

I. PERSONAL DATA

Name	Michail Danikas
Date of birth	13 October 1957
Place of birth	Kavala, Greece
Address	Democritus University of Thrace, Department of Electrical and Computer Engineering, School of Engineering, Power Systems Laboratory 67100 Xanthi, Greece
Home address	Serron 10, 67100 Xanthi, Greece
e-mail	mdanikas@ee.duth.gr
Languages	English, German, French, Dutch
Since 2010	Full Professor at Democritus University of Thrace, Department of Electrical and Computer Engineering, School of Engineering, Power Systems Laboratory 67100 Xanthi, Greece

II. ACADEMIC TITLES

- 1980 Bachelor of Science, Department of Electrical and Electronic Engineering, University of Newcastle-upon-Tyne, Great Britain.
- 1982 Master of Science of the University of Newcastle-upon-Tyne, Great Britain.
- 1985 Ph. D. of the University of London, Queen Mary College, Great Britain.

III. ACADEMIC AND RESEARCH POSITIONS

- 1987-89 Lecturer (universitair docent) in Technical University of Eindhoven, The Netherlands, Department of Electrical Engineering, High Voltage Laboratory.
- 1989-90 Researcher, member of the Research Group “Solid and Gaseous Insulating Materials”, in Asea Brown Boveri Research Center, Baden-Daettwil, Switzerland.
- 1990-91 Member of the Group for the Protection of Power Systems, Asea Brown Boveri, Baden, Switzerland.
- 1991-92 Researcher of the Division of Outdoor Insulators, Sefag AG, Malters, Switzerland.
- 1993-98 Assistant Professor, Democritus University of Thrace, School of Engineering, Department of Electrical and Computer Engineering, Power Systems Laboratory, Xanthi, Greece.
- 1998-2010 Associate Professor, Democritus University of Thrace, School of Engineering, Department of Electrical and Computer Engineering, Power Systems Laboratory, Xanthi, Greece.
- 2010-now Professor, Democritus University of Thrace, School of Engineering, Department of Electrical and Computer Engineering, Power Systems Laboratory, Xanthi, Greece

IV. TEACHING EXPERIENCE

- 1980-81 Supervision and teaching of electrotechnology experiments for first year students of the Dept. of Electrical and Electronic Engineering, University of Newcastle-upon-Tyne, Great Britain.

- 1983-84 Supervision and teaching of electrotechnology experiments for the first and second year students of the Dept. of Electrical and Electronic Engineering, University of London, Queen Mary College, Great Britain.
- 1987-89 Supervision of experimental work of students at Eindhoven University of Technology, The Netherlands.
- 1989-90 Supervision of experimental work of students at Asea Brown Boveri Research Center, Baden-Daettwil, Switzerland.
- 1993-94 Started teaching of the undergraduate subjects “High Voltage Engineering I”, “High Voltage Engineering II” and “Protection of Power Systems” as well as of the postgraduate subjects “Partial discharges – Mechanisms and Detection” and “Insulating Materials” in the Department of Electrical and Computer Engineering, Democritus University of Thrace.
- 1996-97 Teaching of “Power Electronics I”
1995-2011 Teaching of “Protection of Power Systems”
- 1994-2024 Teaching of “High Voltage Engineering I”, “High Voltage Engineering II” and “Power Systems Protection” (the latter during the period 1994-2011) as well as of “Partial discharges – Mechanisms and Detection” and “Insulating Materials”.
2022-2024 Teaching of “History of Electrical Engineering and Computer Science”

V. SUPERVISION OF B. Sc. Theses

1. More than 90 B. Sc. Theses were performed under my supervision from 1994 until now. The subjects of the various Theses were, among others, on factors affecting the breakdown strength of transformer oil and relevant diagnostic techniques, on the behavior of water droplets on polymeric surfaces as well as on nanocomposite polymer surfaces under the influence of uniform electric fields, on small partial discharges in air gaps, on the mechanisms of partial discharges and on simulation of electrical trees propagation in polymers as well as in nanocomposites.

VI. CONTRIBUTION IN GRADUATE STUDIES

1. Supervisor of the Ph. D. Thesis of G. Vardakis (he obtained his Ph. D. degree in 2006).
2. Member of the 7-member examining committee of the Ph. D. Thesis of D. Gourgoulis in Aristotle University of Thessaloniki, Dept. of Electrical and Computer Engineering. The Thesis was entitled “Dielectric breakdown of quasi-uniform and non-uniform gap spacings in atmospheric air”, 1997.
3. Member of the 7-member examining committee of the Ph. D. Thesis of I. Gonos, National Technical University of Athens, Dept. of Electrical and Computer Engineering. Title of the Thesis “Transient behavior of earthing systems”, 2002.
4. Member of the 7-member examining committee of the Ph. D. Thesis of V. Charalambakos, University of Patras, Dept. of Electrical and Computer Engineering. Title of the Thesis: “Development of stochastic models for the simulation of breakdown of gas-gaps and comparison with laboratory measurements in the HV laboratory”, 2004.
5. External supervisor of two Ph. D. Theses in the Dept. of Electrical Engineering, Technical University of Sofia, Bulgaria, 2006.
6. Member of the 7-member examining committee of the Ph. D. Thesis of K. Siderakis, University of Patras, Dept. of Electrical and Computer Engineering. Title of the Thesis: “Investigation of leakage

currents of porcelain insulators with RTV coatings in real laboratory conditions”, 2006.

7. Member of the 7-member examining committee of the Ph. D. Thesis of L. Tzimkas, Aristotle University of Thessaloniki, Dept. of Electrical and Computer Engineering.
8. Member of the 3-member committee of the Ph. D. Thesis of L. Lazaridis, University of Patras, Dept. of Electrical and Computer Engineering.
9. Examiner to evaluate of the Ph. D. Thesis of Rabindra Kumar Sahu, “Understanding the electrical, thermal and mechanical properties of epoxy nanocomposites”, Indian Institute of Technology Madras, Madras (Chennai), India, 2008.
10. Supervision of various M. Sc. Theses (from 2000 until now) on topics, such as breakdown phenomena on polymeric surfaces, detection of partial discharges at inception voltage in small air gaps, water droplet behavior on polymeric surfaces under the influence of uniform electric fields, the use of Neural Networks for the recognition of the sources of partial discharges, flashover phenomena in inclined polymeric and nanocomposite polymeric surfaces and the simulation of propagation of electrical treeing in nanocomposites.
11. Examiner to evaluate of the Ph. D. Thesis of R. Umamaheswari, “Investigation of partial discharge activity in Gas Insulated Systems adopting UHF technique”, Indian Institute of Technology Madras (Chennai), India, 2011.
12. Examiner to evaluate of the Ph. D. Thesis of Binu Sankar, “Generation of nanoparticles by wire explosion process and characterization of nanocomposites”, Indian Institute of Technology Madras, (Chennai), India, 2012.
13. Supervisor of the Ph. D. Thesis of D. Pitsa (she obtained her Ph. D. degree in 2013).
14. Examiner to evaluate of the Ph. D. Thesis of S. Saravanan, “Certain investigations on power management system for standalone and grid interactive hybrid power supply”, Anna University, Chennai, India, 2014.
15. Examiner to evaluate of the Ph. D. Thesis of R. Sugunakar Reddy, “Generation and characterization of zirconium carbide, zirconium nitride and stainless steel nanoparticles by wire explosion process”, Indian Institute of Technology Madras, (Chennai), India, 2015.
16. Examiner to evaluate of the Ph. D. Thesis of K. Sahitya Yadav, “Understanding the impact of thermal ageing of dielectric properties of transformer insulation”, Indian Institute of Technology Madras, India, 2017.
17. Examiner to evaluate of the Ph. D. Thesis of P. Mishra, “Localization of water droplet initiated discharges in outdoor polymeric insulating materials adopting UHF technique”, Indian Institute of Technology Madras, India, March 2019.
18. Examiner to evaluate of the Ph.D. Thesis of A. Avinash Nelson, “Interphase characterisation of epoxy-alumina nanocomposites”, Natioan Institute of Technology Calicut, Insia, 2021.

VII. BOOKS

1. M. Danikas, "University Lectures: Basics of High Voltage Engineering I", Xanthi, 1993
2. M. Danikas, " University Lectures: Basics of High Voltage Engineering II", Xanthi, 1993.
3. M. Danikas, “Basics of High Voltage Engineering”, Eds. Sblias, Athens, 2009. This book was also taught at the University of Patras, Greece, Dept. of Electrical and Computer Engineering, as well as at the Technological Educational Institute of Kavala, Greece, Dept. of Electrical Engineering. (Contents of the aforementioned book: Introduction, Electric Fields and Electric Field Calculation,

Insulating Materials – Gases, Vacuum, Liquids, Solids and their Breakdown Mechanisms, Generation of High Voltages and Currents, Measurement of High Voltages and Currents, Lightning Overvoltages, Switching Overvoltages, Insulation Coordination, Partial Discharges, Technology of High Voltage Engineering – Bushings, Cables, Transformers, Overhead Lines, Outdoor Insulators, Circuit Breakers, High Voltage Testing, Combinations of Insulating Materials, Lifetime of Insulation – Models of Insulation Lifetime -, Elements of Statistical Analysis). It is noted that the contents of the aforementioned book are taught in the undergraduate subjects of “High Voltage Engineering I” and “High Voltage Engineering II”. Latest edition of the book “basics of High Voltage Engineering” by the Editing House of “Herodotos”, Athens, 2019.

VIII. ACADEMIC DISTINCTIONS

- 1982: Sponsorship from IEEE (Institute of Electrical and Electronics Engineers, USA) for the IEEE International Symposium on Electrical Insulation, Philadelphia, USA, June 1982.
- 1985: Sponsorship John Beard του IEE (Institution of Electrical Engineers, G. Britain) for the International Conference on Properties and Applications of Dielectric Materials, Xi’an, People’s Republic of China, June 1985.

IX. SCIENTIFIC ASSOCIATIONS – WORKING GROUPS / RESEARCH COOPERATIONS

- Member of the Technical Chamber of Greece (TEE) since 1987
- **Member of the Working Group of CIGRE 15.06.01 (Task Force 15.06.01 CIGRE "Insulating materials at cryogenic temperatures") during the period 1991-94**
- **Member of the Working Group of CIGRE 15.06.02 (Task Force 15.06.02 CIGRE "Interfacial phenomena in high voltage solid insulation) during the period 1991-93**
- **Member of the Working Group of IEEE (IEEE DEIS Liquid Dielectrics Committee International Study Group) during the period 1994-98.**
- Scientific cooperation with **Helsinki University of Technology (High Voltage Engineering Group), with the Technical Research Centre of Finland, Helsinki, Finland, with the Indian Institute of Technology Madras, Department of Electrical Engineering, Madras (Chennai), India, with Waseda University, Graduate School of Information, Production and Systems, Kitakyushu, Japan and with the Central Power Research Institute (Centre for Collaborative and Advanced Research), Bangalore, India, with Xi’an Jiao Tong University, State Key laboratory of Electrical Indulation and Power Equipment, with Shanghai Jiao Tong University, State Energy Smart Grid R&D Center (Shanghai), with the University of Cyprus, Department of Electrical and Computer Engineering, Nicosia, Cyprus, and with the University of New South Wales, School of Electrical Engineering and Telecommunications, High Voltage Laboratory, Sydney, Australia. There was also scientific cooperation with Technische Universitaet Darmstadt, Darmstadt, Germany, as well as with Lectromechanical Design Co., Virginia, USA.**

X. ACADEMIC DISTINCTIONS

- **Invitation by Prof. Zhong-qin Lin to evaluate the performance of the School of Electronic, Information and Electrical Engineering (SEIEE) of Shanghai Jiao Tong University (SJTU), May 2017**
- **Member of the external panel for the off-site review of SEIEE of SJTU (after invitation of Prof. Zhong-qin Lin, President of Shanghai Jiao Tong University), in order to conduct a formal assessment of the SEIEE and its faculty members, May 2017.**

-Invitation to evaluate a Professor of the SEIEE of Shanghai Jiao Tong University (SJTU) for Tenured Professorship under the New System for Higher Education, May 2021.

Invitations from Foreign Universities

- Visiting Scholar during July 1994 from **Laboratoire d'Electrostatique et de Materiaux Dielectriques, C.N.R.S., Grenoble, and from Universite Joseph Fourier, Grenoble, France**, as Maitre de Conferences (3eme echelon, 1ere classe).
- Visiting Scholar during July and August 1995 from **Laboratoire de Genie Electrique, C.N.R.S., Toulouse, and from Universite Paul Sabatier, Toulouse, France**, as Professeur (4eme echelon, 2eme classe).
- Visiting Professor from **Helsinki University of Technology, High Voltage Institute, Helsinki, Finland**, during July and August of 2002.
- Member (after invitation) of the Three-Member Evaluation Committee for the evaluation of Dr. Chakradhar Reddy for the position of Assistant Professor στο Department of Electrical Engineering, Indian Institute of Science, Bangalore, India, 2010.
- Visiting Professor at **Xi'an Jiao Tong University, State Key Laboratory of Electrical Indulation and Power Equipment**, during the years 2010 (July/August), 2011 (September) and 2012 (September).
- Visiting Professor at **Shanghai Jiao Tong University, State Energy Smart Grid R&D Center (Shanghai)**, during November 2014.
- Visiting Professor at **Shanghai Jiao Tong University, State Energy Smart Grid R&D Center (Shanghai)**, during the period 10th October – 10th November 2017.

Reviewer of papers in scientific journals

- "IEEE Transactions on Dielectrics and Electrical Insulation" (until 1993 known as "IEEE Transactions on Electrical Insulation")
- "Journal of the Franklin Institute"
- "Technical Chronicles" (scientific publication of the Technical Chamber of Greece)
- "IEEE Transactions on Electromagnetic Compatibility"
- "Facta Universitatis" (Ser. Electronics and Energetics) (Serbia)
- "Journal of Electrical Engineering" (Slovakia)
- "IEE Proc.-Sci. Meas. Technol." (known now as "IET Sci. Meas. Technol.") (Great Britain)
- «Electronics Letters» (Great Britain)
- «Materials Science & Engineering A»
- «Journal of Alloys and Compounds»
- "Materials Characterization"
- "COMPEL – The Int. J. for Comp. and Mathematics in Electr. and Electron. Eng." (Great Britain)

- “Materials Chemistry and Physics”
- «IET Gener., Transm. & Distr.» (earlier known as “IEE Proc.-Gener. Transm. & Distr.”) (Great Britain)
- «IEEE Transactions on Electron Devices” (T-ED Golden Reviewers List, <http://eds.ieee.org/t-ed/t-ed-golden-reviewers.html#D>)
- “Polymer Testing”
- “Journal of Reinforced Plastics and Composites” (Hungary)
- “IET Power Electronics”
- “Journal of Electrostatics”
- “IEEE Open Access”
- “Scientific Reports” - Nature

Session chairman and reviewer of conference papers

- Chairman of the Scientific Session A5: "Electrotechnical Materials 1", in the 5th International Conference on Optimization of Electric and Electronic Equipment, May 15-17, 1996, Brasov, Romania.
- Chairman of Poster Session B, στο 31st Universities Power Engineering Conference, September 18 - 20, 1996, Iraklion, Greece.
- Reviewer of papers in the 3rd Int. Workshop in Signal / Image Processing (IWSIP 96), 4-7 November, 1996, Manchester, UK.
- Member of the International Steering Committee της 6th International Conference and Exhibition on Optimization of Electrical and Electronic Equipment (OPTIM '98), May 14-15, 1998, Brasov, Romania.
- Reviewer of papers of the 6th International Conference and Exhibition on Optimization of Electrical and Electronic Equipment (OPTIM '98), May 14-15, 1998, Brasov, Romania.
- Member of the Organizing Committee of the 7th International Conference and Exhibition on Optimization of Electrical and Electronic Equipment (OPTIM 2000), May 11-12, 2000, Brasov, Romania.
- Reviewer of papers of the 7th International Conference, Exhibition on Optimization of Electrical and Electronic Equipment (OPTIM 2000), May 11-12, 2000, Brasov, Romania.
- Member of the Organizing Committee of the 8th International Conference and Exhibition on Optimization of Electrical and Electronic Equipment (OPTIM 2002), May 16-17, 2002, Brasov, Romania.
- Reviewer of papers of the 8th International Conference, Exhibition on Optimization of Electrical and Electronic Equipment (OPTIM 2002), May 16-17, 2002, Brasov, Romania.
- Reviewer of papers of the International Conference on Polymeric Materials in Power Engineering (ICPMPE 2007), Central Power Research Institute, Bangalore, India, October 4-6, 2007.
- Reviewer of papers of the IEEE International Symposium on Electrical Insulation (ISEI 2008), Vancouver, Canada, June 8-11, 2008

- Session chairman of “Session 15 – Partial Discharges – Part 1 (Oral)”, International Symposium on Electrical Insulation (ISEI 2008), Vancouver, Canada, June 8-11, 2008.
- Member of the International Scientific Committee for the International Conference on High Voltage Engineering and Application (ICHVE 2010), New Orleans, USA, October 11-14, 2010.
- Member of the International Scientific Committee for the International Conference on High Voltage Engineering and Application (ICHVE 2012), Shanghai, China, 17-20 September, 2012.
- Member of the International Advisory Committee for the 2015 IEEE 11th International Conference on the Properties and Applications of Dielectric Materials (ICPADM), 19-22 July 2015, Sydney, Australia.
- Session chairman in the 18th Asian Conference on Electrical Discharges (ACED2016), 8-10 December 2016, Chennai, India.
- Member of the Local Organizing Committee of the 2018 IEEE International Conference on High Voltage Engineering and Application (ICHVE2018), 10-13 September 2018, Athens, Greece.
- Reviewer of papers of the 2018 IEEE International Conference on High Voltage Engineering and Application (ICHVE2018), 10-13 September 2018, Athens, Greece.
- Session chairman of the “Oral Session for Aging, Space Charge and Maintenance”, 2018 IEEE International Conference on High Voltage Engineering and Application (ICHVE2018), 10-13 September 2018, Athens, Greece.
- Reviewer of papers of the 4th IEEE Int. Conf. on Condition Assessment Techniques in Electrical Systems, November 21-23, 2019, Chennai, India.
- Session chairman in the 4th IEEE Int. Conf. on Condition Assessment Techniques in Electrical Systems, November 21-23, 2019, Chennai, India.

Conference invitations

- Invited as Honorary Guest at "Electrostatica '95 Symposium", 22-23 September 1995, Cluj-Napoca, Romania, from the Scientific Committee of the Symposium.
- Invited Speaker at “IV Volta Colloquium on Partial Discharge Measurements”, November 11-13, 1997, Como, Italy.
- Invited speaker at the 4th IEEE Int. Conf. on Condition Assessment Techniques in Electrical Systems, November 21-23, 2019, Chennai, India.

Member of Examining Committees of the Greek Scholarship Foundation

- Member of the Examining Committee during the academic years 2000-2001 and 2003-2004.

Sabbatical leaves

- **Technische Universitaet Darmstadt, Abteilung der Elektrotechnik, Hochspannungslabor, Deutschland**, (February – July 1998) (as Visiting Professor) (cooperation with the group of Prof. D. Koenig).
- **Waseda University, Graduate School of Information, Production and Systems, Kitakyushu, Japan**, (October 2008 – Febraury 2009) (as Visiting Scholar) (cooperation with the group of Prof. T. Tanaka).
- **University of New South Wales (UNSW), School of Electrical Engineering and**

Telecommunications, Sydney, Australia (March – April 2018) (as Visiting Fellow) (cooperation with the group of Associate Professor Toan Phung).

- **Royal Melbourne Institute of Technology University (RMIT University), School of Engineering (College of Science, Engineering and Health), Melbourne, Australia** (February-April 2023) (as Visiting Professor) (cooperation with the group of Professor Alan K. L. Wong)

XI. INVITED TALKS

1. "Study of some aspects of complex insulating systems", Invited talk, Dept. of Electrical Engineering and Computer Science, **State University of New York at Buffalo (SUNY Buffalo), U.S.A.**, 14th June 1984.
2. "Solid/liquid insulating systems under combined electrical and thermal stresses", **Asea Brown Boveri Corporate Research, Baden-Daettwil, Switzerland**, 25th January 1989.
3. "Dielectric Ageing in rotating machine insulation", **Asea Brown Boveri Corporate Research, Baden-Daettwil, Switzerland**, 22nd November 1989.
4. "Discharge measurements in rotating machine insulation", **Laboratoire d'Electrostatique et de Materiaux Dielectriques, Centre National de la Recherche Scientifique (C.N.R.S.), Grenoble, France**, 14th March 1990.
5. "Electrothermal ageing of rotating machine insulator models", **Asea Brown Boveri Corporate Research, Baden-Daettwil, Switzerland**, lecture for people from Ansaldo ABB Componenti, 20th March 1990.
6. "Fast measurements of partial discharges in polyethylene voids", Invited talk, **Consolidated Edison Co., New York, USA**, 13th July 1992.
7. "Mechanisms of partial discharges in solid insulation", Invited talk, **Laboratoire d'Electrostatique et de Materiaux Dielectriques, C.N.R.S., Grenoble, France**, 14th June 1993.
8. A series of talks given for graduate students at **Helsinki University of Technology, Helsinki, Finland** (July-August 2002) on subjects such as partial discharges in polymers, outdoor polymeric insulators, detection and measurement of partial discharges, factors affecting the breakdown strength of transformer oil, small partial discharges at inception voltage and charging phenomena below inception voltage.
9. "Small partial discharges and their role in insulation degradation", Invited talk, **ABB Global Services Ltd., ABB Corporate Research, Technology Development Department, Bangalore, India**, 6th October 2007.
10. "The Greek educational system with emphasis on the Greek universities", Invited talk, **Nihon University, College of Science and Technology, Tokyo, Japan**, 17th November 2008.
11. "The Greek educational system with emphasis on the Greek universities", Invited talk, **Nihon University, College of Bioresource Sciences, Fujisawa-shi, Japan**, 18th November 2008.
12. "The hysteresis curve of the maximum partial discharge magnitude as a diagnostic technique for model stator bars", Invited talk, **Kyushu Institute of Technology, Dept. of Electrical Engineering and Electronics, Japan**, 3rd December 2008.
13. "Electrical treeing and breakdown in nanocomposites", Invited talk, **Japan Power Systems Meeting on Nanocomposites, Shinagawa, Tokyo**, 11th February 2009.
14. "Detection and recording of charging events below inception voltage with a point-plane electrode arrangement in air: Experimental data and definitions", Invited talk, **University of Cyprus, Dept.**

of Electrical and Computer Engineering, Nicosia, Cyprus, 6th May 2011.

15. Invited talks during a four-day Technical Seminar on “Advancement in insulation degradation, small partial discharges, electrical tree, nanocomposite material & diagnostic techniques” at **TNB Research Sdn Bhd., Malaysia**, from 27th August 2012 until 30th August 2012.
16. Invited talks during November 2014 at **Shanghai Jiao Tong University, State Energy Smart Grid R&D Center (Shanghai), Shanghai, People’s Republic of China**, on partial discharge mechanisms, on simulation of electrical trees in conventional polymers and in nanocomposites, on breakdown mechanisms and various insulating materials in cable insulation, and on charging phenomena below the inception voltage in polymers as well as in air.
17. Invited talks during a 10-day invitation at **TNB Research Sdn. Bhd., Malaysia**, and at **UNITEN (Universiti Tenaga Nasional), Malaysia**, from 26th January 2017 until 4th February 2017, on partial discharge mechanisms, partial discharge detection techniques, simulation of electrical trees in nanocomposite polymers and on the behaviour of water droplets under the influence of uniform electric fields in nanocomposite polymer surfaces.
18. Invited talks during 10th October – 10th November 2017 at **Shanghai Jiao Tong University, State Energy Smart Grid R&D Center (Shanghai), Shanghai, People’s Republic of China**, on charging phenomena below the inception voltage in polymers, nanocomposites and in air, on surface flashovers and surface discharges in polymer and on nanocomposites, on space charge mechanisms and measurements, on the relation between space charges and electrical treeing and on simulation of electrical trees in conventional polymers and in nanocomposites.
19. Invited talk on 31st October 2017 at **Tianjin University, School of Electrical and Information Engineering, High Voltage Laboratory, Tianjin, People’s Republic of China**, on charging phenomena below the inception voltage, on simulation of electrical trees in polymers and in polymeric nanocomposites, and on surface flashover and surface discharge phenomena in polymers and in nanocomposites.
20. Invited talk on 21st November 2019, **IIT Madras, Chennai, India**, 4th IEEE Int. Conf. on Condition Assessment Techniques in Electrical Systems, November 21-23, 2019. The talk was based on the paper presented in this conference.
21. Invited talk on 22nd November 2019, **IIT Madras, Chennai, India**. The talk was about the various models of polymer nanocomposites as well as about the role of interfaces in the aforementioned materials.
22. Invited to give lectures on polymer nanocomposites and their possible applications in the high voltage industry as well as on partial discharges and charging effects below the inception voltage in polymeric materials when at **Royal Melbourne Institute of Technology University, (RMIT University), School of Engineering (College of Science, Engineering and Health), Melbourne, Australia**, as Visiting Professor during the months February-April 2023

XII. PARTICIPATION IN RESEARCH PROGRAMS

1. "HV-Connections of TWT TL 5500", ESTEC Contract no. 6234/85/NL/AN(SC), during the period 1987-88 (research program funded by the European Space Agency).
2. "HV-design aspects of microwave tubes", ESTEC Contract no. 7186/87/NL/JG(SC), during the period 1987-89 (research program funded by the European Space Agency).
3. "Ageing and partial discharges in rotating machine insulation", research program funded partially from Asea Brown Boveri, Birr, Switzerland, during the period 1989-90.
4. "Partial discharges and high field phenomena in wires for aircraft applications", research program

funded partially from British Aerospace, during the period 1989-90.

5. "Partial discharges and related damage in epoxy resin", research program funded by EPRI (Electrical Power Research Institute, U.S.A.), during the period 1989-90.
6. "Etude du Couple "Polypropylene Metallise/Huile de Colza"", research program funded by Electricite de France (E.D.F.) and the Laboratoire d' Electrostatique et de Materiaux Dielectriques, Grenoble, France, during July 1994.
7. Research program in cooperation with Professor Y. Cheng, Xi'an Jiaotong University, State Key Laboratory of Electrical Insulation and Power Equipment (SKLEIPE), Xi'an, People's Republic of China, 2010-2012. Subject of the research program is the study of very small partial discharges (and/or charging phenomena) at inception and below inception voltage in epoxy resin samples as well as in nanocomposite epoxy resin samples (amount of money: 15000 euros for the whole period of the project). Studies were carried out also regarding the flashover voltage in the presence of water droplets under the influence of uniform electric fields on epoxy resin sample surfaces and on nanocomposite epoxy resin sample surfaces.
8. Research program in cooperation with Professor Yi Yin, Shanghai Jiao Tong University, State Energy Smart Grid R&D Center (Shanghai), People's Republic of China. Subject of this research program is the study of surface flashover on polyethylene sample surfaces in the presence of water droplets as well on nanocomposite XLPE sample surfaces (2014 to the present).

Responsible for programs from the Technical Chamber of Greece for the equipment of Power Systems Laboratory (since 1998) aiming at the improvement of the existing equipment and of some small research projects (amount of money/year: about 10000 euros).

Responsible for the program for the Industrial Practice of undergraduate students of the Dept. of Electrical and Computer Engineering, School of Engineering, Democritus University of Thrace, for the period 2003-2009.

XIII. RESEARCH PUBLICATIONS

α. M. Sc. Dissertation

- A1. M. Danikas, "Factors affecting the breakdown strength of transformer oil", University of Newcastle-upon-Tyne, Great Britain, 1982.

β. Ph. D. Thesis

- B1. M. Danikas, "A study of the behaviour of a uniaxially orientated polyethylene tape/oil insulating system subjected to electrical and thermal stresses", University of London, Queen Mary College, Great Britain, 1985.

Γ. Journal papers

- Γ1. A. J. Pearmain and M. G. Danikas, "A study of the behavior of a uniaxially oriented polyethylene tape/oil insulating system subjected to electrical and thermal stresses", IEEE Trans. Elec. Insul., vol. 22, no. 4, pp. 373-382, 1987.
- Γ2. J. M. Wetzer, M. G. Danikas and P. C. T. van der Laan, "Assessment of the HV performance of traveling-wave tube components", IEEE Trans. Elec. Insul., vol. 24, no. 6, pp. 963-967, 1989.
- Γ3. M. G. Danikas, "Study of samples of a composite insulating system under electrical and thermal stresses", IEEE Elec. Insul. Mag., vol. 6, no. 1, pp. 18-23, 1990, **Invited Paper.**

- Γ4. M. G. Danikas, "Addendum to the article: Study of samples of composite insulating system under electrical and thermal stresses", IEEE Elec. Insul. Mag., vol. 6, no. 4, p. 6, 1990.
- Γ5. M. G. Danikas, "Breakdown of transformer oil", IEEE Elec. Insul. Mag., vol. 6, no. 5, pp. 27-34, 1990.
- Γ6. J. M. Wetzer, M. G. Danikas and P. C.T. van der Laan, "Analysis and improvement of high voltage components for spacecraft traveling-wave tubes", IEEE Trans. Elec. Insul., vol. 25, no. 6, pp. 1117-1124, 1990.
- Γ7. M. G. Danikas, "Particles in transformer oil", IEEE Elec. Insul Mag., vol. 7, no. 2, pp. 39-40, 1991.
- Γ8. M. G. Danikas, "The definitions used for partial discharge phenomena", IEEE Trans. Elec. Insul., vol. 28, no. 6, pp. 1075-1081, 1993.
- Γ9. F. Kraehenbuel, B. Bernstein, M. Danikas, J. Densley, K. Kadotani, M. Kahle, M. Kosaki, H. Mitsui, M. Nagao, J. Smit and T. Tanaka, "Properties of electrical insulating materials at cryogenic temperatures: A literature review", IEEE Elec. Insul. Mag., vol. 10, no. 4, pp. 10-22, 1994.
- Γ10. M. G. Danikas, "On the breakdown strength of silicone rubber", IEEE Trans. Diel. Elec. Insul., vol. 1, no. 6, pp. 1196-1200, 1994.
- Γ11. M. G. Danikas, "Ageing properties of silicone rubber materials used in high voltage composite insulators", J. Elec. Electron. Engg., Austr., vol.15, no. 2, pp. 193-202, 1995.
- Γ12. A. Kelen and M. G. Danikas, "Evidence and presumption in PD diagnostics", IEEE Trans. Diel. Elec. Insul., vol. 2, no. 5, pp. 780-795, 1995, Special issue on Prof. F. H. Kreuger, **Invited Paper.**
- Γ13. G. Adamidis, A. Safacas and M. Danikas, "Investigation of the behaviour of a voltage converter with forced commutation during the start-up of a synchronous motor", Electromotion, vol. 2, no. 4, pp. 211-216, 1995.
- Γ14. M. G. Danikas, "Some possible new applications of a partial discharge (PD) model and its relation to PD detection sensitivity", Eur. Trans. Elec. Power, ETEP, vol. 6, no. 6, pp. 445-448, 1996.
- Γ15. M. G. Danikas, I. Karafyllidis, A. Thanailakis and A. M. Bruning, "Simulation of electrical tree growth in solid dielectrics containing voids of arbitrary shape", Model. Simul. Mater. Sci. Eng., vol. 4, pp. 535-552, 1996.
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