

PROFESSIONAL AND RESEARCH ACTIVITY REPORT

Dipl.-Ing. Robert Helmut Jahrstorfer

I am a German graduate engineer with a long-standing professional background in electrical engineering, photovoltaic technology, energy consultancy, technical training and expert assessment. I began my doctoral studies in the field of Electrical Engineering in 2019. My doctoral research builds on this practical engineering experience and focuses, as reflected by my scientific output, on the assessment of Potential Induced Degradation (PID) in photovoltaic systems, including measurement methods, environmental influences, electrical parameters and maintenance-related aspects.

1. Education and Technical Training

Period	Education / Training
1972–1976	Primary School, Eichendorf
1976–1978	Secondary School, Eichendorf
1978–1982	Secondary Modern School, Landau/Isar
1982–1985	Vocational School and apprenticeship as an electrician
1985–1987	Deggendorf Technical High School
1987–1992	University of Applied Sciences Regensburg – engineering studies leading to the qualification Dipl.-Ing. (FH)

The combination of vocational training as an electrician and higher engineering education provides a practical and technical foundation for my later professional activity in solar technology, energy systems and photovoltaic applications.

2. Professional Career and Technical Expertise

Since 1993, I have worked as a self-employed entrepreneur. His professional profile has progressively developed toward energy-related engineering and technical consultancy.

Since 2002, I have worked as a specialist in solar technology and as an energy consultant. Since 2010, his activity has also included building management, and since 2014 he has been active as a consultant in electromobility.

Since 1998, I have been a member of the Federal Association of Independent Experts, with professional involvement in the areas of solar technology and environmental analysis.

A particularly important professional qualification is my public appointment and swearing-in as an expert by the Chamber of Industry and Commerce (IHK) for Lower Bavaria in Passau, in force since November 2014, for the subject area Photovoltaics (PV) / Photovoltaic System Technology (PVAT).

3. Teaching, Training and Examination Activities

I have been active as a lecturer since 1998. My teaching and professional training activities have involved the TÜV SÜD Academy, TÜV Rheinland Academy, the Chamber of Industry and Commerce, HWK Munich and TAE Esslingen. I have also served as a member of the HWK Munich examination board. These activities complement my engineering practice by demonstrating sustained involvement in professional education, qualification and technical evaluation.

4. Doctoral Research Activity

I began my doctoral training in 2019 in the field of Electrical Engineering. During the doctoral stage, my research activity has been closely connected with photovoltaic system reliability and, more specifically, with Potential Induced Degradation (PID). The scientific works produced during this period show a coherent development from the comparative assessment of PID detection methods toward experimental investigations of environmental and electrical factors influencing degradation.

The research topics addressed include methods for assessing PID in photovoltaic systems, the influence of humidity and temperature on PID from a maintenance perspective, and experimental investigation of the influence of shunt resistance on degradation. The doctoral activity also includes work on maintenance planning for a medium-sized ground-mounted photovoltaic plant. Taken together, these contributions reflect a research direction that combines field experience, measurement-oriented investigation and practical maintenance considerations.

5. Scientific Publications and International Conference Contributions

The scientific record provided for the doctoral period comprises six contributions: three papers published in indexed international conference proceedings and three communications presented at international conferences.

5.1. Papers published in indexed international conference proceedings

1. Robert Jahrstorfer and Alexandru Sălceanu, "Assessing Methods for Potential Induced Degradation in Photovoltaic Systems," 2021 International Conference on Electromechanical and Energy Systems (SIELMEN), Iași, Romania, 2021, pp. 266–269. DOI: 10.1109/SIELMEN53755.2021.96002791. Scopus EID: 2-s2.0-85123203332; IEEE Xplore.
2. Robert Jahrstorfer, Andrei Sălceanu and George Balan, "Influence of Humidity and Temperature on Potential Induced Degradation from a Maintenance Perspective," 2025 International Conference on Electromechanical and Energy Systems (SIELMEN), Iași, Romania, 2025, pp. 513–517. DOI: 10.1109/SIELMEN67352.2025.11260793. Web of Science: WOS:001669739200092.
3. Robert Jahrstorfer, Andrei Sălceanu and George Balan, "Experimental Approaches to the Influence of Shunt Resistance on Potential Induced Degradations," 2025 International Conference on Electromechanical and Energy Systems (SIELMEN), Iași, Romania, 2025, pp. 518–524. DOI: 10.1109/SIELMEN67352.2025.11260788. Web of Science: WOS:001669739200093.

5.2. Communications presented at international conferences

4. Robert Jahrstorfer and Alexandru Sălceanu, "Assessing Method for the Potential Induced Degradation in Photovoltaic Systems," 4th International Conference of the Doctoral School, "Gheorghe Asachi" Technical University of Iași, Romania, 19–21 May 2021, p. 123.
5. Robert Jahrstorfer and Andrei Sălceanu, "Comparative Analysis of the Main PID Assessment Methods for PV Modules Manufactured Using Polycrystalline Silicon Technology," 9th International Conference of the Doctoral School, "Gheorghe Asachi" Technical University of Iași, Romania, 13–15 May 2026, p. 39.
6. Robert Jahrstorfer and Andrei Sălceanu, "Maintenance Plan for a Medium-Sized Ground-Mounted Photovoltaic Plant," 9th International Conference of the Doctoral School, "Gheorghe Asachi" Technical University of Iași, Romania, 13–15 May 2026, p. 40.

6. Synthesis of Activity

My professional trajectory combines practical electrical engineering, photovoltaic expertise, energy consultancy, technical training and expert assessment. My long-term specialization in solar technology provides a relevant professional framework for the applied character of his doctoral research.

Since the beginning of my doctoral studies in 2019, the scientific activity documented in the attached publication list has developed around a clearly identifiable topic: the assessment, understanding and mitigation-oriented interpretation of Potential Induced Degradation in photovoltaic systems. The progression of the published and presented works shows continuity between measurement methods, environmental stress factors, electrical parameters and maintenance practice.

My doctoral activity therefore represents a natural continuation of my professional engineering experience, while the six scientific contributions demonstrate sustained participation in international scientific events and publication in indexed conference proceedings.