

Dr. Reza Saeed Kandezy
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Assistant Professor, Electrical and Computer Engineering
University of Oklahoma

A. Academic Appointments

2024- present	Assistant Professor School of Electrical and Computer Engineering, the University of Oklahoma, Norman, OK, USA
	• Course authority for 6 undergraduate, senior-level courses, and 2 graduate-level courses • Led laboratory modernization serving ~200+ students annually • Supervising and mentoring ~15+ undergraduate students annually • Integrated industry standards (IEEE/IEC) into core curriculum
2021- 2024	Research Associate School of Electrical and Computer Engineering, the University of Oklahoma, Norman, OK, USA Developing an innovative experimental setup to replicate the sub-cycle complex transient for interwound inverter-based resources in after fault period.

B. Education:

2024	University of Oklahoma, Norman, USA	Ph.D.	Electrical and Computer Engineering
2013	Amirkabir University of Technology, Tehran, Iran	M.Sc.	Electrical Power Engineering
2011	Amirkabir University of Technology, Tehran, Iran	B.Sc.	Electrical Power Engineering

C. Teaching experiences

1. Academic Instructions (Standard curriculum for undergraduate (UG) and graduate (G))

Instructor, University of Oklahoma	2022-2026, Norman, USA
• Inverter-Based Resources: System Analysis and Integration (Since 2025, Spring Semesters), UG and G • Introduction to Control Systems (Since 2025, Fall Semesters), UG • Standard Electrical and Electronic Engineering (Since 2025, Summer Semesters), UG and G • Electrical and Computer Engineering Circuit Lab (since 2025, Fall and Spring Semesters), UG • Electrical and Computer Engineering Electronic Lab (since 2025, Fall and Spring Semesters), UG • Probability, Statistics and Random Processes (Spring and Fall 2024, Spring 2026), UG • Energy Conversion (Fall 2022, Spring and Fall 2023, Fall 2024), UG	
GTA, University of Oklahoma	2021-2022, Norman, USA
• Energy Conversion (Fall 2021, Spring 2022), UG • Electrical Circuit I (Spring 2022), UG	

2. Educational Leadership & Curriculum Development

- Designing and enhancing undergraduate, senior-level, and graduate courses:
- Development of the course Inverter-Based Renewable Energy Systems: System Integration and Analysis, a system-level course architecture combining inverter modeling, nonlinear dynamics analysis, grid-integration studies, and simulation-to-hardware validation.
 - Enhancement of the course Circuits Laboratory (full laboratory modernization and redesign), instructional redesign, implementing a structured progression from component-level circuit analysis to system-level validation, integrating simulation cross-verification, and measurement uncertainty analysis.
 - Enhancement of the course Electronics Laboratory, redesigned instructional methodology from procedural verification-based exercises to cognitively engaging, analysis-driven experimentation emphasizing predictive modeling and structured technical documentation.

- Enhancement of the course Probability, Statistics and Random Processes, structured course delivery around engineering-driven probabilistic modeling, linking theoretical probability concepts to signal processing, noise analysis, reliability modeling, and stochastic behavior.
- Enhancement of the course Energy Conversion, a comprehensive electromechanical energy conversion curriculum covering transformer modeling, DC and AC machine analysis, three-phase systems, and renewable energy conversion technologies; integrated laboratory experiments and exposure to real-world generation systems.
- Development of the course Standard Electrical and Electronic Engineering (SEEE), developed as a specialized course, integrating IEEE standards into undergraduate engineering curricula, covering interoperability, compliance, safety, and sustainability.

D. Teaching Innovation And Industry Integration

- Transitioned Circuits and Electronics Laboratories from procedural verification models to analysis-driven, design-oriented experimentation emphasizing predictive modeling, simulation-to-hardware validation, and structured technical documentation.
- Embedded IEEE and IEC standards literacy, compliance evaluation, and Failure Mode and Effects Analysis (FMEA) into undergraduate curriculum.
- Integrated MATLAB/Simulink, Multisim, and hardware prototyping into core courses to establish progressive skill development from component-level analysis to system-level implementation.
- Applied prior leadership experience in IEC/ISO 17025 validation laboratories to incorporate measurement uncertainty analysis, safety evaluation, and engineering risk assessment into laboratory grading frameworks

E. Supervision & Mentoring

- Supervised undergraduate and graduate research projects in inverter modeling, nonlinear system identification, and power electronics.
- Mentored 10~15 undergraduate students annually through structured internship and capstone pathways.
- Faculty advisor for engineering competition teams and senior design projects.

F. Community Engagement & Outreach

- Founder, ROOT (Regenerative Outreach for Oklahoma's Thrive), a community-based engineering engagement initiative connecting systems thinking, engineering principles, and civic problem-solving.
- Active contributor to IEEE community development initiatives supporting student mentorship and professional growth.

G. Research Profile

Engineering Education Research focus: AI-enhanced engineering pedagogy, reflective learning systems, and multi-scale educational modeling, with peer-reviewed publications in STEM learning and artificial intelligence in education, resulting 2 peer-reviewed journal papers.

Core areas:

- Multi-scale AI frameworks for informal and community-based STEM learning
- Real-time reflective feedback models for adaptive engineering instruction
- Microreflection-to-microinstruction instructional modulation frameworks

Selected Publications on Education Research

Accepted	"A Review of Artificial Intelligence Transforming Education through: Technologies, Applications, and Transformative Impact". Reza SaeedKandez & Khazar Gorji. International Journal of Complexity in Applied Science and Technology
2025	"A Multi-Scale AI Framework for Informal STEM Learning: Paramorphic Digital Twins for Underserved Communities." Khazar Gorji & Reza SaeedKandezy . (2025). Journal of Education and Development. 9. 16. 10.20849/jed.v9i4.1531.

Electrical Engineering Research focus: nonlinear dynamics and inverter-dominated renewable energy systems, resulting 9 peer-reviewed journal and conference papers.

Core areas:

- Convolution-based system identification
- Harmonic interaction modeling in inverter-based grids
- Multi-scale dynamic behavior of renewable energy systems

Selected Publications on Electrical Engineering Research

2024	"Nonlinear Impact of Topological Configuration of Coupled Inverter-Based Resources on Interaction Harmonics Levels of Power Flow." Masoud Safarishaal, Rasul Hemmati, Reza Saeed Kandezy , John Jiang, Chenxi Lin, and Di Wu. <i>Energies</i> 17, no. 11 (2024): 2512.
2024	"Mixed Algorithm of SINDy and HAVOK for Measure-Based Analysis of Power System with Inverter-based Resource", Reza Saeed Kandezy , John Ning Jiang (2024), <i>International Journal of Innovative Science and Research Technology (IJISRT)</i> IJISRT24MAR1279, 1677-1684.
2023	"Refined convolution-based measures for real-time harmonic distortions estimation in power system dominated by inverter-based resources", Kandezy, Reza Saeed , Masoud Safarishaal, Rasul Hemmati, and John Ning Jiang. <i>IET Power Electronics</i> .
2023	"Impact of Phase Displacement among Coupled Inverters on Harmonic Distortion in MicroGrids," R. Hemmati, R. S. Kandezy , M. Safarishaal, M. Zoghi, J. N. Jiang and D. Wu, 2023 IEEE Transportation Electrification Conference & Expo (ITEC), Detroit, MI, USA

1. Selected Engineering Realizations:

2024	Design and Implementation of a Smart Multi-agent Control System for LED Display in Chickasha Festival of Light	Chickasha FOL, Chickasha, OK, USA
2021	Failure modes and effects analysis of medical devices (Air sanitizer, medical waste disposal, Vein recognizer)	Parsigil Co., Roudsar, Iran
2019	Failure modes and effects analysis check of a CHP micro turbine according to the British standards (Safety, EMC, Rohs)	SMK Co., Karaj, Iran

H. Professional Leadership & Service

2026	Chair, IEEE Oklahoma City Section
2025- present	Founder and Lead Instructor, IEEE Standards Marathon, a continuing education series of the IEEE Oklahoma City Section
2025- 2026	Vice Chair, IEEE Oklahoma City Section
2026	Undergraduate Engagement Chair, 53 rd Frontiers of Power Conference
2026	Invited Panel Speaker, 7 th Global Summit on Artificial Intelligence (GSAI)
2026	Invited Speaker, 6 th Global Summit on Artificial Intelligence (GSAI)
2026- present	Eight-Twenty LLC academic partner
2025- present	IEEE Senior Member
2024	Invited Speaker, 4 th Global Summit on Artificial Intelligence (GSAI)
2024- present	Reviewer, IEEE Transactions on Power Electronics
2024- present	Reviewer, IET Power Electronics
2024- present	Reviewer, AIP Advances
2023 and 2024	Reviewer, PESGM (IEEE Power & Energy Society General Meeting)
2022- present	University of Oklahoma liaison at the OG&E University Summit Committee

I. Honors and Awards:

2026	RedBud Award for Best Partnership (received as lead faculty for the University of Oklahoma and Chickasha Festival of Light partnership)
2025	Recognized as a Senior Member by IEEE
2023	William H. Barkow award for outstanding academic achievements
2023	P.H. Robinson Fellowship
2022	William H. Barkow award for outstanding academic achievements
2022	Nettie Vincent Boggs award for outstanding academic achievements

J. Industrial Positions and Experiences

2017-2021	Vice-President, Rahgir Shahab Engineering Co., Karaj, Iran Design, implementation, and executive management of the reference validation laboratory for the electrical and electronic equipment.
2013- 2017	Chairman, The Equipment Hazard Impact Committee, National Section of IEC, Tehran, Iran Voted leader, by committee members of IEC (Iran section) to activate the national section of the international committee for " Electrical Equipment for hazardous atmospheres".
2013-2017	Manager, Academic Center for Education, Culture and Research (Amirkabir University of Technology branch), Tehran, Iran Managing a professional training center and developing engineering course and programs for industry specialists and executives.
	Manager, Academic Center for Education, Culture and Research (Sharif University of Technology branch), Tehran, Iran Research and development of electrical and information technology equipment considering the applications including the software protocols and communication hardware.
2011-2013	R&D Specialist, Energy and Power Industrial Laboratory, Karaj, Iran Participate in research, design, and development of state-of-the-art power and energy systems simulators and numerous testing equipment or electrical equipment Lead Investigator and Test Expert, Energy and Power Industrial Laboratory, Karaj, Iran Audit, evaluation, and validation of electrical power equipment for the MV transmission and substation power system.

K. Other Publications:

2025	“A Multi-Scale AI Framework for Informal STEM Learning: Paramorphic Digital Twins for Underserved Communities.” Khazar Gorji & Reza SaeedKandezy . (2025). Journal of Education and Development. 9. 16. 10.20849/jed.v9i4.1531.
2024	"On SINDy Approach to Measure-Based Detection of Nonlinear Energy Flows in Power Grids with High Penetration Inverter-Based Renewables", Saeed Kandezy, Reza , John Jiang, and Di Wu. Energies 17, no. 3 (2024): 711.
2022	“Impact of Inverter Dynamics during System Restoration Period on Protection Schemes in Grid Connected Solar PV Systems”, Almir Ekic; Manisha Maharjan; Di Wu; Matthew Boese; Reza Saeed Kandezy , 2022, IEEE Power & Energy Society General Meeting (PESGM). IEEE.
2022	“Study on Impact of Modulational Instability of Inverters on Electrical Energy Systems” Steele, B., Saeed Kandezy, R. , Huang, P., & Jiang, J. N., 2022, IEEE Kansas Power and Energy Conference (KPEC) (pp. 1-6). IEEE.
2012	“Optimal switching angles calculation in multilevel inverter using convolution operator and Harmony Search algorithm”, Saeed Kandezy, R. , and S. H. Fathi, 2012 international conference on power engineering and renewable energy (ICPERE), IEEE.