

## **Profile Page**



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Department : Electrical Engineering

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### **Research Interests :**

Power System Economics, Electricity Markets, Energy Forecasting, Flexibility, Energy Storage, AI Applications in Electricity Markets

### **Other Profile Links :**

#### **Google Scholar Link :**

Kailash Sharma [Click Here](#)

#### **Personal Web Link :**

Vidwan [Click Here](#)

Scopus [Click Here](#)

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Web of Science Publons [Click Here](#)

### **Journal Publications :**

Year	Journal	Publication
2023	International Journal of Numerical Modelling: Electronic Networks, Devices and Fields	A. Vijayvargia, K. C. Sharma, R. Bhakar, "VARMA Model Parameterization using MLLE Approach for Intraday Wind Power Forecasting Application "

2022	Journal of Energy Storage, Accepted for publication	P. P. Gupta, V. Kalkhambkar, P. Jain, K. C. Sharma, R. Bhakar, "Battery Energy Storage Train Routing and Security Constrained Unit Commitment under Solar Uncertainty"
2022	International Journal of Energy Research, vol.46, no. 4, pp. 4516-4539	P. P. Gupta, V. Kalkhambkar, K.C. Sharma, P. Jain and R. Bhakar, "Optimal Electric Vehicles Charging Scheduling for Energy and Reserve Markets Considering Wind Uncertainty and Generator Contingency"
2022	Renewable and Sustainable Energy Reviews, vol. 162, 112429	S. Sreekumar, S. Yamujala, K. C. Sharma, R. Bhakar, S. P. Simon, and A. S. Rana, "Flexible Ramp Products: A solution to enhance power system flexibility,"
2022	Electric Power Systems Research, vol. 212, 108258	S. Sreekumar, K. C. Sharma, R. Bhakar, S. P. Simon, and A. S. Rana, "Multi interval zero carbon flexible ramp product,"
2022	International Journal of Electric Power & Energy Systems, vol. 134, 107465	V. Prakash, P. Kushwaha, K. C. Sharma, R. Bhakar, "Frequency response support assessment from uncertain wind generation,"
2021	Energy and Built Environment, vol.2, no. 3, pp. 243-250	V. Prakash, K. C. Sharma and R. Bhakar, "Optimal Generation Mix for Frequency Response Adequacy in Future Power System"
2021	IEEE Systems Journal, vol.15, no.1, pp.170-179	S. Sreekumar, K. C. Sharma, R. Bhakar, "Multi Interval Solar Ramp Product to Enhance Power System Flexibility"
2020	International Transactions on Electrical Energy Systems	P. P. Gupta, P. Jain, V. Kalkhambkar, K. C. Sharma, R. Bhakar, "Stochastic SCUC with Battery Energy Storage and Wind Power Integration,"
2020	Technology and Economics of Smart Grids and Sustainable Energy, vol.5, no.21, 1056	S. Sreekumar, K. C. Sharma, R. Bhakar, "Grey System Theory Based Net Load Forecasting for High Renewable Penetrated Power Systems"
2019	International Journal of Electrical Power and Energy Systems, vol. 112, pp. 417-427	S. Sreekumar, K. C. Sharma and R. Bhakar, "Gumbel copula based multi interval ramp product for power system flexibility enhancement,"
2019	IET Generation, Transmission and Distribution, vol. 13, no. 13, pp. 2747-2760	P. P. Gupta, P. Jain, K. C. Sharma and R. Bhakar, "Stochastic scheduling of compressed air energy storage in DC SCUC framework for high wind penetration,"
2019	IET Generation, Transmission and Distribution, vol. 13, no. 16, pp. 3725-3733	V. Prakash, K. C. Sharma, R. Bhakar and H. P. Tiwari, "Modified interval scheduling of primary frequency response under uncertain photovoltaic generation,"
2019	International Transactions on Electrical Energy Systems, Special Issue	P. P. Gupta, P. Jain, K. C. Sharma and R. Bhakar, "Optimal scheduling of electric vehicle in stochastic AC SCUC problem for large scale wind power penetration,"
2019	IET The Journal of Engineering, vol. 18, pp. 5028-5032	P. P. Gupta, P. Jain, S. Sharma, K. C. Sharma, and R. Bhakar "Stochastic scheduling of battery energy storage system for large scale wind power penetration,"
2018	IEEE Transactions on Sustainable Energy, vol. 9, no. 1, pp. 302-310, 2018	V. Prakash, K. C. Sharma, R. Bhakar, H. P. Tiwari and F. Li, "Frequency response constrained modified interval scheduling under wind uncertainty,"
2018	IET Generation, Transmission and Distribution, vol. 12, no. 9, pp. 4348-4358, 2018	S. Sreekumar, K. C. Sharma and R. Bhakar, "Gumbel copula based aggregated net load forecasting for modern power systems,"
2014	Energy Conversion and Management, vol. 86, pp. 259-267	K. C. Sharma, R. Bhakar, H.P. Tiwari, "Strategic bidding for wind power producers in electricity markets"
2014	Iranian Journal of Science and Technology Transactions of Electrical Engineering, vol. 38, no. E2, pp. 191-203	K. C. Sharma, R. Bhakar, H.P. Tiwari, "Influence of price uncertainty modeling accuracy on bidding strategy of a multi-unit GENCO in electricity markets,"

2013	Electric Power Components and Systems, vol. 41, no. 3, pp. 271-285	K. C. Sharma, P. Jain, R. Bhakar, "Wind power scenario generation and reduction in stochastic programming framework"
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### Conference Publications :

Year	Conference	Publication
2023	2023 International Conference on Power, Instrumentation, Energy and Control (PIECON)	S. Gupta, B.B. Sharma, V. Prakash, S. Chawda, K. C. Sharma, "Scenarios and Modified Interval Based Wind Power Uncertainty Modelling for Decision Making in Electricity Market"
2022	4th International Conference on Energy, Power and Environment (ICEPE), Apr 29- May 01 2022	A. K. Nayak, K. C. Sharma, R. Bhakar and H. P. Tiwari, "Effect of high-resolution data input on wind speed prediction using machine learning algorithms,"
2021	9th IEEE International Conference on Power Systems (ICPS) IIT Kharagpur, India	Y. Pal, K. C. Sharma, A. Gupta, A. Vijayvargia and R. Bhakar, "Wind power forecasting using generalized autoregressive score model,"
2021	9th IEEE International Conference on Power Systems (ICPS) IIT Kharagpur, India (*Won Best Paper Award*)	S. Yadav, A. Jain, K. C. Sharma and R. Bhakar, "Load forecasting for rare events using LSTM,"
2021	9th IEEE International Conference on Power Systems (ICPS) IIT Kharagpur, India	A. K. Nayak, K. C. Sharma, R. Bhakar and H. P. Tiwari, "Short-term wind speed forecasting using multi-source multivariate RNN-LSTMs,"
2019	2nd International Conference on Large-Scale Grid Integration of Renewable Energy in India, New Delhi	A. Vijayvargia, K. C. Sharma and R. Bhakar, "Comparative study of short-term wind speed forecasting models,"
2019	2nd International Conference on Large-Scale Grid Integration of Renewable Energy in India, New Delhi	S. Gupta, K. C. Sharma, V. Prakash, R. Bhakar, "Impact of imbalance price mechanism on bidding strategy of wind power producers,"
2019	2nd International Conference on Large-Scale Grid Integration of Renewable Energy in India, New Delhi	V. Prakash, P. Kushwaha, K. C. Sharma, R. Bhakar and H. Tiwari, "Stochastic security constrained economic dispatch for PFR adequacy under uncertain wind generation,"
2019	8th International Conference on Power Systems, MNIT Jaipur	A. Gupta, K. C. Sharma, A. Vijayvargia and R. Bhakar, "Short-term wind power prediction using hybrid univariate ARIMA-GARCH model,"
2019	8th International Conference on Power Systems, MNIT Jaipur	S. Sreekumar, K. C. Sharma, R. Bhakar, S. Chawda, F. Teotia and V. Prakash, "Deviation charge reduction of aggregated wind power generation using intelligently tuned support vector regression,"
2018	IEEE 20th National Power Systems Conference, NIT, Tiruchirappalli	P. P. Gupta, P. Jain, S. Sharma, K. C. Sharma and R. Bhakar, "Scheduling of energy storage transportation in power system using benders decomposition approach,"
2018	8th IEEE India International Conference on Power Electronics, MNIT Jaipur	V. K. Saini, K. C. Sharma, R. Bhakar, and V. Prakash, "Impact of high renewable generation and electric vehicles penetration on generation scheduling,"
2018	8th IEEE India International Conference on Power Electronics, MNIT Jaipur	V. Prakash, K. C. Sharma, R. Bhakar, and H. P. Tiwari, "System inertia prediction for primary frequency response adequacy under uncertain wind generation,"

2018	8th IEEE India International Conference on Power Electronics, MNIT Jaipur	V. Prakash, R. Bhakar, H. P. Tiwari, and K. C. Sharma, “Inertia and primary frequency response assessment under uncertain photovoltaic generation,”
2017	IEEE PES General Meeting, Chicago, USA	V. Prakash, K. C. Sharma, R. Bhakar, H.P. Tiwari, S. Sreekumar, S. Chawda, F. Teotia, “Primary frequency response with stochastic scheduling under uncertain photovoltaic generation,”
2017	6th IEEE International Conference on Computer Application in Electrical Engineering-Recent Advances, IIT Roorkee	K. C. Sharma, R. Bhakar, H. P. Tiwari and Sandeep Chawda, “Scenario based uncertainty modeling of electricity market prices,”
2016	IEEE TENCON 2016: Technologies for Smart Nation, Singapore	S. Sreekumar, K. C. Sharma and R. Bhakar, “Optimized Support vector regression models for short term solar radiation forecasting in smart grid environment,”
2015	IEEE 18th National Power Systems Conference, IIT Guwahati	K. C. Sharma, R. Bhakar, H.P. Tiwari, “Stochastic EPEC approach for wind power trading in competitive electricity market,”
2015	IEEE Power Engineering Society General Meeting, Denver, USA	A. Nayak, K. C. Sharma, R. Bhakar, J. Mathur, “ARIMA based statistical approach to predict wind power ramps,”
2014	IEEE Int. Conf. on Recent Advances and Innovations in Engineering	K. C. Sharma, R. Bhakar, H. P. Tiwari, “Extreme Nash equilibrium of polymatrix game in electricity market,”
2014	IEEE Power Engineering Society General Meeting, Washington, USA	K. C. Sharma, R. Bhakar, N.P. Padhy, “Stochastic Cournot model for wind power trading in electricity markets,”

### Events Organized :

Category	Type	Title	Venue	From	To	Designation
STC	National	Operation and Control of Next Generation Low Carbon Power System	NIT Jalandhar	17-09-2020	21-09-2020	Coordinator
STC	National	Recent Trends on Renewable Energy Systems and their Control	NIT Jalandhar	14-09-20	18-09-20	Coordinator
STC	National	Machine learning and applied optimization applications in Engineering	NIT Jalandhar	21-12-2021	25-12-2021	Coordinator

### Professional Affiliations :

Designation	Organization
Senior Member	IEEE
Life Member	Indian Society for Technical Education (ISTE)
Member	International Society of Energy and Built Environment (ISEBE)
Member	IEEE Power and Energy Society

### PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Deven	Fast Frequency Response in Low Carbon Power System	Ongoing	2020	Dr. Vivek Sharma
Ajay Sharma	Reactive Power Ancillary Service Market for Renewable Integrated Power System	Ongoing	2020	

### Admin. Responsibilities :

Position Held	Organization	From	To
Institute Scholarship Co-Coordinator	NIT Jalandhar	2021	

### Award and Honours :

Title	Activity	Given by	Year
Best Paper Award	S. Yadav, A. Jain, K. C. Sharma and R. Bhakar, "Load forecasting for rare events using LSTM,"	9th IEEE International Conference on Power Systems (ICPS), Dec. 16 - 18, 2021, IIT Kharagpur, India.	2021
Invited Speaker	Lecture on 'Power System operation modeling using GAMS'	Workshop on 'Implementation of Optimization Techniques for Indian Power System Operation', Power System Operation Corporation Limited (A Govt. of India Enterprise), New Delhi	2018
POSOCO Power System Award	M.Tech. thesis work on wind power trading in competitive electricity market	Power System Operation Corporation (POSOCO) and Foundation for Innovation & Technology Transfer (FITT), IIT Delhi.	2013