2001 Cd-rom.
3. J. Chatzakis, K. Kalaitzakis, N. C. Voulgaris and S. Manias, "A New Approach to Battery Management Systems", EPE 2003 Cd-rom.
4. G. Ristas, D. Kolokotsa, J. Makris, J. Chatzakis, Integration and Testing of P/V – A/G Hybrid System in the Technological Educational Institute of Crete's Building in Chania, WSEAS International Conference on Engineering Education 2005, May 2005.
5. H. Rigakis, M. Vogiatzaki, J. Chatzakis, N. Lyberakis, M. Manitis, G. Liodakis, D. Kolokotsa, E. Antonidakis "Test pattern designing software for electrical appliances testing platform" Proceedings of the 7th WSEAS International conference on Applied Informatics and communications, August 25-27 Athens, Greece, 2007, pp. 238-243.
6. J. Chatzakis, H. Rigakis, M. Vogiatzaki, N. Lyberakis, M. Manitis, G. Liodakis, D. Kolokotsa, E. Antonidakis "Control System for Testing Electrical Appliances" Proceedings of the 10th IASTED International conference on Intelligent Systems and Control, November 19-21, 2007, Cambridge, MA, USA, pp. 97-102.
7. J. Chatzakis, M. Manitis, H. Rigakis, M. Vogiatzaki, N. Lyberakis, G. Liodakis, D. Kolokotsa, E. Antonidakis "Spike production circuit for electrical appliance testing" 7th WSEAS/IASME Int. conference on power systems, Venice, Italy, November 21-23, 2007, pp. 145-150.
8. J. Chatzakis, E. Antonidakis "A Novel N+k Fault-tolerant Hot-swap DC/AC Inverter Design", Proceedings of the 39th IEEE Annual Power Electronics Specialists Conference (PESC 2008), Jun 2008, pp. 3291-3294
9. V.V. Vikhrev, G.C. Androulakis, E.O. Baronova, S.M. Hassan, E.L. Clark, A. Gopal, S. Minardi, C. Petridis, J. Chatzakis, A. Skoulakis, E. Tzianaki, M. Bakarezos, N.A. Papadogiannis and M.

- Tatarakis "MHD Simulation of X-pinch plasma dynamics" 35th EPS Conference on Plasma Phys. Hersonissos, 9 - 13 June 2008 ECA Vol.32, P-2.154 (2008).
10. S.M. Hassan, E.L. Clark, G.C. Androulakis, C. Petridis, A. Gopal, S. Minardi, J. Chatzakis, E. Tzianaki, M. Bakarezos, N.A. Papadogiannis, E.O. Baronova, V.V. Vikherv, P. Lee and M. Tatarakis "Spectroscopic Investigation of Radiation from a Low Current X-Pinch" 35th EPS Conference on Plasma Phys. Hersonissos, 9 - 13 June 2008 ECA Vol.32, P-2.148 (2008).
  11. J. Chatzakis, S. M. Hassan, E. Clark, A. Talebitaher, P. Lee "Improved Detection of Fast Neutrons with Solid-State Electronics" International Conference on Applications of Nuclear Techniques Crete, Greece June 23-29, 2013.
  12. A. Skoulakis, G. C. Androulakis, E.L. Clark, S. M. Hassan, P. Lee, J. Chatzakis, M. Bakarezos, V. Dimitriou, C. Petridis, N. A. Papadogiannis, and M. Tatarakis "A Portable Pulsed Neutron Generator" International Conference on Applications of Nuclear Techniques Crete, Greece June 23-29, 2013.
  13. I. Fitilis, A. Skoulakis, S. M. Hassan, E.L. Clark, E. Kasselouris, V. Dimitriou, J. Chatzakis, P. Lee, T.G. Papadoulis, M. Bakarezos, C. Petridis, I. K. Nikolos, E. Drakakis, C. Kosmidis, N. A. Papadogiannis and M. Tatarakis "Study of a Miniature Plasma Focus Neutron Source" International Conference on Applications of Nuclear Techniques, Crete, Greece, June 14-20, 2015.
  14. J. Chatzakis, I. Rigakis, S. M. Hassan, E.L. Clark, and P. Lee "Detection of pulsed neutrons with solid-state electronics" International Conference on Applications of Nuclear Techniques, Crete, Greece, June 14-20, 2015 International Conference on Applications of Nuclear Techniques, Crete, Greece, June 14-20, 2015.

#### **SCIENTIFIC INTERESTS:**

John Chatzakis scientific interests cover a wide range in the applications of electricity: High Voltage Circuits (Pulse Forming Lines and PFL support circuits), Power Electronics (DC/AC inverters, switching converters), Battery Management, Optoelectronics, and Analog and Programmable Electronic Circuits.