

# **CURRICULUM VITAE**

**Zacharias G. Datsios**

PhD in Electrical and Computer Engineering

**Assistant Professor**

Department of Electrical & Computer Engineering

School of Engineering

Democritus University of Thrace

Xanthi, Greece, September 2026



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## 1. Contact Details

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## 2. Current Position

**Assistant Professor**, Power Systems Laboratory, Power Systems Sector, Department of Electrical and Computer Engineering, School of Engineering, Democritus University of Thrace. **Expertise: High Voltage Engineering**

## 3. Previous Positions

**Research Associate**, High Voltage Laboratory, Department of Electrical Energy, School of Electrical & Computer Engineering, Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece (06/2017 - 09/2026)

**Adjunct Lecturer and Research Associate**, Department of Electrical & Computer Engineering, Faculty of Engineering, University of Western Macedonia, Kozani, Greece (04/2019 - 09/2026)

## 4. Education

|                   |                                                                                                                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10/2010 - 06/2017 | <b>PhD Degree in Electrical &amp; Computer Engineering</b> , School of Electrical & Computer Engineering, Faculty of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece ( <b>Honors</b> ) |
| 09/2004 - 07/2010 | <b>Diploma in Electrical &amp; Computer Engineering</b> , School of Electrical & Computer Engineering, Faculty of Engineering, Aristotle University of Thessaloniki, Greece ( <b>8.64/10 - Honors</b> )        |

## 5. Research Work

### A. Areas of Interest

The research activity lies in the field of High Voltage Engineering and Technology and include:

- (1) Insulation coordination of power systems with emphasis on high voltage systems (transmission and distribution systems, HVAC and HVDC, substations, power generating stations, renewables)
- (2) Protection of systems and installations against temporary, slow-front, and fast-front overvoltages
- (3) Electrical breakdown and electrical discharges - external insulation
- (4) Generation and measurement of high voltages and currents, test techniques
- (5) Dielectric spectroscopy and dielectric measurements and tests, effects of high electric fields
- (6) Lightning protection of structures, power systems and high voltage installations
- (7) Lightning performance, lightning protection, and surge protection of transmission and distribution lines and of the connected substations, including HVDC systems
- (8) Design, analysis, and safety assessment of grounding systems for low and high voltage installations, including transmission and distribution lines, substations, renewables, and power generating stations
- (9) Measurements related to grounding systems
- (10) Ionization, electrical breakdown, and electrical properties of soil
- (11) Safety of persons and equipment of power systems, low and high voltage installations under fault conditions

- (12) Model development and electromagnetic transients simulations of power systems for overvoltage protection
- (13) Electromagnetic compatibility and modeling of transmission lines
- (14) Surface dielectric strength and discharges on solid insulation
- (15) Electrical breakdown, electrical discharges, and electrical properties in liquid dielectrics

## B. Research Activity

- **Independent research:**
  - **Since 09/2026** at the Democritus University of Thrace as an Assistant Professor
  - **Three (3) years** at the Aristotle University of Thessaloniki as the Principal Investigator of the SPOTS project (H.F.R.I. - 2nd Call for Post-Doctoral Researchers)
  - **More than five (5) years** at the University of Western Macedonia supervising diploma theses, graduate theses, and special assignments of undergraduate and postgraduate students
- **Research experience: over fifteen (15) years**

**Research activity:** conducting research, participating in research projects, project management, coauthoring scientific publications and research proposals, supervision and mentoring of senior undergraduate students, postgraduate students, and PhD candidates, supervision of diploma theses, graduate theses, and special assignments.

## C. Research Projects

### Principal Investigator:

08/2021 - 08/2024

“Surge Protection of Overhead Transmission System (SPOTS)”, Principal Investigator: Zacharias G. Datsios, Postdoctoral Researcher, Funding: Hellenic Foundation for Research and Innovation (H.F.R.I.) under the “2nd Call for H.F.R.I. Research Projects to support Post-Doctoral Researchers” (H.F.R.I. Project Number: 367, Special Account for Research Funds of AUTH Project Number: 98156)

**Research activities:** Model development for simulating lightning attachment (fractal-based stochastic lightning attachment model), modeling of upward and downward lightning discharges, simulations of lightning strikes to HVAC transmission lines, model development for simulating direct lightning strikes to HVAC transmission lines, simulations for the estimation of lightning overvoltages and the prediction of transmission line insulation flashover, literature review for gathering field data, development and validation of a generalized methodology for estimating the lightning performance of transmission lines, evaluation of parameters affecting the lightning performance, investigation of installing line surge arresters for the protection of the transmission lines

In the context of the project, the PI: **(a)** successfully managed the Research Team, as well as all project aspects (operations, administration, and finances), **(b)** ensured that Research Objectives were met, **(c)** successfully disseminated research results through publications, social media, and the organization of an international workshop. **At the end of the project:** **(i)** 99.6% of the 197,000€ budget has been absorbed, **(ii)** all deliverables and milestones have been completed, **(iii) eight (8)** ([J14], [J15], [J17]-[J19], [J21], [J25], [J27]) **(5/8 invited:** [J18], [J19], [J21], [J25], [J27]) and **sixteen (16)** ([C23], [C24], [C26]-[C29], [C32]-[C34], [C36], [C37], [C42], [C44], [C45], [C47], [C51]) **(1/16 invited:** [C29]) papers have been published respectively in major international scientific journals and conference proceedings (peer reviewed), **(iv)** a workshop has been organized to present and disseminate the research results of SPOTS with participants from the academic community and industry in Greece and abroad, **(v)** the PhD Candidate A. Ioannidis defended successfully his PhD thesis, part of which was supervised by

the PI in the context of SPOTS, **(vi)** A. Ioannidis was presented the Diploma for Young Scientists for paper [C27] during the International Conference on Lightning Protection (ICLP), which took place at Cape Town, South Africa in 2022.

**Up to September 2026:**

- **Participation as a Research Associate in over forty (40) research projects associated with the research subjects (1)-(15) of Section 5.A.** Most of the projects were funded by the industry and are associated with insulation coordination and grounding, lightning and overvoltage protection, and electrical safety
- **Authoring and coauthoring research proposals** in the context of the research activity of the Aristotle University of Thessaloniki and the University of Western Macedonia, a number of which was funded.

## 6. Teaching Activity

- **Undergraduate courses: six (6) academic years and one (1) semester**
- **Postgraduate course: two (2) semesters**
- **Co-lecturing of two (2) postgraduate courses: two (2) semesters**
- **Supervision:**
  - **fourteen (14) Diploma Theses**
  - **fourteen (14) Postgraduate Diploma Theses**
  - **two (2) Special Assignments**
  - **fifteen (15) Graduate Theses****associated with the research subjects (1)-(14) of the Section 5.A**
- **Co-supervision of two (2) Postgraduate Diploma Thesis**
- **Member of the examination committee:**
  - **eight (8) Diploma Theses**
  - **twenty-three (23) Graduate Theses**
  - **two (2) Postgraduate Diploma Theses**
- **Authoring of teaching material (more than 300 pages)**
- **Continuing education and lifelong learning: ten (10) months of teaching experience**
- **Assistant Lecturer in laboratory and exercises undergraduate courses: thirteen (13) academic semesters**
- **Assistant Supervisor of over fifty (50) Diploma Theses**
- **Several Diploma Theses have led to publications in prominent international peer-reviewed journals and conference proceedings**

The teaching activity lies in the fields of High Voltage Engineering and Technology, as well as in Photometry. In particular, the undergraduate courses taught for six (6) academic years and one (1) semester are: “High Voltage Engineering I”, “High Voltage Engineering II”, “High Voltage Engineering”, “High Voltage Technology”, and “Lighting”. Moreover, a postgraduate course was taught for two (2) semesters: “Special Topics in Safety of Smart Electrical Power Network Infrastructure”. Parts of two (2) postgraduate courses “Electrical Distribution Network Infrastructure” and “Control and Automation of Smart Electrical Distribution Networks” were also taught for two (2) semesters. Lectures on Lighting were provided also in English (Erasmus+) for three (3) semesters.

Several graduate theses, special assignments, and diploma theses have been assigned and completed successfully at an undergraduate and postgraduate level in the field of High Voltage Engineering and Technology, as well as one (1) graduate thesis in the field of Photometry.

In addition, theory notes, exercises, and laboratory courses were authored in the fields of High Voltage Engineering and Technology and Photometry.

## 7. Professional and Laboratory Experience

- Practicing engineer (Professional license by the Technical Chamber of Greece since 10/2010) - Freelancer since 09/2012 (except for the duration of the compulsory military service and some months later, 06/2017 - 09/2018)
- Insulation coordination for power systems according to IEC 60071 series
- Surge arrester selection according to IEC 60099 series
- Measurements related to grounding systems: ground resistance, soil resistivity, grounding grid integrity, PE and equipotential bonding conductor integrity, step and touch voltages (IEEE Std 80 and 81, CENELEC EN 50522)
- Grounding system design according to IEEE Std 80, CENELEC EN 50522, CENELEC EN 50341.01, ENA TS 41-24, IEC 61936-1, and ELOT 60364
- Estimation of the lightning performance of overhead transmission lines according to IEEE Std 1243 and CIGRE TB 39, 63, 72, 549, 839
- Electromagnetic interference on metallic structures caused by adjacent high voltage systems according to CENELEC EN 50443 and CIGRE TB 95
- Laboratory Experience:
  - High voltage testing according to IEC 60060 series.
  - High voltage measurement using standard air gaps according to IEC 60052.
  - Partial discharge measurements according to IEC 60270.
  - Determination of the dielectric breakdown voltage of insulating liquids according to IEC 60156, IEC 60897, ASTM D877/D877M and D1816.
  - Measurement of DC volume and surface resistance (or conductance) of insulating materials according to ASTM D257.
  - Measurement of permittivity (dielectric constant) and AC loss characteristics of solid insulation according to ASTM D150.
  - Measurement of soil electrical resistivity according to ASTM G57 and G187.
  - Electrical impedance measurements on power systems equipment.
  - Design proposal of a high voltage laboratory for the Department of Electrical Engineering of the T.E.I. of Western Macedonia, Kozani, Greece (not implemented due to shortage of funds)
- Consulting services to technical companies
- Translation and editing of technical manuscripts in the field of electrical and computer engineering from English into Greek and vice versa

## 8. Awards and Distinctions

- **Distinguished Reviewer** of IEEE Transactions on Electromagnetic Compatibility for the year 2025. The distinction is based on the number of submitted reviews, the quality of the review, and the reviewer score.
- **Distinguished Reviewer** of IEEE Transactions on Electromagnetic Compatibility for the year 2024. The distinction is based on the number of submitted reviews, the quality of the review, and the reviewer score.
- **Outstanding Reviewer** for 2023 of IEEE Open Access Journal of Power and Energy (OAJPE).
- **Distinguished Reviewer** of IEEE Transactions on Electromagnetic Compatibility for the year 2022. The distinction is based on the number of submitted reviews, the quality of the review, and the reviewer score.
- **Certificate of Outstanding Contribution in Reviewing** presented by Electric Power Systems Research in recognition of the contributions made to the quality of the journal in 2018.
- **3rd National Award in Metrology** for young researchers who have defended a PhD Thesis relevant to Metrology. Award presented for the PhD Thesis by the Scientific Committee of the Hellenic Laboratory Association (HellasLab) in May 2018.
- **Young Scientist Award** for young scientists (below 35 years of age) who have delivered an oral or poster presentation of high quality at the International Conference on Lightning Protection (ICLP) and have made

notable contributions in the field of lightning research and lightning protection. Award presented for the publication [C5] by the Scientific Committee of the ICLP during the 31st ICLP that was held in Vienna, Austria in 2012.

## 9. Additional Information – Activities

### A. Conferences – Workshops

#### Participation in:

- (a) **thirty (30) major international scientific conferences:** presentation of **thirty-five (35)** papers and **one (1) invited speech**
- (b) **two (2) national conferences:** **one (1) invited speech** and presentation of **two (2)** papers
- (c) **one (1) national workshop:** Diploma Thesis presentation
- (d) **one (1) symposium:** research results presentation of **one (1)** research project

1. 38th International Conference on Lightning Protection, Sapporo, Japan, May/June 2026, Oral presentation of publications [C61], [C62]
2. International Conference on Electrical and Electronics Engineering (ELECO 2025), Bursa, Turkey, November 2025, Oral presentation of publication [C60]
3. European EMTP-ATP Users Group (EEUG) 2025 conference, Lyon, France, September/October 2025, Oral presentation of publication [C59] and invited lecture (course instructor): “Lightning overvoltage studies”
4. XVIII SIPDA International Symposium on Lightning Protection (SIPDA 2025), Thessaloniki, Greece, September 2025, Oral presentation of publications [C55], [C58], presentation of publication [C56] (poster)
5. European EMTP-ATP Users Group (EEUG) 2024 conference, Rome, Italy, October 2024 Oral presentation of publications [C50], [C51]
6. 37th International Conference on Lightning Protection, Dresden, Germany, September 2024, Oral presentation of publication [C47]
7. 24th International Conference on Environment and Electrical Engineering (EEEIC), Rome, Italy, June 2024, Oral presentation of publications [C42], [C44], [C45]
8. 58th International Universities’ Power Engineering Conference (UPEC), Dublin, Ireland, August/September 2023, Attendance
9. International Conference on Power System Transients (IPST), Thessaloniki, Greece, June 2023, Attendance
10. International Conference on Grounding & Lightning Physics and Effects (GROUND2023 & 10th LPE), Belo Horizonte, Brazil, May 2023, (hybrid conference due to the pandemic), Attendance
11. The 2nd International Conference on Energy Transition in the Mediterranean Area (SyNERGY MED 2022), Thessaloniki, Greece, October 2022, Oral presentation of publication [C28]
12. 36th International Conference on Lightning Protection (ICLP), Cape Town, South Africa, October 2022, Oral presentation of publication (remote, hybrid conference) [C26]
13. 2022 IEEE International Conference on High Voltage Engineering and Application (ICHVE), Chongqing, China, September 2022, Presentation of publications (remote, hybrid conference) [C24] (poster) and [C25] (oral)
14. 35th International Conference on Lightning Protection (ICLP) – XVI International Symposium on Lightning Protection (SIPDA), Sri Lanka, September 2021, (remote due to pandemic), Oral presentation of publication [C22]
15. International Conference on Power Systems Transients (IPST), Belo Horizonte, Brazil, June 2021, (remote due to pandemic), Attendance
16. 20th International Conference on Environment and Electrical Engineering (EEEIC), Madrid, Spain, June 2020, (remote due to pandemic), Oral presentation of publications [C18] and [C19]
17. 1st Symposium of Research Work UOWM (University of Western Macedonia), Kozani, Greece, December 2019, Presentation of the research results of a research project
18. 21st International Symposium on High Voltage Engineering (ISH), Budapest, Hungary, August 2019, Presentation of publications [C17] (poster) and [C16] (oral)
19. 11th Pan-Hellenic Electrical – Computer Engineering Students’ Conference (ECESCON 11), Thessaloniki, Greece, April 2019, Invited lecture: “Impulse response of ground electrodes”
20. 34th International Conference on Lightning Protection (ICLP), Rzeszow, Poland, September 2018, Oral presentation of publication [C14]
21. 7th Regular Metrology Conference, Athens, Greece, May 2018, Oral presentation of publications [NC1] and [NC2]
22. 33rd International Conference on Lightning Protection (ICLP), Estoril, Portugal, September 2016, Oral presentation of publication [C12]

23. International Colloquium on Lightning and Power Systems (ICLPS), CIGRE Study Committee C4, Bologna, Italy, June 2016, Oral presentation of publication [C11]
24. 19th International Symposium on High Voltage Engineering (ISH), Pilsen, Czech Republic, August 2015, Presentation of publication [C10] (poster)
25. 32nd International Conference on Lightning Protection (ICLP), Shanghai, China, October 2014, Oral presentation of publication [C9]
26. 49th International Universities' Power Engineering Conference (UPEC), Cluj-Napoca, Romania, September 2014, Oral presentation of publication [C8]
27. 18th International Symposium on High Voltage Engineering (ISH), Seoul, Republic of Korea, August 2013, Oral presentation of publication [C7]
28. 8th Mediterranean Conference on Power Generation, Transmission, Distribution and Energy Conversion (MEDPOWER), Cagliari, Italy, October 2012, Oral presentation of publication [C6]
29. 31st International Conference on Lightning Protection (ICLP), Vienna, Austria, September 2012, Oral presentation of publication [C5]
30. 46th International Universities' Power Engineering Conference (UPEC), Soest, Germany, September 2011, Oral presentation of publication [C4]
31. International Conference on Power Systems Transients (IPST), Delft, The Netherlands, June 2011, Oral presentation of publications [C2] and [C3]
32. 45th International Universities' Power Engineering Conference (UPEC), Cardiff, Wales, August 2010, Oral presentation of publication [C1]
33. IEEE Greece PES Chapter, 11th PowerED, Power Engineering Dissertations Workshop, Athens, Greece, December 2009, Oral presentation of the Diploma Thesis
34. 6th Mediterranean Conference and Exhibition on Power Generation, Transmission, Distribution and Energy Conversion (MEDPOWER), Thessaloniki, Greece, November 2008, Attendance

## B. Professional Memberships

- Institute of Electrical and Electronics Engineers (IEEE):
  - IEEE Dielectrics and Electrical Insulation Society
  - IEEE Power & Energy Society
  - IEEE Electromagnetic Compatibility Society
  - IEEE Industry Applications Society
  - IEEE Nanotechnology Council
  - IEEE Transportation Electrification Council
  - IEEE Sensors Council
  - IEEE Young Professionals
- Institution of Engineering and Technology (IET)
- International Council on Large Electric Systems (CIGRE)
- Licensed ATP-EMTP user (European EMTP-ATP Users Group e.V., EEUG)
- Technical Chamber of Greece (TEE - TCG)
- Association of Mechanical and Electrical Engineers of Northern Greece (ΣΜΗΒΕ)

## C. Invited Lectures

- ATP-EMTP Course Instructor on “Lightning Overvoltage Studies” (duration: 3 hours) at the European EMTP-ATP Users Group (EEUG) 2025 Conference, Lyon, France, September/October 2025
- “Impulse response of ground electrodes”, 11th Pan-Hellenic Electrical – Computer Engineering Students' Conference (ECESCON 11), Thessaloniki, Greece, April 2019

## D. Member of International Scientific Conferences Committees

### Local Organizing Committee

- 64th International Universities' Power Engineering Conference (UPEC 2029), Thessaloniki, Greece, 2029
- International Symposium on High Voltage Engineering (ISH), Thessaloniki, Greece, 2027 (**Secretary**)

- XVIII International Symposium on Lightning Protection (SIPDA), Thessaloniki, Greece, 2025 (**Secretary**)
- International Conference on Power System Transients (IPST), Thessaloniki, Greece, 2023

#### **Committees**

- 26th International Conference on Environment and Electrical Engineering (EEEIC) & 10th Industrial and Commercial Power Systems Europe (ICPS), Lisboa, Portugal, 2026 (**University Relations Chair**)

### **E. Session Chairman of international Scientific Conferences**

- International Conference on Lightning Protection (ICLP), Sapporo, Japan, May/June 2026. Session: “Lightning protection of renewable energy systems - 1”
- International Conference on Electrical and Electronics Engineering (ELECO 2025), Bursa, Turkey, November 2025. Session: “High Voltage Techniques”
- International Conference on Lightning Protection (ICLP), Dresden, Germany, September 2024. Session: “Protection of Infrastructure, E-Vehicles and Railway Systems - 1”

### **F. Organization of an International Workshop**

- Presentation of Research Results of the SPOTS Project, Thessaloniki, Greece, June 2024. Organization of a hybrid workshop for the presentation and dissemination of the research results of the SPOTS project (Section 5.C Research Projects). In total more than thirty-five (35) participants, most remotely from abroad, coming from academia and industry.

### **G. Member of the Working Group**

- CIGRE Working Group C4.74 “Line and Cable Models for Steady-State and Transient Studies,” 2023 - today

### **H. Reviewer of Scientific Journals ([Web of Science](#) profile, former publons)**

In total seventy-eight (78) international scientific journals, including eighteen (18) journals published by IEEE, ten (10) journals published by IET, and **Reports on Progress in Physics (IOP)**. Indicatively:

1. IEEE Transactions on Power Delivery
2. IEEE Transactions on Electromagnetic Compatibility
3. IEEE Transactions on Dielectrics and Electrical Insulation
4. IEEE Transactions on Industry Applications
5. IEEE Power Engineering Letters
6. IEEE Access
7. Electric Power Systems Research (Elsevier)
8. High Voltage (IET)
9. IET Generation, Transmission & Distribution
10. Reports on Progress in Physics (IOP)

### **I. Reviewer of International Scientific Conferences**

In total twenty-five (25) international scientific conferences, including ICLP, IPST, ICHVE, IEEE PES GM, IEEE IAS AM, IEEE PES T&D CE, EEEIC.

## 10. Publications

Total publications in major **international peer-reviewed scientific journals** and in major **international conference proceedings** with a peer review process: **Ninety-one (91)**, **(twenty-seven (27))** and **sixty-four (64)**, respectively), **seven (7)** of them were invited.

Additionally: **two (2)** publications in a technical journal without peer review process, **two (2)** publications in the peer-reviewed proceedings of a national conference, **one (1)** presentation at a conference with peer-reviewed abstract, **one (1)** book chapter, and scientific editing of **one (1)** book.

Profile links: [ResearchGate](#) [Google Scholar](#)  [ORCID](#) [Web of Science™](#)

[ORCID ID 0000-0002-5259-7043](#)

[Scopus' Author ID 36782180400](#)

[RESEARCHERID ID O-2104-2013](#)

### A. PhD Thesis

Z. G. Datsios, "Investigation of soil ionization around concentrated grounding systems: Effects on the lightning performance of overhead transmission lines," High Voltage Laboratory, Department of Energy, School of Electrical and Computer Engineering, Faculty of Engineering, Aristotle University of Thessaloniki, June 2017. (in Greek). DOI: [10.12681/eadd/40998](https://doi.org/10.12681/eadd/40998)

### B. Diploma Thesis

Z. G. Datsios and N. C. Mavrikakis, "ATP-EMTP simulation of basic components of overhead transmission lines on the basis of several models reported in literature," High Voltage Laboratory, Department of Energy, School of Electrical and Computer Engineering, Faculty of Engineering, Aristotle University of Thessaloniki, September 2009. (in Greek) [Link](#)

### C. Book Chapters

Z. G. Datsios, *Grounding Systems*, Chapter 12 in *Modern Electrical Distribution Network – HEDNO*, pp. 273-337, Volume B, Editors: D. Stimoniaris and D. Tsiamitros, INNORA Publications, ISBN: 978-618-86853-2-1, Kozani, Greece, 2026.

### D. Scientific Editing of Books

**Scientific editing** of the Greek translation of the book: W. J. Dally and R. C. Harting, "Digital Design: A Systems Approach," Cambridge University Press, Cambridge, UK, 2012.

Greek Translated Version: W. J. Dally και R. C. Harting, «Ψηφιακή Σχεδίαση: από τη σκοπιά των συστημάτων», Crete University Press (CUP), Foundation for Research and Technology Hellas (FORTH), Heraklion, Greece, 2015.

### E. Scientific Journals with Peer Review Process

- [J1] Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Estimation of the minimum shielding failure flashover current for first and subsequent lightning strokes to overhead transmission lines," *Electric Power Systems Research*, Special Issue: *Lightning Research and Lightning Protection Technologies*, vol. 113, pp. 141-150, August 2014. **(invited)**  
DOI: [10.1016/j.epsr.2014.03.008](https://doi.org/10.1016/j.epsr.2014.03.008)
- [J2] Z. G. Datsios and P. N. Mikropoulos, "Modeling of lightning impulse behavior of long air gaps and insulators including predischage current: Implications on insulation coordination of overhead transmission lines and substations," *Electric Power Systems Research*, Special Issue: *Progress on Lightning Research and Protection Technologies*, vol. 139, pp. 37-46, October 2016. **(invited)**  
DOI: [10.1016/j.epsr.2015.11.036](https://doi.org/10.1016/j.epsr.2015.11.036)

- [J3] Z. G. Datsios and P. N. Mikropoulos, "Safety performance evaluation of typical grounding configurations of MV/LV distribution substations," *Electric Power Systems Research*, vol. 150, pp. 36-44, September 2017. DOI: [10.1016/j.epsr.2017.04.016](https://doi.org/10.1016/j.epsr.2017.04.016)
- [J4] Z. G. Datsios, P. N. Mikropoulos, and I. Karakousis, "Laboratory characterization and modeling of DC electrical resistivity of sandy soil with variable water resistivity and content," *IEEE Transactions on Dielectrics and Electrical Insulation*, vol. 24, no. 5, pp. 3063-3072, October 2017. DOI: [10.1109/TDEI.2017.006583](https://doi.org/10.1109/TDEI.2017.006583)
- [J5] Z. G. Datsios and P. N. Mikropoulos, "Characterization of the frequency dependence of the electrical properties of sandy soil with variable grain size and water content," *IEEE Transactions on Dielectrics and Electrical Insulation*, vol. 26, no. 3, pp. 904-912, June 2019. DOI: [10.1109/TDEI.2018.007864](https://doi.org/10.1109/TDEI.2018.007864)
- [J6] Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Effects of lightning channel equivalent impedance on lightning performance of overhead transmission lines," *IEEE Transactions on Electromagnetic Compatibility*, vol. 61, no. 3, pp. 623-630, June 2019. DOI: [10.1109/TEMC.2019.2900420](https://doi.org/10.1109/TEMC.2019.2900420)
- [J7] T. A. Papadopoulos, Z. G. Datsios, A. I. Chrysochos, P. N. Mikropoulos, and G. K. Papagiannis, "Wave propagation characteristics and electromagnetic transient analysis of underground cable systems considering frequency-dependent soil properties," *IEEE Transactions on Electromagnetic Compatibility*, vol. 63, no. 1, pp. 259-267, February 2021. DOI: [10.1109/TEMC.2020.2986821](https://doi.org/10.1109/TEMC.2020.2986821)
- [J8] Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Closed-form expressions for the estimation of the minimum backflashover current of overhead transmission lines," *IEEE Transactions on Power Delivery*, vol. 36, no. 2, pp. 522-532, April 2021. DOI: [10.1109/TPWRD.2020.2984423](https://doi.org/10.1109/TPWRD.2020.2984423)
- [J9] T. A. Papadopoulos, Z. G. Datsios, A. I. Chrysochos, P. N. Mikropoulos, and G. K. Papagiannis, "Modal propagation characteristics and transient analysis of multiconductor cable systems buried in lossy dispersive soils," *Electric Power Systems Research*, vol. 196, paper no. 107249, pp. 1-10, July 2021. DOI: [10.1016/j.epsr.2021.107249](https://doi.org/10.1016/j.epsr.2021.107249)
- [J10] Z. G. Datsios, A. I. Ioannidis, T. A. Papadopoulos, and T. E. Tsovilis, "A stochastic model for evaluating the lightning performance of a -400 kV HVDC overhead line," *IEEE Transactions on Electromagnetic Compatibility*, vol. 63, no. 5, pp. 1433-1443, October 2021. DOI: [10.1109/TEMC.2021.3054307](https://doi.org/10.1109/TEMC.2021.3054307)
- [J11] Z. G. Datsios, P. N. Mikropoulos, E. V. Staikos, T. E. Tsovilis, D. G. Patsalis, D. Vlachopoulos, and S. Ganatsios, "Experimental investigation of the lightning impulse behavior of wet sandy soil," *IEEE Transactions on Industry Applications*, vol. 58, no. 1, pp. 212-223, January/February 2022. DOI: [10.1109/TIA.2021.3131972](https://doi.org/10.1109/TIA.2021.3131972)
- [J12] A. G. Martins-Britto, T. A. Papadopoulos, Z. G. Datsios, A. I. Chrysochos, and G. K. Papagiannis, "Influence of lossy ground on high-frequency induced voltages on aboveground pipelines by nearby overhead transmission lines," *IEEE Transactions on Electromagnetic Compatibility*, vol. 64, no. 6, pp. 2273-2282, December 2022. DOI: [10.1109/TEMC.2022.3201874](https://doi.org/10.1109/TEMC.2022.3201874)
- [J13] Z. G. Datsios, P. N. Mikropoulos, T. E. Tsovilis, E. Thalassinakis, and G. Pagonis, "Investigation of line surge arresters application to the 150 kV system of Rhodes," *Electric Power Systems Research*, Special Issue: *Recent Advancements in Lightning Physics, Protection, and Safety*, vol. 213, article no. 108763, December 2022. (invited) DOI: [10.1016/j.epsr.2022.108763](https://doi.org/10.1016/j.epsr.2022.108763)
- [J14] A. I. Ioannidis, Z. G. Datsios, A. K. Gerodimos, and T. E. Tsovilis, "Accelerating stochastic lightning attachment simulations for the estimation of lightning incidence to overhead lines," *IEEE Transactions on Electromagnetic Compatibility*, vol. 65, no. 3, pp. 839-849, June 2023. (open access) DOI: [10.1109/TEMC.2023.3234626](https://doi.org/10.1109/TEMC.2023.3234626)

- [J15] Z. G. Datsios, D. G. Patsalis, P. N. Mikropoulos, and T. E. Tsovilis, "Effects of approximating recorded lightning currents with CIGRE waveforms on computed fast-front overvoltages and critical lightning currents causing flashover to overhead transmission lines," *IEEE Transactions on Power Delivery*, vol. 38, no. 5, pp. 3084-3094, October 2023. (**open access**) DOI: [10.1109/TPWRD.2023.3267264](https://doi.org/10.1109/TPWRD.2023.3267264)
- [J16] T. A. Papadopoulos, Z. G. Datsios, A. I. Chrysochos, A. G. Martins-Britto, and G. K. Papagiannis, "Transient induced voltages on aboveground pipelines parallel to overhead transmission lines," *Electric Power Systems Research*, vol. 223, article no. 109631, October 2023. DOI: [10.1016/j.epsr.2023.109631](https://doi.org/10.1016/j.epsr.2023.109631)
- [J17] A. I. Ioannidis, Z. G. Datsios, and T. E. Tsovilis, "Estimating the shielding failure flashover rate of single-circuit overhead lines with horizontal phase configuration via stochastic lightning attachment simulations," *Electric Power Systems Research*, vol. 223, article no. 109620, October 2023. DOI: [10.1016/j.epsr.2023.109620](https://doi.org/10.1016/j.epsr.2023.109620)
- [J18] Z. G. Datsios, E. Stracqualursi, D. G. Patsalis, R. Araneo, P. N. Mikropoulos, and T. E. Tsovilis, "Evaluation of the backflashover performance of a 150 kV overhead transmission line considering frequency- and current-dependent effects of tower grounding systems," *IEEE Transactions on Industry Applications*, vol. 60, no. 2, pp. 2611-2620, March/April 2024. (**open access**) DOI: [10.1109/TIA.2023.3338132](https://doi.org/10.1109/TIA.2023.3338132)
- [J19] Z. G. Datsios, D. G. Patsalis, P. N. Mikropoulos, and T. E. Tsovilis, "Estimation of lightning overvoltages and critical flashover currents of 150 kV and 400 kV overhead lines: Effects of the CIGRE lightning current waveform parameters," *Electric Power Systems Research*, vol. 231, article no. 110219, June 2024. (**invited**) DOI: [10.1016/j.epsr.2024.110219](https://doi.org/10.1016/j.epsr.2024.110219)
- [J20] T. E. Tsovilis, G. D. Peppas, E. T. Staikos, A. Y. Hadjicostas, and Z. G. Datsios, "Exploring the surge degradation of natural ester oil-based nanofluids," *Scientific Reports – Nature Portofolio*, vol. 14, article no. 7584, 2024. (**open access**) DOI: [10.1038/s41598-024-57575-0](https://doi.org/10.1038/s41598-024-57575-0)
- [J21] Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Evaluation of the backflashover performance of 150 kV and 400 kV double-circuit overhead transmission lines as affected by lightning attachment models and peak current distributions," *Electric Power Systems Research*, vol. 235, article no. 110839, October 2024. (**invited**) DOI: [10.1016/j.epsr.2024.110839](https://doi.org/10.1016/j.epsr.2024.110839)
- [J22] P. K. Samaras, E. T. Staikos, P. P. Tsouris, Z. G. Datsios, P. N. Mikropoulos, T. E. Tsovilis, and N. D. Kokkinos, "Evaluation of the electric stress on an insulating down-conductor caused by lightning strikes through ATP-EMTP simulations," *IEEE Transactions on Industry Applications*, vol. 60, no. 6, pp. 8353-8361, November/December 2024. DOI: [10.1109/TIA.2024.3429472](https://doi.org/10.1109/TIA.2024.3429472)
- [J23] T. E. Tsovilis, A. Y. Hadjicostas, E. T. Staikos, Z. G. Datsios, and G. D. Peppas, "Surge current withstand capability of natural ester oil: A comparison to gas-to-liquid transformer oil," *IEEE Transactions on Industry Applications*, vol. 60, no. 6, pp. 8362-8370, November/December 2024. DOI: [10.1109/TIA.2024.3454232](https://doi.org/10.1109/TIA.2024.3454232)
- [J24] A. Y. Hadjicostas, E. T. Staikos, Z. G. Datsios, G. D. Peppas, and T. E. Tsovilis, "Surge protection of charging stations against impinging overvoltages due to lightning strikes to incoming medium voltage overhead line," *IEEE Transactions on Industry Applications*, vol. 61, no. 2, pp. 2324-2335, March/April 2025. (**open access**) DOI: [10.1109/TIA.2024.3524952](https://doi.org/10.1109/TIA.2024.3524952)
- [J25] E. Stracqualursi, Z. G. Datsios, R. Araneo, P. N. Mikropoulos, and T. E. Tsovilis, "Implementation of leader development models for prediction of insulation flashover in lightning studies," *IEEE Transactions on Industry Applications*, vol. 61, no. 6, pp. 8760-8770, November/December 2025. DOI: [10.1109/TIA.2025.3577136](https://doi.org/10.1109/TIA.2025.3577136)
- [J26] A. Y. Hadjicostas, Z. G. Datsios, P. N. Mikropoulos, T. E. Tsovilis, A. Kagiannas, Z. Politis, and G. D. Peppas, "Dimensioning of sheath voltage limiters for single-core power cables connecting an

overhead transmission line to a 150 kV substation," *IEEE Transactions on Industry Applications*, vol. 61, no. 6, pp. 8832-8842, November/December 2025. **(open access)**  
DOI: [10.1109/TIA.2025.3583678](https://doi.org/10.1109/TIA.2025.3583678)

- [J27] Z. G. Datsios, D. G. Patsalis, A. A. Gkougkougianis, A. G. Tsironis, P. N. Mikropoulos, and T. E. Tsovilis, "Estimation of lightning overvoltages and critical backflashover currents of 150 kV and 400 kV overhead line due to subsequent strokes," *Electric Power Systems Research*, , vol. 260, article no. 113319, November 2026. **(invited)** DOI: [10.1016/j.epsr.2026.113319](https://doi.org/10.1016/j.epsr.2026.113319)

## F. Conference Proceeding with Peer Review Process

- [C1] P. N. Mikropoulos, T. E. Tsovilis, Z. G. Datsios, and N. C. Mavrikakis, "Effects of simulation models of overhead transmission line basic components on backflashover surges impinging on GIS substations," in Proc. *45th International Universities' Power Engineering Conference (UPEC)*, Cardiff, Wales, August 2010, paper no. 72. [Link](#)
- [C2] Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Shielding failure current of overhead transmission lines generated through an ATPDraw object," in Proc. *International Conference on Power Systems Transients (IPST)*, Delft, The Netherlands, June 2011, paper no. 38. [Link](#)
- [C3] Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Impulse resistance of concentrated tower grounding systems simulated by an ATPDraw object," in Proc. *International Conference on Power Systems Transients (IPST)*, Delft, The Netherlands, June 2011, paper no. 39. [Link](#)
- [C4] Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Insulator string flashover modeling with the aid of an ATPDraw object," in Proc. *46th International Universities' Power Engineering Conference (UPEC)*, Soest, Germany, September 2011, paper no. 102. [Link](#)
- [C5] Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Estimation of the minimum shielding failure current causing flashover in overhead lines of the Hellenic transmission system through ATP-EMTP simulations," in Proc. *31st International Conference on Lightning Protection (ICLP)*, Vienna, Austria, September 2012, paper no. 272. DOI: [10.1109/ICLP.2012.6344378](https://doi.org/10.1109/ICLP.2012.6344378) **(ICLP 2012 Young Scientist Award)**
- [C6] Z. G. Datsios and P. N. Mikropoulos, "Safe grounding system design for a photovoltaic power station," in Proc. *8th Mediterranean Conference on Power Generation, Transmission, Distribution and Energy Conversion*, Cagliari, Italy, October 2012, paper no. 62. DOI: [10.1049/cp.2012.2041](https://doi.org/10.1049/cp.2012.2041)
- [C7] Z. G. Datsios, P. N. Mikropoulos, Z. Politis, A. G. Kagiannas, and T. E. Tsovilis, "Protection of distribution transformer against arising or transferred fast-front overvoltages: Effects of surge arrester connection conductors length," in Proc. *18th International Symposium on High Voltage Engineering (ISH)*, Seoul, Republic of Korea, August 2013, pp. 303-308, paper no. OB2-04. [Link](#)
- [C8] Z. G. Datsios, P. N. Mikropoulos, A. Teneketzoglou, and D. Tzikas, "Safety performance evaluation of fence grounding configurations in high voltage installations," in Proc. *49th International Universities' Power Engineering Conference (UPEC)*, Cluj-Napoca, Romania, September 2014. DOI: [10.1109/UPEC.2014.6934650](https://doi.org/10.1109/UPEC.2014.6934650)
- [C9] Z. G. Datsios and P. N. Mikropoulos, "Implementation of leader development models in ATP-EMTP using a type-94 circuit component," in Proc. *32nd International Conference on Lightning Protection (ICLP)*, Shanghai, China, October 2014, pp. 735-741, paper no. 270. DOI: [10.1109/ICLP.2014.6973265](https://doi.org/10.1109/ICLP.2014.6973265)
- [C10] Z. G. Datsios and P. N. Mikropoulos, "Effect of tower modelling on the minimum backflashover current of overhead transmission lines," in Proc. *19th International Symposium on High Voltage Engineering (ISH)*, Pilsen, Czech Republic, August 2015, paper no. 26. [Link 1](#), [Link 2](#)
- [C11] Z. G. Datsios, P. N. Mikropoulos, T. E. Tsovilis, and S. I. Angelakidou, "Estimation of the minimum backflashover current of overhead lines of the Hellenic transmission system through ATP-EMTP

- simulations,” in Proc. *International Colloquium on Lightning and Power Systems*, CIGRE Study Committee C4, Bologna, Italy, June 2016, paper no. 32. [Link 1](#), [Link 2](#)
- [C12] [Z. G. Datsios](#) and P. N. Mikropoulos, “Impulse breakdown characteristics of dry sand: Effect of sand grain size,” in Proc. *33rd International Conference on Lightning Protection (ICLP)*, Estoril, Portugal, September 2016, paper no. 261. DOI: [10.1109/ICLP.2016.7791445](#)
- [C13] [Z. G. Datsios](#), P. N. Mikropoulos, T. E. Tsovilis, and S. I. Angelakidou, “Effect of concentrated tower grounding system modeling on the minimum backflashover current and BFR of 150 and 400 kV overhead transmission lines,” in Proc. *2018 IEEE International Conference on High Voltage Engineering and Application (ICHVE)*, Athens, Greece, September 2018, paper no. O-TE1-2. DOI: [10.1109/ICHVE.2018.8641998](#)
- [C14] [Z. G. Datsios](#), P. N. Mikropoulos, and I. Karakousis, “Laboratory measurement of the low-frequency electrical properties of sand,” in Proc. *34th International Conference on Lightning Protection (ICLP)*, Rzeszow, Poland, September 2018, paper no. 104. DOI: [10.1109/ICLP.2018.8503351](#)
- [C15] T. A. Papadopoulos, [Z. G. Datsios](#), A. I. Chrysochos, P. N. Mikropoulos, and G. K. Papagiannis, “Impact of the frequency-dependent soil electrical properties on the electromagnetic field propagation in underground cables,” in Proc. *International Conference on Power Systems Transients (IPST)*, Perpignan, France, June 2019, paper no. 31. [Link](#)
- [C16] [Z. G. Datsios](#), P. N. Mikropoulos, T. E. Tsovilis, V. T. Karakostas, and S. P. Mavidou, “Estimation of the minimum backflashover current of 150 and 400 kV overhead transmission lines through ATP-EMTP simulations: Effect of the lightning stroke location along line spans,” in Proc. *21st International Symposium on High Voltage Engineering (ISH)*, Budapest, Hungary, August 2019, paper no. 993. DOI: [10.1007/978-3-030-31676-1\\_138](#)
- [C17] [Z. G. Datsios](#), P. N. Mikropoulos, and E. T. Staikos, “Methods for field measurement of the frequency-dependent soil electrical properties: Evaluation of electrode arrangements through FEM computations,” in Proc. *21st International Symposium on High Voltage Engineering (ISH)*, Budapest, Hungary, August 2019, paper no. 760. DOI: [10.1007/978-3-030-31676-1\\_124](#)
- [C18] [Z. G. Datsios](#), A. I. Ioannidis, T. A. Papadopoulos, and T. E. Tsovilis, “A parametric study on the critical lightning currents causing flashover to the overhead lines of a  $\pm 533$  kV HVDC transmission system,” in Proc. *IEEE International Conference on Environment and Electrical Engineering (EEEIC)*, Madrid, Spain, June 2020, pp. 1636-1641, paper no. 1390. DOI: [10.1109/EEEIC/ICPSEurope49358.2020.9160553](#)
- [C19] [Z. G. Datsios](#), P. N. Mikropoulos, E. V. Staikos, T. E. Tsovilis, D. Vlachopoulos, and S. Ganatsios, “Laboratory measurement of the impulse characteristics of wet sand,” in Proc. *IEEE International Conference on Environment and Electrical Engineering (EEEIC)*, Madrid, Spain, June 2020, pp. 1642-1647, paper no. 1391. DOI: [10.1109/EEEIC/ICPSEurope49358.2020.9160832](#)
- [C20] [Z. G. Datsios](#), P. N. Mikropoulos, P. K. Samaras, and T. E. Tsovilis, “Experimental arrangement for investigating the surface dielectric strength of insulating materials,” in Proc. *2020 IEEE International Conference on High Voltage Engineering and Application (ICHVE)*, Beijing, China, September 2020. DOI: [10.1109/ICHVE49031.2020.9279895](#)
- [C21] T. A. Papadopoulos, [Z. G. Datsios](#), A. I. Chrysochos, P. N. Mikropoulos, and G. K. Papagiannis, “Modal propagation characteristics and transient analysis of multiconductor cable systems buried in lossy dispersive soils,” in Proc. *International Conference on Power Systems Transients (IPST)*, Belo Horizonte, Brazil, June 2021. [Link](#) (publication [J9] presented at the conference)
- [C22] [Z. G. Datsios](#), P. N. Mikropoulos, T. E. Tsovilis, E. Thalassinakis, and G. Pagonis, “Application of non-gapped line surge arresters to the 150 kV overhead lines of Rhodes: An investigation through ATP-EMTP simulations,” in Proc. *35th International Conference on Lightning Protection (ICLP) – XVI International Symposium on Lightning Protection (SIPDA)*, Sri Lanka, September 2021, paper no. 275. DOI: [10.1109/ICLPandSIPDA54065.2021.9627334](#)

- [C23] Z. G. Datsios, E. Stracqualursi, R. Araneo, P. N. Mikropoulos, and T. E. Tsovilis, "Estimation of the minimum backflashover current and backflashover rate of a 150 kV overhead transmission line: Frequency and current-dependent effects of grounding systems," in Proc. *IEEE International Conference on Environment and Electrical Engineering (EEEIC)*, Prague, Czech Republic, June/July 2022. DOI: [10.1109/EEEIC/ICPSEurope54979.2022.9854553](https://doi.org/10.1109/EEEIC/ICPSEurope54979.2022.9854553)
- [C24] D. G. Patsalis, Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Estimation of lightning overvoltages and critical currents causing flashover to a 150 kV overhead transmission line: Effects of recorded lightning current waveforms," in Proc. *2022 IEEE International Conference on High Voltage Engineering and Application (ICHVE)*, Chongqing, China, September 2022, paper no. PA-21\_286. DOI: [10.1109/ICHVE53725.2022.9961755](https://doi.org/10.1109/ICHVE53725.2022.9961755)
- [C25] Z. G. Datsios, P. N. Mikropoulos, and M. G. Vasileiou, "Determination of electrical discharge characteristics in soil through impulse voltage and current measurements," in Proc. *2022 IEEE International Conference on High Voltage Engineering and Application (ICHVE)*, Chongqing, China, September 2022, paper no. ID1-4\_287. DOI: [10.1109/ICHVE53725.2022.9961377](https://doi.org/10.1109/ICHVE53725.2022.9961377)
- [C26] Z. G. Datsios, D. G. Patsalis, P. N. Mikropoulos, and T. E. Tsovilis, "Effects of lightning current waveform on the fast-front overvoltages and critical currents causing insulation flashover to a 150 kV overhead transmission line," in Proc. *36th International Conference on Lightning Protection (ICLP)*, Cape Town, South Africa, October 2022, pp. 521-526, paper no. ICLP 2022-PPTDL2-6. DOI: [10.1109/ICLP56858.2022.9942612](https://doi.org/10.1109/ICLP56858.2022.9942612)
- [C27] A. I. Ioannidis, Z. G. Datsios, G. A. Tsaousakis, and T. E. Tsovilis, "Analysis of the fractal dimension of lightning discharges based on a stochastic lightning attachment simulation model," in Proc. *36th International Conference on Lightning Protection (ICLP)*, Cape Town, South Africa, October 2022, pp. 100-105, paper no. ICLP2022-LDA-6. DOI: [10.1109/ICLP56858.2022.9942652](https://doi.org/10.1109/ICLP56858.2022.9942652) (**ICLP 2022 Diploma for Young Scientists Award**)
- [C28] Z. G. Datsios, P. N. Mikropoulos, T. E. Tsovilis, A. C. Antonaros, and D. A. Karamouslis, "Estimation of the critical lightning currents causing flashover to overhead transmission lines through iterative ATP-EMTP simulations by means of an external program," in Proc. *The 2nd International Conference on Energy Transition in the Mediterranean Area (SyNERGY MED 2022)*, Thessaloniki, Greece, October 2022, paper no. 167. DOI: [10.1109/SyNERGYMED55767.2022.9941439](https://doi.org/10.1109/SyNERGYMED55767.2022.9941439)
- [C29] Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Evaluation of the backflashover performance of a 150 kV overhead transmission line as affected by lightning attachment models and peak current distributions," in Proc. *International Conference on Grounding & Lightning Physics and Effects (GROUND2023 & 10th LPE)*, Belo Horizonte, Brazil, May 2023. (**invited**) [Link](#)
- [C30] E. Stracqualursi, Z. G. Datsios, R. Araneo, P. N. Mikropoulos, and T. E. Tsovilis, "Finite difference time domain implementation of leader development models for lightning studies," in Proc. *IEEE International Conference on Environment and Electrical Engineering (EEEIC)*, Madrid, Spain, June 2023. DOI: [10.1109/EEEIC/ICPSEurope57605.2023.10194799](https://doi.org/10.1109/EEEIC/ICPSEurope57605.2023.10194799)
- [C31] T. A. Papadopoulos, Z. G. Datsios, A. I. Chrysochos, A. G. Martins-Britto, and G. K. Papagiannis, "Transient induced voltages on aboveground pipelines parallel to overhead transmission lines," in Proc. *International Conference on Power Systems Transients (IPST)*, Thessaloniki, Greece, June 2023. [Link](#) (publication [J16] presented at the conference)
- [C32] A. I. Ioannidis, Z. G. Datsios, and T. E. Tsovilis, "Estimating the shielding failure flashover rate of single-circuit overhead lines with horizontal phase configuration via stochastic lightning attachment simulations," in Proc. *International Conference on Power Systems Transients (IPST)*, Thessaloniki, Greece, June 2023. [Link](#) (publication [J17] presented at the conference)
- [C33] A. I. Ioannidis, Z. G. Datsios, and T. E. Tsovilis, "Shielding failure flashover rate estimation for a 66 kV overhead line through stochastic lightning attachment simulations," in Proc. *International Symposium on High Voltage Engineering (ISH2023)*, Glasgow, UK, August/September 2023. DOI: [10.1049/icp.2024.0764](https://doi.org/10.1049/icp.2024.0764)

- [C34] A. I. Ioannidis, Z. G. Datsios, and T. E. Tsovilis, "Backflashover rate estimation for a 66 kV overhead line considering lightning strikes along the span," in Proc. *International Symposium on High Voltage Engineering (ISH2023)*, Glasgow, UK, August/September 2023. DOI: [10.1049/icp.2024.0763](https://doi.org/10.1049/icp.2024.0763)
- [C35] T. E. Tsovilis, E. T. Staikos, A. Y. Hadjicostas, Z. G. Datsios, G. Litsardakis, E. C. Pyrgioti, A. Bakandritsos, and G. D. Peppas, "Relative permittivity of natural ester oil-based nanofluids with iron oxide nanoparticles," in Proc. *58th International Universities' Power Engineering Conference (UPEC)*, Dublin, Ireland, August/September 2023, paper no. 69. DOI: [DOI: 10.1109/UPEC57427.2023.10294931](https://doi.org/10.1109/UPEC57427.2023.10294931)
- [C36] Z. G. Datsios, A. I. Ioannidis, D. G. Patsalis, P. N. Mikropoulos, and T. E. Tsovilis, "Assessment of field data related to the lightning performance of overhead lines in the context of validating lightning performance estimation methodologies," in Proc. *58th International Universities' Power Engineering Conference (UPEC)*, Dublin, Ireland, August/September 2023, paper no. 102. DOI: [10.1109/UPEC57427.2023.10294394](https://doi.org/10.1109/UPEC57427.2023.10294394)
- [C37] Z. G. Datsios, D. G. Patsalis, P. N. Mikropoulos, and T. E. Tsovilis, "Implementation of recorded lightning current waveforms in ATP-EMTP software for fast-front transient simulations," in Proc. *58th International Universities' Power Engineering Conference (UPEC)*, Dublin, Ireland, August/September 2023, paper no. 125. DOI: [10.1109/UPEC57427.2023.10294650](https://doi.org/10.1109/UPEC57427.2023.10294650)
- [C38] P. K. Samaras, E. T. Staikos, Z. G. Datsios, P. N. Mikropoulos, T. E. Tsovilis, and N. D. Kokkinos, "Evaluation of the electric stress on an insulating down-conductor caused by lightning strikes through ATP-EMTP simulations," in Proc. *IEEE Industry Applications Annual Meeting 2023 (IAS Annual Meeting)*, Nashville, Tennessee, USA, October/November 2023. DOI: [10.1109/IAS54024.2023.10407000](https://doi.org/10.1109/IAS54024.2023.10407000)
- [C39] E. T. Staikos, A. Y. Hadjicostas, Z. G. Datsios, G. D. Peppas, C. Antrias, K. Zagkoumidis, G. Ayfantopoulou, and T. E. Tsovilis, "Surge protection of charging stations against impinging overvoltages due to negative lightning strikes to incoming medium voltage line," in Proc. *IEEE Industry Applications Annual Meeting 2023 (IAS Annual Meeting)*, Nashville, Tennessee, USA, October/November 2023. DOI: [10.1109/IAS54024.2023.10406748](https://doi.org/10.1109/IAS54024.2023.10406748)
- [C40] T. E. Tsovilis, A. Y. Hadjicostas, E. T. Staikos, K. Tsekouras, Z. G. Datsios, and G. D. Peppas, "Preliminary results on the surge current withstand capability of natural ester oil," in Proc. *IEEE Industry Applications Annual Meeting 2023 (IAS Annual Meeting)*, Nashville, Tennessee, USA, October/November 2023. DOI: [10.1109/IAS54024.2023.10406806](https://doi.org/10.1109/IAS54024.2023.10406806)
- [C41] E. T. Staikos, A. Y. Hadjicostas, P. K. Samaras, G. D. Peppas, V. N. Zagkanas, Z. G. Datsios, P. N. Mikropoulos, and T. E. Tsovilis, "Lightning impulse breakdown voltage of natural ester oil-based nanofluids with Fe<sub>2</sub>O<sub>3</sub> nanoparticles," in Proc. *24th International Conference on Environment and Electrical Engineering (EEEIC) & 8th Industrial and Commercial Power Systems Europe (I&CPS)*, Rome, Italy, June 2024, paper no. 8. DOI: [10.1109/EEEIC/ICPSEurope61470.2024.10751389](https://doi.org/10.1109/EEEIC/ICPSEurope61470.2024.10751389)
- [C42] Z. G. Datsios, D. G. Patsalis, P. N. Mikropoulos, and T. E. Tsovilis, "Application of non-gapped line arresters to 150 kV and 400 kV overhead lines: Effects of AC voltage at the instant of direct lightning strike," in Proc. *24th International Conference on Environment and Electrical Engineering (EEEIC) & 8th Industrial and Commercial Power Systems Europe (I&CPS)*, Rome, Italy, June 2024, paper no. 168. DOI: [10.1109/EEEIC/ICPSEurope61470.2024.10751231](https://doi.org/10.1109/EEEIC/ICPSEurope61470.2024.10751231)
- [C43] A. Y. Hadjicostas, E. T. Staikos, G. D. Peppas, Z. G. Datsios, G. Litsardakis, E. C. Pyrgioti, I. F. Gonos, T. E. Tsovilis, "Preliminary results on the impulse breakdown characteristics of natural ester oil and oil-based nanofluid with Fe<sub>2</sub>O<sub>3</sub> nanoparticles," in Proc. *24th International Conference on Environment and Electrical Engineering (EEEIC) & 8th Industrial and Commercial Power Systems Europe (I&CPS)*, Rome, Italy, June 2024, paper no. 213. DOI: [10.1109/EEEIC/ICPSEurope61470.2024.10751582](https://doi.org/10.1109/EEEIC/ICPSEurope61470.2024.10751582)
- [C44] D. G. Patsalis, Z. G. Datsios, E. Stracqualursi, R. Araneo, P. N. Mikropoulos, and T. E. Tsovilis, "Overvoltages and critical backflashover current of a 150 kV overhead line: Influence of lightning current waveform and tower grounding system modeling," in Proc. *24th International*

- Conference on Environment and Electrical Engineering (EEEIC) & 8th Industrial and Commercial Power Systems Europe (I&CPS)*, Rome, Italy, June 2024, paper no. 335.  
DOI: [10.1109/EEEIC/ICPSEurope61470.2024.10751139](https://doi.org/10.1109/EEEIC/ICPSEurope61470.2024.10751139)
- [C45] Z. G. Datsios, D. G. Patsalis, E. Stracqualursi, R. Araneo, P. N. Mikropoulos, and T. E. Tsovilis, "Energy stress of non-gapped line arresters due to lightning strikes to a 150 kV line: Concentrated tower grounding system modeling effects," in *Proc. 24th International Conference on Environment and Electrical Engineering (EEEIC) & 8th Industrial and Commercial Power Systems Europe (I&CPS)*, Rome, Italy, June 2024, paper no. 340.  
DOI: [10.1109/EEEIC/ICPSEurope61470.2024.10751628](https://doi.org/10.1109/EEEIC/ICPSEurope61470.2024.10751628)
- [C46] A. I. Ioannidis, Z. G. Datsios, and T. E. Tsovilis, "Estimation of lightning incidence to the Cahora-Bassa HVDC overhead lines based on stochastic modelling of lightning attachment," in *Proc. 37th International Conference on Lightning Protection (ICLP)*, Dresden, Germany, September 2024, pp. 414-420. [Link](#)
- [C47] Z. G. Datsios, D. G. Patsalis, A. A. Gkougkougianis, A. G. Tsironis, P. N. Mikropoulos, and T. E. Tsovilis, "Estimation of lightning overvoltages and critical backflashover current of a 150 kV overhead line due to subsequent strokes," in *Proc. 37th International Conference on Lightning Protection (ICLP)*, Dresden, Germany, September 2024, pp. 662-668. [Link](#)
- [C48] A. Y. Hadjicostas, Z. G. Datsios, P. N. Mikropoulos, T. E. Tsovilis, A. Kagiannas, Z. Politis, and G. D. Peppas, "Evaluation of lightning-related stress to sheath voltage limiters of single-core power cables connecting an overhead transmission line to a 150 kV substation," in *Proc. IEEE Industry Applications Annual Meeting 2024 (IAS Annual Meeting)*, Phoenix, Arizona, USA, October 2024.  
DOI: [10.1109/IAS55788.2024.11023680](https://doi.org/10.1109/IAS55788.2024.11023680)
- [C49] E. Stracqualursi and Z. G. Datsios, "A practical approach to deal with instabilities of the CIGRE type 15 source in ATP-EMTP," in *Proc. European EMTP-ATP Users Group 2024 Conference (EEUG 2024)*, Rome, Italy, October 2024. [Link](#)
- [C50] Z. G. Datsios, "Using ATP-EMTP to support high voltage laboratory classes on the generation of DC and impulse voltages," in *Proc. European EMTP-ATP Users Group 2024 Conference (EEUG 2024)*, Rome, Italy, October 2024. [Link](#)
- [C51] Z. G. Datsios, D. G. Patsalis, P. N. Mikropoulos, and T. E. Tsovilis, "An investigation of aspects affecting lightning transient simulations of a 150 kV overhead transmission line equipped with line surge arresters," in *Proc. European EMTP-ATP Users Group 2024 Conference (EEUG 2024)*, Rome, Italy, October 2024. [Link](#)
- [C52] S. Visacro, B. Pereira, F. H. Silveira, Z. G. Datsios, D. G. Patsalis, P. N. Mikropoulos, and T. E. Tsovilis, "Insight into factors affecting the calculated lightning performance of transmission lines subject to the incidence of positive return strokes," in *Proc. International Conference on Grounding & Lightning Physics and Effects (GROUND2024 & 11th LPE)*, João Pessoa, Brazil, November 2024, pp. 157-162. [Link](#)
- [C53] A. Y. Hadjicostas, Z. G. Datsios, G. D. Peppas, and T. E. Tsovilis, "Energy stress on surge protective devices installed in DC charging stations due to negative lightning strikes on light pole," in *Proc. 2025 IEEE Industry Applications Society Annual Meeting (IAS Annual Meeting) Incorporating the Industrial & Commercial Power Systems Asia Conference*, New Taipei City, Taiwan, June 2025.  
DOI: [10.1109/IAS62731.2025.11061547](https://doi.org/10.1109/IAS62731.2025.11061547)
- [C54] A. Ioannidis, Z. G. Datsios, M. Marzinotto, F. Palone, T. Tsovilis, and R. Spezie, "Lightning performance assessment of the new  $\pm 500$  kV HVDC overhead lines of the Italian transmission grid based on a stochastic approach," in *Proc. XVIII SIPDA International Symposium on Lightning Protection (SIPDA 2025)*, Thessaloniki, Greece, September 2025.
- [C55] Z. G. Datsios, T. A. Papadopoulos, J. E. Guevara Asorza, A. G. Martins-Britto, and A. I. Chrysochos, "Overhead line modeling effects on shielding failure overvoltages and the associated critical

- flashover currents of a 150 kV overhead line,” in Proc. *XVIII SIPDA International Symposium on Lightning Protection (SIPDA 2025)*, Thessaloniki, Greece, September 2025.
- [C56] T. T. Manassis, Z. G. Datsios, and N. V. Kantartzis, “Modeling of ground electrodes in CST Studio Suite for evaluating their lightning response,” in Proc. *XVIII SIPDA International Symposium on Lightning Protection (SIPDA 2025)*, Thessaloniki, Greece, September 2025.
- [C57] S. Visacro, F. H. Silveira, A. A. P. Cunha, B. Pereira, P. N. Mikropoulos, T. E. Tsovilis, D. G. Patsalis, and Z. G. Datsios, “Relevance of positive flashes on the calculated lightning performance of transmission lines,” in Proc. *XVIII SIPDA International Symposium on Lightning Protection (SIPDA 2025)*, Thessaloniki, Greece, September 2025.
- [C58] Z. G. Datsios, E. Stracqualursi, and O. P. Hevia, “Influence of the CIGRE lightning current waveform implementation on ATP-EMTP simulations of lightning strikes to a 150 kV overhead transmission line,” in Proc. *XVIII SIPDA International Symposium on Lightning Protection (SIPDA 2025)*, Thessaloniki, Greece, September 2025.
- [C59] Z. G. Datsios, E. Stracqualursi, P. N. Mikropoulos, and T. E. Tsovilis, “Generation of the maximum shielding failure current of overhead transmission lines in ATP-EMTP,” in Proc. *European EMTP-ATP Users Group 2025 Conference (EEUG 2025)*, Lyon, France, September/October 2025. [Link](#)
- [C60] Z. G. Datsios, D. A. Tsiamitros, D. Stimoniari, and N. Lettas, “Evaluation of the electrical safety of low-voltage distribution networks through ATP-EMTP and XGSA-FD simulations,” in Proc. *International Conference on Electrical and Electronics Engineering (ELECO 2025)*, Bursa, Turkey, November 2025. [Link](#)
- [C61] Z. G. Datsios, T. A. Papadopoulos, J. E. Guevara Asorza, and A. G. Martins-Britto, “Modeling of overhead lines using ATPDraw for lightning transient studies,” in Proc. *38th International Conference on Lightning Protection (ICLP)*, Sapporo, Japan, June 2026.
- [C62] Z. G. Datsios, P. Grigoriadis, D. A. Tsiamitros, D. Stimoniari, and K. Siderakis, “Measurement of the tower ground impedance of the 150 kV overhead lines of Crete,” in Proc. *38th International Conference on Lightning Protection (ICLP)*, Sapporo, Japan, June 2026.
- [C63] D. C. Vomvas, I. D. Liapis, Z. G. Datsios, D. Stimoniari, and D. Tsiamitros, “Transitioning to proactive grid resilience: Health indexing and remaining useful life forecasting for aging transformers,” in Proc. *The 4th International Conference on Energy Transition in the Mediterranean Area (SyNERGY MED)*, Istanbul, Turkey, October 2026. (**accepted**)
- [C64] Z. G. Datsios, C. Xanthoudakis, D. Stimoniari, and D. Tsiamitros, “An investigation of the impact of modeling aspects on the lightning overvoltages arising at an MV/LV distribution substation with emphasis on insulation flashover prediction,” in Proc. *European EMTP-ATP Users Group 2026 Conference (EEUG 2026)*, Athens, Greece, October 2026. (**accepted**)

## G. Technical Journals without Peer Review Process

- [TJ1] Z. G. Datsios and P. N. Mikropoulos, “Safe grounding system design for a photovoltaic power station,” *Modern Technical Review*, no. 246, pp. 16-21, November-December 2012. (in Greek) [Link](#)  
(Part of publication [C6] translated in Greek; invited for publication by the Journal Editorial Committee.)
- [TJ2] Z. G. Datsios, P. N. Mikropoulos, and I. Karakousis, “Laboratory measurement of the DC electrical resistivity of soil,” *Modern Technical Review*, no. 284, pp. 18-24, September-October 2018. (in Greek). [Link 1](#), [Link 2](#)  
(Part of publication [NC1]; invited for publication by the Journal Editorial Committee.)

## H. National Conferences with Peer Review Process

- [NC1] Z. G. Datsios, P. N. Mikropoulos, and I. Karakousis, "Laboratory measurement of the DC electrical resistivity of soil," in Proc. *7th Regular National Metrology Conference, Athens, Greece, May 2018*, paper no. 31. (in Greek) [Link](#)
- [NC2] Z. G. Datsios, P. N. Mikropoulos, and I. Karakousis, "Laboratory measurement of the electrical properties of soil under variable frequency," in Proc. *7th Regular National Metrology Conference, Athens, Greece, May 2018*, paper no 32. (in Greek). [Link](#)

## I. Conference Presentations with Peer Review Process on Abstract

- [CP1] T. E. Tsovilis, E. T. Staikos, A. Y. Hadjicostas, Z. G. Datsios, G. Litsardakis, E. C. Pyrgioti, A. Bakandritsos, and G. D. Peppas, "Dielectric properties of natural ester oil-based nanofluids with iron oxide nanoparticles," *XXXVIII Panhellenic Conference on Solid State Physics and Materials Science*, Ioannina, Greece, September 2024.

Xanthi, Greece, September 2026