

Curriculum vitae

Name: Oprea

First name: Simona-Vasilica

PhD. Year: 2009, 2017

Current position: Associate professor

Institution: Bucharest University of Economic Studies

Mobile phone: +40 752 29 44 22

Email address: simona.oprea@csie.ase.ro



Simona-Vasilica Oprea (Female, b. 1978, Nationality: Romanian) has an interdisciplinary background in *Power System Engineering* (RES integration, grid planning studies) and *ICT* (database, big data, blockchain, machine learning algorithms, deep learning, web scraping). She received the **MSc degree** from the Infrastructure Management Program, Yokohama National University, Japan in 2007; **1st PhD** in Electrical Engineering from the Bucharest Polytechnic University; in 2009, **2nd PhD** in Economic Informatics from the Bucharest University of Economic Studies (ASE) in 2017. Since 2010, she is involved in 9 national and international research projects as member or PI. She is the author of 10 books and international chapters, and scientific articles, over **90 indexed in ISI Web of Science** (over 60 journal papers and over 30 proceeding conferences, 1 book chapter), h-index 15. She worked for the Romanian Transmission System Operator Transelectrica: 2002-2014; the National Energy Regulatory ANRE (2014) and the Bucharest University of Economic Studies (ASE): 2014-present.

a) Degrees and diplomas

December 2021 – Habilitation in Economic Informatics at the Bucharest University of Economic Studies. Habilitation thesis title: „*Big data analytics and blockchain solutions*”

2014-2017 PhD in Economic Informatics at the Bucharest University of Economic Studies. PhD thesis title: „*Informatics solutions for decision assistance regarding electricity consumption optimization in smart grids*”

2002-2009 PhD in Electrical Engineering at the Bucharest Polytechnic University. PhD thesis title: “*Aspects regarding the open access to the electricity grids. Renewable energy sources integration*”

2005-2007 Master in Infrastructure Management at the Yokohama National University, Japan. The International Graduate School of Social Sciences. Thesis title: *Allocation methods of cross-border grid capacity*

2001-2002 Master in Power Systems at the Bucharest Polytechnic University, Energy Faculty

1996-2001 Bachelor at the Bucharest Polytechnic University, Energy Faculty

b) Research projects (short list)

2010-present Researcher – Manager in 4 research projects (PNIII-PCE SMART-TWINS, PNIII-PED BIGDATA4GRID, PNIII-BRIDGE SMART-OPTIM , H2020-ERANET SMART-MLA) and *Member* in 4 research projects (PNII-TE , PNII-PCCA SIPAMER, PNIII-PTE OPTIMPV, COP SMARTRADE)

June 2022-2025 Principal Investigator – Project title: *Developing a Model-based Digital Twin Reference Architecture for Active Energy Consumers and Smart Communities* (SMART-TWINS), Funding agency:

UEFISCDI, PCE 2021, Total budget 1.200.000 RON, 36 months, Contract no. PCE 35/2022, code PN-III-P4-PCE-2021-0334

2020-2022 Principal Investigator – Project title: *Big data solutions in demand side management enhancing market strategies and settlement for distribution grid operators* (BIGDATA4GRID), Funding agency: UEFISCDI, PN-III-P2-2.1-PED-2019-1198, PED 2019, Total budget 600.000 RON, Total amount for ASE: 400.000 RON, coordinator ASE, partner SC ICPE SA, 24 months, Contract no. 462PED/28.10.2020, web page: <https://simonaoprea.ase.ro/research/bigdata4grid/>

2018-2021 Principal Investigator for ASE partner – Project title: *Multi-layer aggregator solutions to facilitate optimum demand response and grid flexibility*, Funding agency: ERA-NET Co-fund under H2020, UEFISCDI, Total amount for ASE: 169.000 Euro, PNIII European and International Cooperation H2020, ERANET H2020, Partners: ASE (Romania), Stimasoft (Romania), KTH (Sweden), DTU (Denmark), EPRA (Turkey)-coordinator, AKEDAS (Turkey), USN (Norway), Contract 71/2018, Acronym: SMART-MLA, Project web page: <https://smart-mla.stimasoft.com/>; ERA-NET web page: <https://www.eranet-smartenergysystems.eu/Projects>

2016-2018 Principal Investigator – Project title: *Informatics solutions for electricity consumption analysis and optimization in smart grids*, Funding agency: UEFISCDI, Total amount for ASE: 100.000 Euro, PN-III-P2-2.1-BG-2016-0286, BRIDGE Grant, Partners: ASE (Romania)-coordinator, MET (Romania), Romanian-American University (Romania), Contract 77BG/2016, Acronym: SMART-OPTIM; Web page: <https://sites.google.com/a/csie.ase.ro/smart-optim/>

2016-2020 Project Member – *Intelligent system for trading on wholesale electricity market* Competitiveness Operational Programme (COP) 2014-2020, Contract 62/2016, Co-financed by European Regional Development Fund (ERDF), Funding agency: ANCSI, Total amount: 1.200.000 Euro, Acronym SMARTRADE; Project website: <http://smartrade.ase.ro/>

2016-2018 Project Member - *Informatics solutions for optimizing the operation of photovoltaic power plants*, PN-III-P2-2.1-PTE-2016-0032, 4PTE/06/10/2016, Funding agency: UEFISCDI, Total amount for ASE: 100.000 Euro, Partners: ICPE (Romania)-coordinator, ASE (Romania), EnergyPRO (Romania), Acronym: OPTIM-PV; Web page: <http://www.icpe.ro/projects/optimpv/>

2014-2017 Project Member – *Sistem inteligent pentru predicția, analiza și monitorizarea indicatorilor de performanță a proceselor tehnologice și de afaceri în domeniul energiilor regenerabile*, PN II PT-PCCA-2013-4-0996, Contract 49/2014, Funding agency: UEFISCDI, Total amount for ASE: 348.000 Euro, Partners: ASE (Romania)-coordinator, Romanian-American University (Romania), Stimasoft SRL (Romania), Acronym SIPAMER

2010-2013 Project Member – *Soluii informatice pentru asistarea procesului decizional in mediile incerte si cu evolutii putin predictibile in vederea integrarii in retele de tip grid*, PNII-TE, Code: 332, Contract 44/2010, Funding agency: UEFISCDI, Total amount: 140.000 Euro

c) Recent Jobs in Academia:

February 2022-present Associate Professor at the Bucharest University of Economic Studies, Faculty of Cybernetics, Statistics and Economic Informatics

2019 – 2022 Lecturer at the Bucharest University of Economic Studies, Faculty of Cybernetics, Statistics and Economic Informatics

2015-2019 Assistant Professor at the Bucharest University of Economic Studies, Faculty of Cybernetics, Statistics and Economic Informatics

d) Scientometric indicators from WoS: **Hirsch index=15**

e) ORCID: <https://orcid.org/0000-0002-9005-5181>

f) Google Scholar: <https://scholar.google.com/citations?user=hIKefqAAAAAJ&hl=ro>

g) Website <https://simonaoprea.ase.ro/>

List of publications

Full list of SCI publications can be found at the website: <https://simonaoprea.ase.ro/articole-isi/>

Journal papers indexed by WoS, extracted from WoS (2019-2024)

N	Authors	Title	Journal	Year
1	Oprea, Simona-Vasilica; Bara, Adela	On-grid and off-grid photovoltaic systems forecasting using a hybrid meta-learning method, http://dx.doi.org/10.1007/s10115-023-02037-8 , WOS:001138337300001	KNOWLEDGE AND INFORMATION SYSTEMS, ISSN/eISSN: 0219-1377/0219-3116	2024
2	Bara, Adela; Oprea, Simona-Vasilica	Enabling coordination in energy communities: A Digital Twin model, http://dx.doi.org/10.1016/j.enpol.2023.113910 , WOS:001128156900001	ENERGY POLICY, ISSN/eISSN: 0301-4215/1873-6777	2024
3	Baroiu, Alexandru Costin; Diaconita, Vlad; Oprea, Simona Vasilica	Bitcoin volatility in bull vs. bear market- insights from analyzing on-chain metrics and Twitter posts, http://dx.doi.org/10.7717/peerj-cs.1750 , WOS:001132077200002	PEERJ COMPUTER SCIENCE, ISSN/eISSN: /2376-5992	2023
4	Bara, Adela; Oprea, Simona-Vasilica; Ciurea, Cristian-Eugen	IMPROVING THE STRATEGIES OF THE MARKET PLAYERS USING AN AI-POWERED PRICE FORECAST FOR ELECTRICITY MARKET, http://dx.doi.org/10.3846/tede.2023.20251 , WOS:001103738000001	TECHNOLOGICAL AND ECONOMIC DEVELOPMENT OF ECONOMY, ISSN/eISSN: 2029-4913/2029-4921	2023
5	Bara, Adela; Oprea, Simona Vasilica	A holistic view on business model-oriented energy communities, http://dx.doi.org/10.1108/K-07-2023-1235 , WOS:001092258700001	KYBERNETES, ISSN/eISSN: 0368-492X/1758-7883	2023
6	Cristescu, Marian Pompiliu; Mara, Dumitru Alexandru; Culda, Lia Cornelia; Nerisanu, Raluca Andreea; Bara, Adela; Oprea, Simona-Vasilica	The Impact of Data Science Solutions on the Company Turnover, http://dx.doi.org/10.3390/info14100573 , WOS:001095503900001	INFORMATION, ISSN/eISSN: /2078-2489	2023
7	Bara, Adela; Oprea, Simona-Vasilica; Bucur, Cristian; Tudorica, Bogdan-George	Unraveling the Impact of Lockdowns on E-commerce: An Empirical Analysis of Google Analytics Data during 2019-2022, http://dx.doi.org/10.3390/jtaer18030075 , WOS:001074137500001	JOURNAL OF THEORETICAL AND APPLIED ELECTRONIC COMMERCE RESEARCH, ISSN/eISSN: 0718-1876/	2023
8	Oprea, Simona-Vasilica; Bara, Adela; Dobria (Ene), Gabriela; Barbu, Dragos-Catalin	A Horizontal Tuning Framework for Machine Learning Algorithms Using a Microservice-based Architecture, http://dx.doi.org/10.24846/v32i3y202303 , WOS:001089145600003	STUDIES IN INFORMATICS AND CONTROL, ISSN/eISSN: 1220-1766/	2023
9	Bara, Adela; Oprea, Simona-Vasilica	Intelligent system to optimally trade at the interference of multiple crises, http://dx.doi.org/10.1007/s10489-023-04823-x , WOS:001045138000005	APPLIED INTELLIGENCE, ISSN/eISSN: 0924-669X/1573-7497	2023

10	Bara, Adela; Oprea, Simona-Vasilica; Baroiu, Alexandru-Costin	Forecasting the Spot Market Electricity Price with a Long Short-Term Memory Model Architecture in a Disruptive Economic and Geopolitical Context, http://dx.doi.org/10.1007/s44196-023-00309-3 , WOS:001044924500001	INTERNATIONAL JOURNAL OF COMPUTATIONAL INTELLIGENCE SYSTEMS, ISSN/eISSN: 1875-6891/1875-6883	2023
11	Bara, Adela; Oprea, Simona-Vasilica; Tudorica, Bogdan George	From the East-European Regional Day-Ahead Markets to a Global Electricity Market, http://dx.doi.org/10.1007/s10614-023-10416-0 , WOS:001040215200002	COMPUTATIONAL ECONOMICS, ISSN/eISSN: 0927-7099/1572-9974	2023
12	Bara, Adela; Oprea, Simona-Vasilica	What makes electricity consumers change their behavior? Influence of attitude and perceived impact of DR programs on awareness, http://dx.doi.org/10.1108/K-01-2023-0032 , WOS:000994120700001	KYBERNETES, ISSN/eISSN: 0368-492X/1758-7883	2023
13	Oprea, Simona-Vasilica; Bara, Adela	An Edge-Fog-Cloud computing architecture for IoT and smart metering data, http://dx.doi.org/10.1007/s12083-022-01436-y , WOS:000913563000002	PEER-TO-PEER NETWORKING AND APPLICATIONS, ISSN/eISSN: 1936-6442/1936-6450	2023
14	Bara, Adela; Oprea, Simona-Vasilica; Georgescu, Irina Alexandra	UNDERSTANDING ELECTRICITY PRICE EVOLUTION-DAY-AHEAD MARKET COMPETITIVENESS IN ROMANIA, http://dx.doi.org/10.3846/jbem.2023.19050 , WOS:000991227200001	JOURNAL OF BUSINESS ECONOMICS AND MANAGEMENT, ISSN/eISSN: 1611-1699/2029-4433	2023
15	Oprea, Simona-Vasilica; Bara, Adela; Andreescu, Anca-Ioana; Cristescu, Marian Pompiliu	Conceptual Architecture of a Blockchain Solution for E-Voting in Elections at the University Level, http://dx.doi.org/10.1109/ACCESS.2023.3247964 , WOS:000942211300001	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2023
16	Vaduva, Alin-Gabriel; Munteanu, Mihai; Oprea, Simona-Vasilica; Bara, Adela; Niculae, Andreea-Mihaela	Understanding Climate Change and Air Quality Over the Last Decade: Evidence From News and Weather Data Processing, http://dx.doi.org/10.1109/ACCESS.2023.3345466 , WOS:001131870500001	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2023
17	Oprea, Simona-Vasilica; Bara, Adela	A signaling game-optimization algorithm for residential energy communities implemented at the edge-computing side (vol 169, 108272, 2022), http://dx.doi.org/10.1016/j.cie.2022.108812 , WOS:000899939200005	COMPUTERS & INDUSTRIAL ENGINEERING, ISSN/eISSN: 0360-8352/1879-0550	2022
18	Cristescu, Marian Pompiliu; Nerisanu, Raluca Andreea; Mara, Dumitru Alexandru; Oprea, Simona-Vasilica	Using Market News Sentiment Analysis for Stock Market Prediction, http://dx.doi.org/10.3390/math10224255 , WOS:000887505400001	MATHEMATICS, ISSN/eISSN: /2227-7390	2022
19	Oprea, Simona-Vasilica; Bara, Adela	A measurement model for electricity Consumers' awareness with covariance structure Analyses. A solid pillar for boosting demand response programs, http://dx.doi.org/10.1016/j.seta.2022.102738 , WOS:000890379800007	SUSTAINABLE ENERGY TECHNOLOGIES AND ASSESSMENTS, ISSN/eISSN: 2213-1388/2213-1396	2022
20	Oprea, Simona-Vasilica; Bara, Adela	Mind the gap between PV generation and residential load curves: Maximizing the roof-top	EXPERT SYSTEMS WITH APPLICATIONS,	2020

		PV usage for prosumers with an IoT-based adaptive optimization and control module, http://dx.doi.org/10.1016/j.eswa.2022.118828 , WOS:000867544000005	ISSN/eISSN: 0957-4174/1873-6793	2 3
2 1	Oprea, Simona-Vasilica; Bara, Adela; Ciurea, Cristian-Eugen	A novel cost-revenue allocation computation for the competitiveness of balancing responsible parties, including RES. Insights from the electricity market, http://dx.doi.org/10.1016/j.renene.2022.09.007 , WOS:000888849300003	RENEWABLE ENERGY, ISSN/eISSN: 0960-1481/1879-0682	2 0 2 2
2 2	Oprea, Simona-Vasilica; Bara, Adela	A signaling game-optimization algorithm for residential energy communities implemented at the edge-computing side, http://dx.doi.org/10.1016/j.cie.2022.108272 , WOS:000809236200002	COMPUTERS & INDUSTRIAL ENGINEERING, ISSN/eISSN: 0360-8352/1879-0550	2 0 2 2
2 3	Oprea, Simona-Vasilica; Bara, Adela; Diaconita, Vlad	A motivational local trading framework with 2-round auctioning and settlement rules embedded in smart contracts for a small citizen energy community, http://dx.doi.org/10.1016/j.renene.2022.04.149 , WOS:000807116100001	RENEWABLE ENERGY, ISSN/eISSN: 0960-1481/1879-0682	2 0 2 2
2 4	Oprea, Simona-Vasilica; Bara, Adela; Ciurea, Cristian-Eugen; Stoica, Laura Florentina	Smart Cities and Awareness of Sustainable Communities Related to Demand Response Programs: Data Processing with First-Order and Hierarchical Confirmatory Factor Analyses, http://dx.doi.org/10.3390/electronics11071157 , WOS:000782012900001	ELECTRONICS, ISSN/eISSN: /2079-9292	2 0 2 2
2 5	Oprea, Simona-Vasilica; Bara, Adela	Feature engineering solution with structured query language analytic functions in detecting electricity frauds using machine learning, http://dx.doi.org/10.1038/s41598-022-07337-7 , WOS:000762444200018	SCIENTIFIC REPORTS, ISSN/eISSN: 2045-2322/	2 0 2 2
2 6	Barbu, Dragos-Catalin; Dobrita, Gabriela; Oprea, Simona-Vasilica; Bara, Adela; Diaconita, Vlad	Challenges and benefits of Blockchain-based Electronic Voting System, http://dx.doi.org/10.33436/v32i4y202210 , WOS:000924067500010	ROMANIAN JOURNAL OF INFORMATION TECHNOLOGY AND AUTOMATIC CONTROL-REVISTA ROMANA DE INFORMATICA SI AUTOMATICA, ISSN/eISSN: 1220-1758/1841-4303	2 0 2 2
2 7	Oprea, Simona-Vasilica; Bara, Adela; Puican, Florina Camelia; Radu, Ioan Cosmin	Anomaly Detection with Machine Learning Algorithms and Big Data in Electricity Consumption, http://dx.doi.org/10.3390/su131910963 , WOS:000709154200001	SUSTAINABILITY, ISSN/eISSN: /2071-1050	2 0 2 1
2 8	Oprea, Simona-Vasilica; Bara, Adela	Machine learning classification algorithms and anomaly detection in conventional meters and Tunisian electricity consumption large datasets, http://dx.doi.org/10.1016/j.compeleceng.2021.107329 , WOS:000694013100024	COMPUTERS & ELECTRICAL ENGINEERING, ISSN/eISSN: 0045-7906/1879-0755	2 0 2 1
2 9	Oprea, Simona-Vasilica; Bara, Adela	Edge and fog computing using IoT for direct load optimization and control with flexibility services for citizen energy communities,	KNOWLEDGE-BASED SYSTEMS,	2 0

		http://dx.doi.org/10.1016/j.knosys.2021.107293 , WOS:000685993500015	ISSN/eISSN: 0950-7051/1872-7409	2 1
3 0	Oprea, Simona-Vasilica; Bara, Adela; Ifrim, George Adrian	Optimizing the Electricity Consumption with a High Degree of Flexibility Using a Dynamic Tariff and Stackelberg Game, http://dx.doi.org/10.1007/s10957-021-01876-1 , WOS:000659800800001	JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS, ISSN/eISSN: 0022-3239/1573-2878	2 0 2 1
3 1	Oprea, Simona-Vasilica; Bara, Adela	Devising a trading mechanism with a joint price adjustment for local electricity markets using blockchain. Insights for policy makers, http://dx.doi.org/10.1016/j.enpol.2021.112237 , WOS:000636054400028	ENERGY POLICY, ISSN/eISSN: 0301-4215/1873-6777	2 0 2 1
3 2	Oprea, Simona-Vasilica; Bara, Adela; Marales, Razvan Cristian; Florescu, Margareta- Stela	Data Model for Residential and Commercial Buildings. Load Flexibility Assessment in Smart Cities, http://dx.doi.org/10.3390/su13041736 , WOS:000624830400001	SUSTAINABILITY, ISSN/eISSN: /2071-1050	2 0 2 1
3 3	Bucur, Cristian; Tudorica, Bogdan George; Oprea, Simona- Vasilica; Nancu, Dumitru; Dusmanescu, Dorel Mihail	Insights Into Energy Indicators Analytics Towards European Green Energy Transition Using Statistics and Self-Organizing Maps, http://dx.doi.org/10.1109/ACCESS.2021.3075175 , WOS:000645858100001	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2 0 2 1
3 4	Oprea, Simona Vasilica; Bara, Adela; Diaconita, Vlad; Ceaparu, Catalin; Ducman, Anca Alexandra	Big Data Processing for Commercial Buildings and Assessing Flexibility in the Context of Citizen Energy Communities, http://dx.doi.org/10.1109/ACCESS.2021.3137352 , WOS:000736732500001	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2 0 2 1
3 5	Oprea, Simona-Vasilica; Bara, Adela; Tudorica, Bogdan George; Calinoiu, Maria Irene; Botezatu, Mihai Alexandru	Insights into demand-side management with big data analytics in electricity consumers' behaviour, http://dx.doi.org/10.1016/j.compeleceng.2020.106902 , WOS:000640906400002	COMPUTERS & ELECTRICAL ENGINEERING, ISSN/eISSN: 0045-7906/1879-0755	2 0 2 1
3 6	Oprea, Simona-Vasilica; Bara, Adela	Ultra-short-term forecasting for photovoltaic power plants and real-time key performance indicators analysis with big data solutions. Two case studies - PV Agigea and PV Giurgiu located in Romania, http://dx.doi.org/10.1016/j.compind.2020.103230 , WOS:000538762600005	COMPUTERS IN INDUSTRY, ISSN/eISSN: 0166-3615/1872-6194	2 0 2 0
3 7	Oprea, Simona-Vasilica; Bara, Adela; Preda, Stefan; Tor, Osman Bulent	A Smart Adaptive Switching Module Architecture Using Fuzzy Logic for an Efficient Integration of Renewable Energy Sources. A Case Study of a RES System Located in Hulubesti, Romania, http://dx.doi.org/10.3390/su12156084 , WOS:000559515100001	SUSTAINABILITY, ISSN/eISSN: /2071-1050	2 0 2 0
3 8	Oprea, Simona-Vasilica; Bara, Adela; Tudorica, Bogdan George; Dobrita, Gabriela (Ene)	Sustainable Development with Smart Meter Data Analytics Using NoSQL and Self-Organizing Maps, http://dx.doi.org/10.3390/su12083442 , WOS:000535598700375	SUSTAINABILITY, ISSN/eISSN: /2071-1050	2 0 2 0
3 9	Oprea, Simona-Vasilica; Bara, Adela	Setting the Time-of-Use Tariff Rates With NoSQL and Machine Learning to a Sustainable	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2 0

		Environment, http://dx.doi.org/10.1109/ACCESS.2020.2969728 , WOS:000524658400002		2 0
4 0	Oprea, Simona-Vasilica; Bara, Adela; Preotescu, Dan; Bologna, Ramona Ana; Coroianu, Lucian	A Trading Simulator Model for the Wholesale Electricity Market, http://dx.doi.org/10.1109/ACCESS.2020.3029291 , WOS:000579347600001	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2 0 2 0
4 1	Oprea, Simona-Vasilica; Bara, Adela; Andreescu, Anca Ioana	Two Novel Blockchain-Based Market Settlement Mechanisms Embedded Into Smart Contracts for Securely Trading Renewable Energy, http://dx.doi.org/10.1109/ACCESS.2020.3040764 , WOS:000597982200001	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2 0 2 0
4 2	Teimourzadeh, Saeed; Tor, Osman Bulent; Cebeci, Mahmut Erkut; Bara, Adela; Oprea, Simona Vasilica; Kisakurek, Sabri Murat	Enlightening Customers on Merits of Demand- Side Load Control: A Simple-But-Efficient- Platform, http://dx.doi.org/10.1109/ACCESS.2020.3032745 , WOS:000587858000001	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2 0 2 0
4 3	Tor, Osman Bulent; Cebeci, Mahmut Erkut; Koc, Mehmet; Teimourzadeh, Saeed; Atli, Deren; Oprea, Simona Vasilica; Bara, Adela	Peak shaving and technical loss minimization in distribution grids: a time-of-use-based pricing approach for distribution service tariffs, http://dx.doi.org/10.3906/elk-1907-30 , WOS:000532359500014	TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, ISSN/eISSN: 1300- 0632/1303-6203	2 0 2 0
4 4	Cebeci, Mahmut Erkut; Tor, Osman Bulent; Oprea, Simona Vasilica; Bara, Adela	Consecutive Market and Network Simulations to Optimize Investment and Operational Decisions Under Different RES Penetration Scenarios, http://dx.doi.org/10.1109/TSTE.2018.2881036 , WOS:000487199700050	IEEE TRANSACTIONS ON SUSTAINABLE ENERGY, ISSN/eISSN: 1949- 3029/1949-3037	2 0 1 9
4 5	Oprea, Simona Vasilica; Bara, Adela; Ifrim, George Adrian; Coroianu, Lucian	Day-ahead electricity consumption optimization algorithms for smart homes, http://dx.doi.org/10.1016/j.cie.2019.06.023 , WOS:000482244100030	COMPUTERS & INDUSTRIAL ENGINEERING, ISSN/eISSN: 0360- 8352/1879-0550	2 0 1 9
4 6	Teimourzadeh, Saeed; Tor, Osman Bulent; Cebeci, Mahmut Erkut; Bara, Adela; Oprea, Simona Vasilica	A three-stage approach for resilience-constrained scheduling of networked microgrids, http://dx.doi.org/10.1007/s40565-019-0555-0 , WOS:000477895600005	JOURNAL OF MODERN POWER SYSTEMS AND CLEAN ENERGY, ISSN/eISSN: 2196- 5625/2196-5420	2 0 1 9
4 7	Oprea, Simona Vasilica; Bara, Adela; Diaconita, Vlad	Sliding Time Window Electricity Consumption Optimization Algorithm for Communities in the Context of Big Data Processing, http://dx.doi.org/10.1109/ACCESS.2019.2892902 , WOS:000458177800075	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2 0 1 9
4 8	Oprea, Simona-Vasilica; Bara, Adela; Preotescu, Dan; Elefterescu, Luminta	Photovoltaic Power Plants (PV-PP) Reliability Indicators for Improving Operation and Maintenance Activities. A Case Study of PV-PP Agigea Located in Romania, http://dx.doi.org/10.1109/ACCESS.2019.2907098 , WOS:000464212600001	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2 0 1 9
4 9	Oprea, Simona-Vasilica; Bara, Adela	Machine Learning Algorithms for Short-Term Load Forecast in Residential Buildings Using Smart Meters, Sensors and Big Data Solutions,	IEEE ACCESS, ISSN/eISSN: 2169-3536/	2 0

	http://dx.doi.org/10.1109/ACCESS.2019.2958383 , WOS:000509483800046	1 9
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Conference proceedings and Book Chapters indexed by WoS, extracted from WoS 2019-2023

N	Authors	Title	Publication	Y e a r
1	Oprea, Simona-Vasilica; Bara, Adela; Jin Xiaolong; Meng, Qian; Berntzen, Lasse	Sustainable Communities with Smart Meters. A Statistical Measurement Model to Cope with Electricity Consumers' Behavior, http://dx.doi.org/10.1007/978-981-19-6755-9_12 , WOS:001012874500012	EDUCATION, RESEARCH AND BUSINESS TECHNOLOGIES, ISSN/eISSN: 2190-3018/2190-3026	2 0 2 3
2	Dobrita, Gabriela; Bara, Adela; Oprea, Simona-Vasilica; Baroiu, Costin; Barbu, Dragos-Catalin	Mobility, COVID-19 cases and virus reproduction rate data analysis for Romania using Machine Learning Algorithms, http://dx.doi.org/10.1109/ICSTCC55426.2022.9931806 , WOS:000889980600042	2022 26TH INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), ISSN/eISSN: 2372-1618/	2 0 2 2
3	Oprea, Simona-Vasilica; Bara, Adela; Oprea, Niculae	Machine learning in electricity fraud detection in smart grids with multivariate Gaussian distribution, http://dx.doi.org/10.2478/picbe-2021-0049 , WOS:000747987000021	PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON BUSINESS EXCELLENCE, ISSN/eISSN: 2502-0226/2558-9652	2 0 2 1
4	Marales, Razvan Cristian; Bara, Adela; Oprea, Simona-Vasilica	Edge Computing in Real-Time Electricity Consumption Optimization Algorithm for Smart Grids, http://dx.doi.org/10.1007/978-3-030-53651-0_16 , WOS:000621675100016	INTELLIGENT METHODS IN COMPUTING, COMMUNICATIONS AND CONTROL, ISSN/eISSN: 2194-5357/2194-5365	2 0 2 1
5	Oprea, Simona-Vasilica; Bara, Adela; Dobrita (Ene), Gabriela	Machine Learning Algorithms and Time Series Feature Extraction Library for Electricity Consumption Fraud Detection in Smart Grids, http://dx.doi.org/10.1109/ICSTCC52150.2021.9607308 , WOS:000859487900083	2021 25TH INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), ISSN/eISSN: 2372-1618/	2 0 2 1
6	Oprea, Simona-Vasilica; Bara, Adela; Ceaparu, Catalin; Ducman, Anca Alexandra; Diaconita, Vlad; Ene, Gabriela Dobrita	Insights with Big Data Analysis for Commercial Buildings Flexibility in the Context of Smart Cities, http://dx.doi.org/10.5220/0010409801180124 , WOS:000783446900012	PROCEEDINGS OF THE 10TH INTERNATIONAL CONFERENCE ON SMART CITIES AND GREEN ICT SYSTEMS (SMARTGREENS), ISSN/eISSN: /	2 0 2 1
7	Preotescu, Dan; Oprea, Simona-Vasilica; Bara, Adela	Flexibility of the Electricity Load for the Main Types of Consumers, , WOS:000683887600019	UNDER THE PRESSURE OF DIGITALIZATION: CHALLENGES AND SOLUTIONS AT ORGANIZATIONAL AND INDUSTRIAL LEVELS, FIRST EDITION, ISSN/eISSN: /	2 0 2 1
8	Ifrim, George; Oprea, Simona Vasilica; Bara, Adela	Peak Shaving Algorithms for Residential Consumers. A Comparative Study, http://dx.doi.org/10.1109/icstcc50638.2020.9259750 , WOS:000646582900007	2020 24TH INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), ISSN/eISSN: 2372-1618/	2 0 2 0

9	Oprea, Simona-Vasilica; Tudorica, Bogdan; Bara, Adela; Tor, Osman Bulent	An Intra-Residential Smart Metering System - Design and Implementation, http://dx.doi.org/10.2478/9788366675162-033 , WOS:000763773400032	INNOVATIVE MODELS TO REVIVE THE GLOBAL ECONOMY, ISSN/eISSN: 2704-6524/	2 0 2 0
10	Ifrim, George; Oprea, Simona Vasilica; Bara, Adela	Shifting Optimization Algorithm for Flattening the Electricity Consumption Peak of Residential Communities, http://dx.doi.org/10.1109/icstcc.2019.8885831 , WOS:000590181100119	2019 23RD INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), ISSN/eISSN: 2372-1618/	2 0 1 9
11	Oprea, Simona-Vasilica; Bara, Adela; Diaconita, Vlad; Preotescu, Dan; Tor, Osman Bulent	Big Data solutions - data ingestion and stream processing for demand response management, http://dx.doi.org/10.1109/icstcc.2019.8885519 , WOS:000590181100118	2019 23RD INTERNATIONAL CONFERENCE ON SYSTEM THEORY, CONTROL AND COMPUTING (ICSTCC), ISSN/eISSN: 2372-1618/	2 0 1 9

Research projects

Years	PI/Responsible / member	Project Title and Acronym	Type of Project	Funding Agency/ Competition	Budget ASE	Duration	Objective/Description
2024-2027	Responsible: SV Oprea	Valorisation and Integration of Extractive Waste towards the Sustainability of Raw Materials Industry	International (Intl.)	UEFISCDI ERA-MIN3	100.000 Euro	3 years	Focus on sustainable raw materials industry; details at valorwaste.ase.ro
2023-2026	PI Consortium Coordinator: SV Oprea	Service-oriented Open Platform for Citizen Energy Communities (OPEN4CEC)	Intl.	UEFISCDI Driven Urban Transition 2022	230.000 Euro	3 years	Develop an open platform for energy communities; details at dutpartnership.eu
2023-2026	PI Consortium Coordinator: SV Oprea	SMART-LEM (Business Model-Oriented Platform for Local Electricity Markets)	Intl.	UEFISCDI Clean Energy Transition Partnership 2022	230.000 Euro	3 years	Develop a platform for local electricity markets; details at smartlem.ase.ro
2022-2025	PI: SV Oprea	SMART-TWINS (Digital Twin Architecture for Energy Consumers and Communities)	National	UEFISCDI	1.200.000 RON	3 years	Develop a digital twin reference architecture for energy consumers and communities
2020-2022	PI: SV Oprea	BIGDATA4GRID (Big Data Solutions for Energy Consumption Management)	National	UEFISCDI	600.000 RON	2 years	Big data solutions for energy management and market strategies improvement
2018-2021	Responsible: SV Oprea	SMART-MLA (Multi-layer Aggregator Solutions for Demand Response and Grid Flexibility)	Intl.	UEFISCDI ERA-NET Co-fund under H2020	169.000 Euro	3 years	Facilitate optimum demand response and grid flexibility; details at smart-mla.stimasoft.com
2016-2018	PI: SV Oprea	SMART-OPTIM (Electricity	National	UEFISCDI	100.000 Euro	2 years	Solutions for electricity consumption analysis

		Consumption Analysis and Optimization in Smart Grids)					and optimization in smart grids
2016-2020	Responsible: A Bara, Project member: SV Oprea	SMARTRADE (Intelligent System for Trading on Wholesale Electricity Market)	Intl.	European Regional Development Fund (ERDF)	1.200.000 Euro	4 years	Trading on wholesale electricity market; details at smartrade.ase.ro
2016-2018	Responsible: A Bara, Project member: SV Oprea	OPTIM-PV (Optimizing Operation of Photovoltaic Power Plants)	National	UEFISCDI	100.000 Euro	2 years	Optimize operation of photovoltaic power plants; details at icpe.ro/projects/optimize
2014-2017	PI: A Bara, Project member: SV Oprea	SIPAMER (Intelligent System for Prediction, Analysis, and Monitoring in Renewable Energies)	National	UEFISCDI	348.000 Euro	3 years	Prediction, analysis, and monitoring in renewable energy processes
2010-2013	PI: A Bara, Project member: SV Oprea	Tinere Echiipe (TE)	National	UEFISCDI	140.000 Euro	3 years	Informatics solutions for decision-making in uncertain environments

International visibility

SV Oprea is principal investigator of two consortium in Driving Urban Transition (DUT) and Clean Energy Transition Partnership (CETP) projects won in 2023 with international partners from prestigious universities from Norway, Ireland, Spain, Italy, Portugal. SV Oprea is in one of the ERA-MIN3 projects won in 2023 and coordinated by Portugal.

S.V. Oprea is part of organization teams, like Science Connect (<https://www.esf.org/community-of-experts/>, https://www.esf.org/fileadmin/user_upload/esf/2021_Annual_List_of_External_Reviewers_and_Panel_Members-protected.pdf), or research organization/authorities from Slovakia, Bulgaria, to evaluate international research projects.

She is in the reviewing team of the Oeconomia Copernicana journal, Q1 (IF), Q3 (AIS), category: ECONOMICS – SSCI.

In 2021, SV Oprea received Researcher of the Year Award in ASE Bucuresti. She also received Opera Omnia awards.

List of patents

SV Oprea together with Adela Bara, Osman Tor and Dan Preotescu submitted a patent application in 2021. Title: SISTEM INFORMATIC INTEGRAT ȘI METODE PENTRU MANAGEMENTUL CONSUMULUI ȘI PRODUCȚIEI DE ENERGIE ELECTRICĂ PENTRU SIMULAREA ȘI TRANZACȚIONAREA PE PIEȚELE DE ENERGIEI ELECTRICĂ A/00549/21.01.2021 publication in BOPI 09/2021

14.05.2024



Modelul fișei de verificare a îndeplinirii standardelor minimale

Candidat/ă Nume, prenume Oprea Simona-Vasilica

Nr. Articol	Articol, referința bibliografică	M	N	AIS	Punctaj Final
1	S.V. Oprea, A. Bâra, Devising a trading mechanism with a joint price adjustment for local electricity markets using blockchain. Insights for policy makers, Elsevier Energy Policy, Volume 152, DOI: 10.1016/j.enpol.2021.112237, Article Number: 112237, Published: May 2021, ISSN: 0301-4215, WOS:000636054400028	10	2	1.538	13.84
2	S.V. Oprea, A. Bâra, Edge and fog computing using IoT for direct load optimization and control with flexibility services for citizen energy communities, Elsevier Knowledge Based-Systems, Volume 228, Article Number 107293, DOI10.1016/j.knosys.2021.107293, SEP 27 2021, WOS: 000659800800001	8	2	1.443	10.38
3	Cebeci, ME, Tor, OB, S.V. Oprea, Bâra, A, Consecutive Market and Network Simulations to Optimize Investment and Operational Decisions Under Different RES Penetration Scenarios, IEEE Transactions on Sustainable Energy, Volume: 10, Issue: 4, Pages: 2152-2162, DOI: 10.1109/TSTE.2018.2881036, Published: OCT 2019, WOS:000487199700050	6	2	2.270	12.25
4	S.V. Oprea, A. Bâra, Ultra-short-term forecasting for photovoltaic power plants and real-time key performance indicators analysis with big data solutions. Two case studies - PV Agiea and PV Giurgiu located in Romania, Computers in Industry, Volume: 120, Article Number: 103230, DOI: 10.1016/j.compind.2020.103230, pages:1-22, Published: SEP 2020, WOS:000538762600005	8	2	1.548	11.14
5	S.V. Oprea, A. Bâra, G. Ifrim, Optimizing the Electricity Consumption with a High Degree of Flexibility Using a Dynamic Tariff and Stackelberg Game, Springer Journal of Optimization Theory and Applications, Volume190, Issue1, Page151-182, DOI10.1007/s10957-021-01876-1, JUL 2021, WOS 000659800800001	8	3	0.775	4.96
6	S.V. Oprea, A. Bâra, G. Ifrim, Flattening the electricity consumption peak and reducing the electricity payment for residential consumers in the context of smart grid by means of shifting optimization algorithm, Elsevier Computers & Industrial Engineering, Volume 122, August 2018, Pages 125-139, Elsevier, https://doi.org/10.1016/j.cie.2018.05.053, WOS:000438478700008	8	3	1.139	7.28
7	S.V. Oprea, A. Bâra, GA Ifrim, L. Coroianu, Day-ahead electricity consumption optimization algorithms for smart homes, Computers & Industrial Engineering, Volume: 135, Pages: 382-401, DOI: 10.1016/j.cie.2019.06.023, Published: SEP 2019, WOS:000482244100030	8	4	1.139	6.37
8	S.V. Oprea, A. Bâra, Setting the Time-of-Use Tariff Rates with NoSQL and Machine Learning to a Sustainable Environment, IEEE ACCESS, Volume: 8, Pages: 25521-25530, DOI: 10.1109/ACCESS.2020.2969728, Published: 2020, WOS:000524658400002	8	2	0.685	4.93
9	S.V. Oprea, A. Bâra, Machine Learning Algorithms for Short-Term Load Forecast in Residential Buildings Using Smart Meters, Sensors and Big Data Solutions, IEEE Access, Volume: 7, Pages: 177874-177889, DOI: 10.1109/ACCESS.2019.2958383, Published: 2019, WOS:000509483800046	8	2	0.685	4.93

10	Oprea, SV., Bâra, A. <i>Machine learning classification algorithms and anomaly detection in conventional meters and Tunisian electricity consumption large datasets</i> , Computers and Electrical Engineering , Volume 94, September 2021, https://doi.org/10.1016/j.compeleceng.2021.107329 , ISSN 0045-7906, WOS:000694013100024	8	2	0.579	4.16
TOTAL Punctaj Pi					80.24

Nr. Crt	Articolul citat, referința bibliografică	Articolul în care a fost citat, referința bibliografică	Q	Categorie de încadrare	AIS	Punctaj
1	S.V. Oprea, A. Bâra, G. Ifrim, <i>Flattening the electricity consumption peak and reducing the electricity payment for residential consumers in the context of smart grid by means of shifting optimization algorithm</i> , COMPUTERS & INDUSTRIAL ENGINEERING , Volume 122, August 2018, Pages 125-139, Elsevier, ISSN: 0360-8352 https://doi.org/10.1016/j.cie.2018.05.053	Alic, O (Alic, Oguzkagan) Filik, UB (Filik, Ummuhan Basaran), A multi-objective home energy management system for explicit cost-comfort analysis considering appliance category-based discomfort models and demand response programs, Energy & Buildings , Volume 240, Article Number 110868, DOI10.1016/j.enbuild.2021.110868, JUN 1 2021	Q1	ENGINEERING, CIVIL: ENERGBUILDINGS (2020)	1.039	1
2	S. Teimourzadeh, OB. Tor, ME Cebeci, A.Bara, SV Oprea, <i>A three-stage approach for resilience-constrained scheduling of networked microgrids</i> , Journal Of Modern Power Systems And Clean Energy , ISSN 2196-5625, Volume7, Issue4, Page 705-715, DOI 10.1007/s40565-019-0555-0, JUL 2019	Shaker, A, Safari, A, Shahidehpour, M - Reactive Power Management for Networked Microgrid Resilience in Extreme Conditions, IEEE Transactions on Smart Grids , Volume 12, Issue 5, Page3940-3953, DOI10.1109/TSG.2021.3068049, SEP 2021	Q1	ENGINEERING, ELECTRICAL & ELECTRONIC	2.612	1
3	S. Preda, S.V. Oprea, A. Bâra, A. Belciu (Velicanu)- <i>PV Forecasting Using Support Vector Machine Learning in a Big Data Analytics Context</i> , Symmetry . ISSN: 2073-8994, 2018;10(12):748 DOI 10.3390/sym10120748, WOS:000454725100086, (Q2)	Lin, Guo-Qian; Li, Ling-Ling; Tseng, Ming-Lang; et al. - An improved moth-flame optimization algorithm for support vector machine prediction of photovoltaic power generation JOURNAL OF CLEANER PRODUCTION, ELSEVIER Volume: 253 Article Number: 119966 Published: APR 20 2020	Q1	ENGINEERING, ENVIRONMENTAL ENVIRONMENTAL SCIENCES	0.969	1
4	S. Preda, S.V. Oprea, A. Bâra, A. Belciu (Velicanu)- <i>PV Forecasting Using Support Vector Machine Learning in a Big Data Analytics Context</i> , Symmetry . ISSN: 2073-8994, 2018;10(12):748 DOI 10.3390/sym10120748, WOS:000454725100086, (Q2)	Soomro, Kamran; Bhutta, Muhammad Nasir Mumtaz; Khan, Zaheer; et al. - Smart city big data analytics: An advanced review WILEY INTERDISCIPLINARY REVIEWS-DATA MINING AND KNOWLEDGE DISCOVERY Volume: 9 Issue: 5 Article Number: e1319 Published: SEP-OCT 2019	Q1	COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE COMPUTER SCIENCE, THEORY & METHODS	1.009	1

5	S. Preda, S.V. Oprea , A. Bâra, A. Belciu (Velicanu)- <i>PV Forecasting Using Support Vector Machine Learning in a Big Data Analytics Context</i> , Symmetry. 2018; ISSN: 2073-8994, 10(12):748 DOI 10.3390/sym10120748, WOS:000454725100086, (Q2)	Rehman, Hassam Ur; Korvola, Timo; Abdurafikov, Rinat; et al. - Data analysis of a monitored building using machine learning and optimization of integrated photovoltaic panel, battery and electric vehicles in a Central European climatic condition, ENERGY CONVERSION AND MANAGEMENT Volume: 221 Article Number: 113206 Published: OCT 1 2020	Q1	ENERGY & FUELS	1.191	1
6	Cebeci, ME, Tor, OB, S.V. Oprea , Bâra, A, <i>Consecutive Market and Network Simulations to Optimize Investment and Operational Decisions Under Different RES Penetration Scenarios</i> , IEEE Transactions on Sustainable Energy, ISSN: 1949-3029, Volume: 10, Issue: 4, Pages: 2152-2162, DOI: 10.1109/TSTE.2018.2881036, Published: OCT 2019, WOS:000487199700050	Kang, Wenfa; Chen, Minyou; Li, Qiang, Distributed optimization model and algorithms for virtual energy storage systems using dynamic price, JOURNAL OF CLEANER PRODUCTION Volume: 289 Article Number: 125440 Published: MAR 20 2021	Q1	ENGINEERING, ENVIRONMENTAL ENVIRONMENTAL SCIENCES	0.969	1
7	S.V. Oprea , A.Bâra, A.Uță, A. Pîrjan, G. Cârțașu, <i>Analyses of Distributed Generation and Storage Effect on the Electricity Consumption Curve in the Smart Grid Context</i> , Sustainability 2018, 10, 2264; ISSN: 2071-1050 doi:10.3390/su10072264, MDPI, 2017, IF 2,075, AIS 0,322 (2017), (Q2)	Mohseni, Soheil; Brent, Alan C.; Burmester, Daniel - A demand response-centred approach to the long-term equipment capacity planning of grid-independent micro-grids optimized by the moth-flame optimization algorithm ENERGY CONVERSION AND MANAGEMENT, ELSEVIER Volume: 200 Article Number: 112105 Published: NOV 15 2019	Q1	ENERGY & FUELS MECHANICS THERMODYNAMICS	1.191	1
8	A. Pîrjan, SV Oprea , G. Carutasu, DM Petrosanu, A. Bara, C. Coculescu, <i>Devising Hourly Forecasting Solutions Regarding Electricity Consumption in the Case of Commercial Center Type Consumers</i> , ENERGIES, ISSN: 1996-1073, Volume 10, Issue 11, Article Number 1727, DOI 10.3390/en10111727, Published NOV 2017	Mustapa, RF; Dahlan, NY; Nordin, AHM, Quantification of energy savings from an awareness program using NARX-ANN in an educational building, ENERGY AND BUILDINGS , May 15 2020	Q1	CONSTRUCTION & BUILDING TECHNOLOGY ENGINEERING, CIVIL	1.039	1
9	Oprea, Simona-Vasilica ; Bara, Adela ; Andreescu, Anca Ioana - <i>Two Novel Blockchain-Based Market Settlement Mechanisms Embedded Into Smart Contracts for Securely Trading Renewable Energy</i> , IEEE Access, 2169-3536, Volume 8, Page 212548-212556, DOI10.1109/ACCESS.2020.3040764, Published 2020	Gimenez-Aguilar, M; de Fuentes, JM; Arroyo, Achieving cybersecurity in blockchain-based systems: A survey - FUTURE GENERATION COMPUTER SYSTEMS-THE INTERNATIONAL JOURNAL OF ESCIENCE , Nov 2021, 124 , pp.91-118	Q1	COMPUTER SCIENCE, THEORY & METHODS	1.085	1

10	Oprea, Simona-Vasilica ; Bara, Adela - <i>Analyses of Wind and Photovoltaic Energy Integration from the Promoting Scheme Point of View: Study Case of Romania</i> , ENERGIES, ISSN: 1996-1073, Volume 10, Issue 12, Article Number 2101, DOI 10.3390/en10122101, Published: DEC 2017	Nastase, G; Serban, A; Bucur, I - Photovoltaic development in Romania. Reviewing what has been done, RENEWABLE & SUSTAINABLE ENERGY REVIEWS , Oct 2018 94 , pp.523-535	Q1	GREEN & SUSTAINABLE SCIENCE & TECHNOLOGY ENERGY & FUELS	2.574	1
TOTAL Punctaj C					10.00	

$$S=P+C=80,24+10=90,24$$

Condiții ce trebuie îndeplinite pentru abilitare conform art 4:

Director de proiect/membru la granturile de cercetare:

Situația îndeplinirii criteriilor

Criterii minime Abilitare	Punctaj obținut
S≥4	90.24
P≥2	80.24
C≥1.2	10

Semnătura

Data: 14.05.2024