

Srdjan Skok

Prof. Srdjan Skok, PhD,

Srdan Skok was born on October 2, 1972 in Zagreb, a citizen of the Republic of Croatia; Croatian nationality. He enrolled at the Faculty of Electrical Engineering Zagreb, Croatia in 1991, where he graduated in electrical power system with an emphasis on scientific work on 21 December In 1995, with excellent success.

On February 25, 2000, he mastered at the Faculty of Electrical Engineering and Computing at the University of Zagreb, Croatia.

On April 1, 2004 he received his doctorate at the Faculty of Electrical Engineering and Computing at the University of Zagreb, Croatia.

Srdjan Skok has been with the University North from 2018. as an Assoc.

Professor at the Department of Electrical Engineering, Varazdin, Croatia (50%) and from 2020. he has been with the Algebra University College, Zagreb, Croatia (50%). From 2022 he is associate with Quanta Technology Energy Solution Advisory Services.



Srdjan Skok has published as author and co-author more than 150 scientific and professional papers (books, articles in journals and conferences and expert papers) relevant to the research area (WoSCC).

In 2002, he published the book "Uninterruptible power supplies" as a stand-alone author, and in 2007 the book "DC Distribution Systems in Power Plants", used as manuals of the "Electrical Installations" and "Electric Power Plants" cases.

Srdan Skok is an invited author of the chapters in the book, with an international review: Skok, Srdjan "Chapter 3: System Integrity Protection Scheme based on PMU Technology", The Institute of Engineering and Technology London WC2R 0BL, UK (IET book) "Wide Area Monitoring , Protection and Control Systems: The Enabler for Smarter Grids ", October 2016.

Srdan Skok was a fellow of the National Foundation for Science and Technology Development of the Republic of Croatia in the PostDoc program, and accordingly, during 2006 (3 months) he attended post-graduate training in the USA, Raleigh, North Carolina, at the KEMA Research Center T & D Consulting, investigating issues related to power system monitoring based on synchronized measurements.

In 2010, he was Quanta Technology associate in Raleigh, North Carolina, at the Quanta Technology headquarters working on projects issues related to the integrity protection schemens based on synchronized measurements.

From September 2006 to 2009 he was the head of a Croatian national scientific project "Monitoring, Protection and Control of a Wide Area Power System in a Deregulated and Liberated Electricity Market" funded by the National Foundation for Science and Technology Development of the Republic of Croatia and Croatian Electric Power Company.

From June 2010 to October 2013, he was the head of the scientific project "Intelligent Systems in the Transmission Power Network", funded by the National Foundation for Science and Technology Development of the Republic of Croatia and the Croatian Electric Power Industry.

He has very successful collaboration with subjects from industry on many expert studies.

Srdjan Skok

Srđan Skok was invited as a lecturer in more than 10 international and domestic scientific conferences, and was chairman of the international conference: International workshop "Smart Grid"; Zagreb, Croatia, 2009. and chairman of the international scientific conference: International workshop "Intelligent Solution for Power Transmission System"; Rijeka, Croatia, 2013.

Srđan Skok is a reviewer of dozens of scientific articles in prominent international scientific journals in the field of science.

He is a Senior member of the IEEE and member of international CIGRE association.

He is a member of the Scientific Council for Petroleum Gas Industry and Energy of the Croatian Academy of Sciences and Arts.

He is/was a member of the international CIGRE working groups: B5.14. "Wide Area Protection and Control Technologies", C2.17 "Wide Area Monitoring Systems - Support for Control Room Applications", C2.18 "Wide Area Monitoring Protection and Control Systems - Support for Control Room Applications", CIGRE: B5.62 "Life Cycle Testing of Synchrophasor Based Systems Used for Protection, Monitoring and Control" and “

Srđan Skok established the new “Laboratory for Power System Monitoring, Protection and Control” in March 2011 and he introduced the new Laboratory Practice in the framework of the course Electric Power Engineering System Management:

- Introduction with basic features of the Siemens PSS/E software package
- Calculation of power flow and safety analysis on the example of test power system
- Making and analysis of outage of certain elements of the test power system
- Power system modelling in the Siemens PSS/E software package

Since October 2011 until today Srđan Skok has been the mentor of the student project Riteh Emobil. Riteh Emobil is a student project at the University of Rijeka Faculty of Engineering, whose purpose is to make a completely autonomous electrical vehicle with the appertaining charging station. The rearranged vehicle was successfully presented at the Student Day Festival in Rijeka 24 and 25 May 2013.

Srđan Skok is a citizen of the Republic of Croatia and father of four sons.

He is a recreational soccer and basketball player and has been a participant of many amateur soccer and basketball tournaments.

SUMMARY

EDUCATION

- 2004 PhD
 - o Name of the institution: University of Zagreb, Faculty of Electrical Engineering and Computing
- 2000 MSc
 - o Name of the institution: University of Zagreb, Faculty of Electrical Engineering and Computing
- 1995 BSc
 - o Name of the institution: University of Zagreb, Faculty of Electrical Engineering and Computing

CURRENT POSITION(S)

- 2022. – today – Associate with Quanta Technology Energy Solution Advisory Services
- 2018. – today - Associate Professor
 - o Name of the institution: Algebra University College, Zagreb, Croatia
 - o Name of the institution: University North, Varazdin, Croatia

PREVIOUS POSITIONS

- 2013 – 2018. – Associate Professor
 - o Name of the institution: University of Rijeka Faculty of Engineering, Rijeka, Croatia
- 2008 – 2013 Assistant professor
 - o Name of the institution: University of Rijeka Faculty of Engineering
- 2004 – 2008 Research Assistant
 - o Name of the institution: University of Zagreb, Faculty of Electrical Engineering and Computing
- 1996 – 2004 Teaching Assistant
 - o Name of the institution: University of Zagreb, Faculty of Electrical Engineering and Computing

Areas of Expertise

- Synchrophasor technology
- Wide Area Monitoring, Protection and Control - WAMPAC
- System Integrity Protection Schemes - SIPS
- Power System Analysis, Protection and Control
- Smart Grids, Smart Energy Solutions & Renewable Energy Sources
- Power system stability and resilience
- Internet of Things
- Artificial Intelligence
- Electromobility
- Software: NEPLAN, PSS/E

Experience and Background

- | | |
|--|----------------|
| • 27 years of work experience with the electric power industry | 1996 – present |
| • associate with Quanta Technology Energy Solution Advisory Services | 2022 - present |
| • Algebra University College | 2020 – present |

- University North, Varazdin, Croatia 2018 – present
- Associate with Quanta Technology Energy Solution Advisory Services 2010 – 2011
- Faculty of Engineering, University of Rijeka, Croatia 2008 – 2017.
- Faculty of Engineering and Computing, University of Zagreb, Croatia 1995 – 2008

Teaching Activities

At the University North, Croatia, since 20018 – present. active in the following activities:

Graduate course

2008 – 2017 Protection and Automatization of Electrical Plants – course holder (lectures, introduction of new laboratory practice)

2010 – 2017. Power System Installtions – course holder (lectures, introduction of new laboratory practice)

At the University of Rijeka, Faculty of Engineering, since 2008 – 2017. active in the following activities:

Undergraduate course

2008 – 2017 Electrical Facilities – course holder (lectures, introduction of new laboratory practice)

Graduate course

2008 – 2017 Marine Electrical Engineering – course holder (lectures)

2008 – 2017 Protection and Automatization of Electrical Plants – course holder (lectures, introduction of new laboratory practice)

2010 – 2017. Power System Control – course holder (lectures, introduction of new laboratory practice)

Professional degree course

2008 – 2017 Electrical Power System Facilities – course holder (lectures)

Postgraduate doctoral course

Intelligent Electrical Power Systems – Smart Grids – course holder

Institutional Responsibilities

2008-2010. head of the Department of Electric Power Systems, Faculty of Engineering, University of Rijeka, Croatia

Major Scientific Collaboration

Academician Damir Novosel, Wide Area Protection and Control, Quanta Technology, Raleigh, USA

Prof. Mladen Kezunovic, Texas A&M University

Prof. Vladimir Terzija, Wide Area Monitoring, The Manchester University, Manchester, United Kingdom

Prof. Alfredo Vaccaro, Synchronized Measurement and Control, University of Sannio, Benevento, Italy

... and many more

Accomplishments and Industry Recognition

- IEEE senior member, CIGRE Member,
- Member of CIGRE Working Groups:
 - o B5.14. „Wide Area Protection and Control Technologies“,
 - o C2.17 „Wide Area Monitoring Systems – Support for Control Room Applications“,
 - o C2.18 "Wide Area Monitoring Protection and Control Systems - Support for Control Room Applications",
 - o B5.62 “Life Cycle Testing of Synchrophasor Based Systems used for Protection, Monitoring and Control”.

- Member of the Consortium of "Global Network for Synchrophasor Solution", Texas A&M University, Texas, SAD
- Leader of more than 70 projects with industry
- Published over 150 scientific papers.
- Invited as a lecturer in more than 20 international and domestic scientific conferences
- Leader of scientific 2 projects for WAM system implementation in Croatia financed by Croatian Ministry of Science and Croatian TSO
- Mentor to 5 postgraduate doctoral study students and more than 200 undergraduate students

SCIENTIFIC PROJECTS – PROJECT LEADER:

- 1) "Intelligent Systems For Power Transmission Grid", financed by the National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia, and Croatian Power Utility (HEP – OPS d.o.o.); 2010-2013
- 2) „Wide Area Monitoring, Protection and Control of Power System in Deregulated and Liberalized Energy Market”; financed by the National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia, and HEP – OPS d.o.o.; 2006-2009.

MOST RECENT PROFESSIONAL PROJECTS – PROJECT LEADER:

- 1) "TenneT Synchrophasor Use Case Overview", associate, for Quanta Technology, financed by TenneT, Germany, May 2023.
- 2) Proposal for control and reconfiguration of a part of the distribution system with support from distributed sources based on synchronized measurements", financed by HEP-Distribution System Operator d.o.o .; 2022.
- 3) "Methodology for Optimal Use of Various Voltage Control Devices in Smart Transmission Grid", financed by the Croatian Transmission System Operator d.o.o. 2021.
- 4) Optimal PMU placement", financed by the Croatian Transmission System Operator d.o.o. 2021.
- 5) Analysis of the possibility of using distributed sources in the provision of ancillary services ", financed by HEP-Distribution System Operator d.o.o .; 2020
- 6) - "Voltage regulation in the distribution network", financed by HEP-Distribution System Operator d.o.o .; 2020
- 7) - "Interoperability model of the Transmission System Operator and the Distribution System Operator", financed by the Croatian Transmission System Operator d.o.o. 2019.
- 8) - "Analysis of coordination of protection of generation units and transmission system operators and proposal for generator signal protection", financed by the Croatian Transmission System Operator d.o.o .; 2019.
- 9) - "Methodology and setup of the system for detecting conductor interruptions in the SCADA / EMS system", financed by the Croatian Transmission System Operator d.o.o .; 2019.
- 10) - "Algorithm for monitoring the angular stability of the transmission system based on synchronized measurements", funded by the Croatian Operating Transmission System d.o.o .; 2019.
- 11) - "Influence of charging stations for electric vehicles on the electricity distribution network", financed by HEP-Distribution System Operator d.o.o .; 2019.
- 12) - "Analysis of primary reserve frequency regulation in the transmission system of the Republic of Croatia", financed by the Croatian Transmission System Operator d.o.o .; 2019.

- 13) "System for Island Operation Protection of Renewable Energy Sources Based on Synchronized Measurement", financed by the Croatian Distribution System Operator Ltd; 2017.
- 14) „Remedial Algorithm of Part of Transmission System“, financed by the Croatian Transmission System Operator Ltd; 2016.
- 15) „Study of Renewable Energy Source Connection on Transmission Power System“, financed by the Croatian Transmission System Operator Ltd; 2016.
- 16) "Preliminary Analysis of Connection of Hydro Power Plant on Transmission Grid - After Revitalization"; financed by Croatian Generation Company; 2016.
- 17) "Study of Revitalization and Upgrade of Wide Area Monitoring Protection and Control of Croatian Transmission System Operator", financed by the Croatian Transmission System Operator Ltd; 2016.
- 18) "Out-of-step Algorithm based on Synchronized Measurements", financed by the Croatian Transmission System Operator Ltd; 2016.
- 19) "Mathematical Model of Hydro Power Plant", financed by Končar – Energetika i transport d.d.-KET.; 2016.
- 20) "Software Architecture of the Power Grid Monitoring System in Real Time", financed by Končar – Energetika i transport d.d.; 2015
- 21) "Making a Mathematical Model of Transmission Power System for the Analysis of Dynamic Occurrences", financed by the Croatian Transmission System Operator Ltd; 2014
- 22) "A Conceptual Design of Advanced Control and Protection of a Part of Transmission Power System of the Transmission Area Rijeka – Subsystem Istria", financed by the Croatian Transmission System Operator Ltd; 2014
- 23) "Construction Design of Automatic Control of a Part of the City of Zagreb Transmission Grid"; financed by HEP – Distribution System Operator Ltd; 2012
- 24) "A Conceptual Design of Advanced Control of a Part of Transmission Area Rijeka"; financed by HEP – Transmission System Operator Ltd; 2011

BOOKS:

- 1) **Skok, Srdjan** (2016) "Chapter 3: System Integrity Protection Scheme based on PMU technology", The Institution of Engineering and Technology London WC2R 0BL, UK, (IET book) "Wide Area Monitoring, Protection and Control Systems: The Enabler for Smarter Grids"
- 2) **Skok, Srdjan** (2007), "DC Circuits in Power Systems", ISBN 953-6970-00-7, Kigen d.o.o., Zagreb, Croatia, October 2007.
- 3) **Skok, Srdjan** (2002), "Uninterruptible Power Supplies", ISBN 953-6970-00-7, Kigen d.o.o., Zagreb, Croatia, October 2002.

RECEINT RESEARCH PAPERS PUBLISHED IN JOURNALS

During the last 5 years Srđan Skok has published articles in the journals of the first or second quartile score in the referenced scientific area, and a total of 155 scientific and expert works (books, journal and conference articles, and expert articles) relevant for the research area.

According to Google Scholar:

Citations	1490
h-index	13
i10-index	19

Most relevant scientific papers:

- 1) Tosić, Josip; Skok, Srdjan; Teklić, Ljupko; Balković, Mislav, **Resilience Neural-Network-Based Methodology Applied on Optimized Transmission Systems Restoration** // *Energies*, **15** (2022), 4694, 16
- 2) Skok, Srđan; Balković, Mislav; Mršić, Leo; Ivanković, Igor, **Methodology for Optimal Use of Various Voltage Control Devices in Smart Transmission Grid** // 2021 International Conference on Electrical, Computer and Energy Technologies (ICECET) Cape Town, South Africa, 2021
- 3) Ivanković, I; Rubesa, R; Rekić, M; Skok, S, **Rare Transmission Anomaly and Fault Detection based on Synchrophasors in Control Rooms** // Conference: 2020 IEEE/PES Transmission and Distribution Conference and Exposition (T&D) Chicago, SAD, 2020.
- 4) Skok, Srđan; Srpak, Dunja; Havaš, Ladislav; Srpak, Josip, **Monitoring and Protection of Dynamic Angular Stability Based on Synchronized Measurements**. // *Elektrotehnički vestnik*, **87** (2020), 3; 95-101
- 5) Skok, Srđan; Srpak, Dunja; Havaš, Ladislav; Kondić, Veljko, **Synchronized Measurements Processing Methodology as a Tool for Monitoring Power System Oscillations** // *Technical Gazzeta* : **27** (2020), 2; 450-457
- 6) Skok, Srđan; Mutapčić, Ahmed; Rubesa, Renata; Bazina, Mario, **Transmission Power System Modeling by Using Aggregated Distributed Generation Model Based on a TSO—DSO Data Exchange Scheme** // *Energies*, **13** (2020), 15; 3949, 18
- 7) Skok, Srđan; Ivanković, **System Integrity Protection Schemes for Future Power Transmission System Using Synchrophasors**, SGSM 2019, College Station, Texas, USA, May 2019
- 8) Skok, Srđan; Ivanković, Igor; Zbunjak, Zoran. **Two Layer Hydropower Plant Dynamic Mathematical Modelling Using Synchronized Measurements**. *International Journal of Electric Power and Energy Systems*. **103** (2018), 302-309
- 9) Kirinčić, Vedran; Skok, Srđan; Franković, Dubravko. **A Synchrophasor Assisted Hybrid State Estimator**. // *Journal of electrical engineering*. **67** (2016) , 2; 103-110
- 10) Vrkić, Nikša; Skok, Srđan; Kirinčić, Vedran. **Real Time Power Swing Monitoring In a Hydro Power Plant Supported By Synchronized Measurements**. // *Tehnički vjesnik*. **23** (2016), 5; 1517-1522
- 11) Kirinčić, Vedran; Skok, Srđan; Franković, Dubravko. **A Noninvasive Inclusion of Synchrophasors in the Power System State Estimation**. // *Tehnički vjesnik : znanstveno-stručni časopis tehničkih fakulteta Sveučilišta u Osijeku*. **23** (2015) , 5; 1457-1462
- 12) Kirinčić, Vedran; Skok, Srđan; Terzija, Vladimir. **A Two-Step Hybrid Power System State Estimator**. // *International Transactions on Electrical Energy Systems*. **25** (2015) , 7; 1158-1172
- 13) Bulat, Hrvoje; Skok, Srđan; Kirinčić, Vedran. **Synchronized phasor measurements in a dual layer hybrid state estimator**. // *Tehnički vjesnik*. **20** (2013) , 6; 1043-1050
- 14) Radulović, Duško; Skok, Srđan; Kirinčić, Vedran. **Cogeneration – Investment dilemma**. // *Energy (Oxford)*. **48** (2012) , 1; 177-187
- 15) Kirinčić, Vedran. **Energy efficiency public lighting management in the cities**. // *Energy (Oxford)*. **36** (2011) , 4; 1908-1915 Skok, Srđan; Matica, Renata; Šturlić, Ivan. **Enhanced open architecture of phasor data concentrator**. // *European transactions on electrical power*. **21** (2011) , 4; 1531-1540
- 16) Sladić, Saša; Skok, Srđan; Nedeljković, David. **Efficiency Considerations and Application Limits of Single-Phase Active Power Filter with Converters for Photoenergy Applications**. // *International journal of photoenergy*. (2011) ; 643912-1-643912-8

- 17) Sumina, Damir; Bulić, Neven; Skok, Srđan. **Stabilization of the electromechanical oscillations of synchronous generator**. // *Strojarstvo*. **53** (2011) , 3; 209-219
- 18) Terzija, Vladimir; Valverde, G.; Cai, D.; Regulski, P.; Madani, V.; Fitch, J.; Skok, Srđan; Begović, Miroslav M.; Phadke, A. **Wide Area Monitoring, Protection and Control of Future Electric Power Networks**. // *Proceedings of the IEEE*. **99** (2011), 1; 80-93

REVIEW OF PAPERS IN JOURNALS AND ON CONFERENCES

He has so far reviewed dozens of scientific journals, 12 of which were papers for renowned international scientific journals in the referential scientific area.

- IEEE Transactions on Industrial Informatics, ISSN 1551-3203 Impact factor: 8,785
- International Transactions on Electrical Energy Systems, ISSN 2050-7038, Impact factor: 0,49
- International Journal of Communication Systems, ISSN 1099-1131, Impact factor: 1,106
- Journal of Electrical Engineering & Technology, ISSN 1975-0102, Impact factor: 0,517
- International Journal of Electrical Power and Energy Systems, ISSN 0142-0615, Impact factor: 2,574

ORGANISATION OF SCIENTIFIC MEETINGS

- President of the Organizing Committee of the international meeting: International workshop "Intelligent Solution for Power Transmission System"; Rijeka, Croatia, 26 Sept 2013; organized by the Faculty of Engineering, Croatian Science Foundation.
- President of the Organising Committee of the international meeting: International workshop „WAMPAC-Guardian of Power System“; Zagreb, Croatia, 23-24 April 2009; organizers: CIGRE, ABB, SIEMENS, SEL.