

## Curriculum Vitae

**Dr. Ikhtlaq Hussain**

**SM IEEE, FIETE**

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### Correspondence Address

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### Permanent Address

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Jammu and Kashmir-182202, India

Dr. Ikhtlaq Hussain was born in Doda, Jammu and Kashmir, India, in 1986. Dr. Ikhtlaq Hussain received his B.E in Electrical Engineering from University of Jammu in 2009, M. Tech. (Gold Medalist) in Electrical Power System Management from the Jamia Millia Islamia (A Central University), New Delhi, India, in 2012 and Ph.D. in the Department of Electrical Engineering, Indian Institute of Technology Delhi (IIT Delhi), New Delhi, India, in 2018. Dr. Ikhtlaq Hussain was Postdoctoral Research Fellow in the Department of Electrical and Computer Engineering, National University of Singapore (NUS) from 1<sup>st</sup> July 2022 to 30<sup>th</sup> September 2022. Currently he is Assistant Professor (Grade I) in the Department of Electrical Engineering, NIT Srinagar. From 19<sup>th</sup> April 2017 to 31<sup>st</sup> Oct 2022, he was Assistant Professor in the Department of Electrical Engineering, Institute of Technology, University of Kashmir, Srinagar, India. From April 2021 to June 2022, he was Coordinator (HEAD) in the Department of Electrical Engineering, University of Kashmir. Dr. Hussain has received numerous awards for his contribution in the field of Electrical Engineering. He is a senior member of IEEE (Institute of Electrical and Electronics Engineers) since 2021. Dr. Hussain has been featured thrice in Stanford University's top 2% scientist rankings which commenced from 2019. Dr. Hussain was a recipient of the POSOCO power system award (PPSA) from Power System Operation Corporation (POSOCO) Limited, India and Foundation for Innovation and Technology Transfer (FITT) at Indian Institute of Technology Delhi in 2017, Gandhian Young Innovations Award in 2018, Outstanding Faculty researcher in the field of energy for 2017-2018. He has participated as young scientist in 3<sup>rd</sup> BRICS young scientist conclave from 25<sup>th</sup> – 29<sup>th</sup> June 2018 at Durban, South Africa by DST, Govt. of India. He has been recipient of four best paper awards in IEEE INDICON in 2015, the IEEE UPCON in 2016, IEEE SCES in 2020 and IEEE GUCON in 2021. He has guided two phd students and currently guiding 5 phd students from NIT Srinagar and Jamia Millia Islamia as co-supervisor. He has supervised more than 20 B.Tech and M.Tech projects. He has been granted 3 national patent and filed 2 patents. He has published more than 180 papers in reputed journals (including 32 IEEE transactions) and conferences (including 80 IEEE Conferences).

### EDUCATION

S. No	Degree	Specialisation	Institution	Grade	Year
1	Ph. D	Electrical Engineering	IIT Delhi	----	2013-2018
2	M.Tech	Electrical Power System Management	Jamia Millia Islamia	9.83/10 (Gold Medallist)	2010-2012
3	B.E	Electrical Engineering	University of Jammu	69.52%	2005-2009
4	XII		JKBOSE	70.50%	2005
5	X		JKBOSE	77.80%	2003

### ACADEMIC/RESEARCH EXPERINECES

S.No	Job Title	Start	End	University/College/R&D	Remarks
1	Assistant Professor Grade I	01-11-2022	---	NIT Srinagar	Teaching, research and administration

2	Assistant Professor	01-10-2022	31-10-2022	University of Kashmir	Teaching, research and administration
3	Research Fellow	01-07-2022	30-09-2022	National University of Singapore	Research
4	Assistant Professor	19-04-2017	30-06-2022	University of Kashmir	Teaching, research and administration
5	SRF	01-01-2015	18-04-2017	IIT Delhi	Research
6	JRF	01-01-2013	31-12-2014	IIT Delhi	Research
7	Lecturer (Contract)	September 2012	December 2012	NIT Srinagar	Teaching and research
8	Teaching Assistant	21-07-2010	20-07-2012	JMI, Delhi	Conducting Labs

### Sponsored Project

S.No.	Project Title	Role	Funding Agency	Duration	Start Year	Status
1	<b>Feasibility Survey of Electric Vehicles and its impact on Power Grid in Kashmir Province, J&amp;K</b>	PI	JKST&IC	1 year	2021	Completed

#### Details of Research Supervision

Degree	Currently Enrolled	Thesis/Dissertation Submitted	Degree Awarded
<b>Ph. D.</b>	<b>5</b>	<b>-</b>	<b>6</b>
<b>M.Tech</b>	<b>3</b>	<b>--</b>	<b>6</b>
<b>B.Tech projects</b>	<b>3</b>	<b>-</b>	<b>19</b>

### ACHIEVEMENTS AND AWARDS

- **Featured four times since 2019 in top 2% of researchers in the world, list published by Stanford University, USA.**
- **Selected and Participated as Young scientist in BRICS young scientist conclave at Durban, 25-29<sup>th</sup> June 2018 by DST, Govt. of India**
- **Recipient of the Gandhian Young Technology Innovation Award in the year 2018.**
- **Outstanding Faculty researcher in the field of energy for the year 2017-2018 in India by Careers-360.**
- **Received POSOCO Power System Award 2017 in Doctoral Category with Rs 60,000 cash.**
- **Gold Medallist in M. Tech.**
- **Received Ministry of Human Resource Development Assistantship from Government of India during M. Tech and Ph.D.**
- **Received Department of Science and Technology project Assistantship from Government of India during Ph.D.**
- **Received Merit scholarship in M. Tech from Jamia Millia Islamia (A central university), New Delhi.**
- **Received Means-cum-Merit scholarship in B.E from Govt. of Jammu and Kashmir.**
- **Qualified GATE (Graduate Aptitude Test of Engineering) in 2010.**
- **Best Paper Award** on paper entitled, B. Singh, Ikhlq Hussain, A. Chandra and K. Al-Haddad, "Power quality enhancement of the distribution system using hybrid filter," *2015 Annual IEEE India Conference (INDICON)*, New Delhi, 2015, pp. 1-6.
- **Best Paper Award** on paper entitled, Yashi Singh, Ikhlq Hussain, Bhim Singh and Sukumar Mishra, "Real Time Implementation of EPLL with Generalized Filtering in Single Phase Grid Interfaced SPV System," *UPCON 2016*, Varanasi, India, pp. 1-6.
- **Best Paper award in IEEE SCES in 2020 and IEEE GUCON in 2021**

- Secured 5<sup>th</sup> position in district level competition CSC-2002 organized by J&K state council for science and technology.

### **PATENTS/PUBLICATIONS/TECHNICAL PRESENTATIONS**

- **5 Indian Patents** (List is enclosed within).
- **186 papers** (published/accepted) in various **International Journals and conference Proceedings**. (List is enclosed within).
  - ✓ **IEEE/IET Journals: 53**
  - ✓ **Other Journals: 31**
  - ✓ International Conferences: 88
  - ✓ National Conferences: 7
  - ✓ Book Chapters (8)
- **43 Technical Presentations** at various international and national conferences.
- **Total Citations: 3972**

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### **PROFESSIONAL AFFILIATIONS**

**Reviewer** of various international journals such **IEEE/IET**

**IEEE Senior Member since 2021**

**Fellow IETE**

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### **PERSONAL DETAILS**

- **Date of Birth** : 01-05-1986
- **Father's Name** : Late Ghulam Nabi
- **Marital Status** : Married
- **Languages Known** : English, Urdu and Kashmiri
- **Nationality** : Indian

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### **REFERENCES**

- 1) **Prof. Sanjib Kumar Panda**  
**Director**  
Power and Energy Section  
Electrical Machines and Drives Laboratory (EMDL),  
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- 2) **Prof. Bhim Singh,**  
(FIEEE, FIE (E), FIET, FIETE, FINAE, FINSA, FNSc, FTWAS)  
Emeritus Professor,  
Indian Institute of Technology Delhi  
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- 3) **Prof. M. D. Mufti,**  
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I hereby declare that the above written particulars are true to the best of my knowledge and belief.

Date: 21/09/2024

(**Ikhlaq Hussain**)

### LIST OF PATENTS AND PUBLICATIONS

#### Patents

1. Bhim Singh, Bijaya Panigrahi, Nishant Kumar, and **Ikhlaq Hussain**, "Photovoltaic System To Track The Maximum Power Point For Maximum Power Extraction and Method Thereof," Granted Indian Patent No. 389815, on February 21, 2022.
2. Bhim Singh, Neha Beniwal and **Ikhlaq Hussain**, "An Islanded Single-Stage Solar Photovoltaic- Battery System with Grid Synchronization Capability," Pending Indian patent No. 201911013864 Filed on: April 05, 2019.
3. Bhim Singh, **Ikhlaq Hussain**, Geeta Pathak and Bijaya Panigrahi, "A Three-Phase Three Wire Grid Interfaced Solar Photovoltaic System with Islanding and Synchronization Capabilities," Pending Indian Patent No. 201811015695 Filed on April 25, 2018.
4. Bhim Singh, Bijaya Panigrahi, Nishant Kumar, and **Ikhlaq Hussain**, "A Single Sensor Based Maximum Power Point Tracking (MPPT) Technique for Battery Charging," Pending Indian Patent No. 201711039663 Filed on November 07, 2017.
5. Bhim Singh, Bijaya Panigrahi, Nishant Kumar, and **Ikhlaq Hussain**, "Fifth-Order Generalized Integrator Based Reduced Sensor Topology for Three-Phase Two-Stage Grid Integrated Solar Photovoltaic System," Granted Indian Patent No. 414211, on Dec 12, 2022.

#### Journal Publications in IEEE

6. M. Srinivas, **Ikhlaq Hussain** and B. Singh, "Combined LMS–LMF-Based Control Algorithm of DSTATCOM for Power Quality Enhancement in Distribution System," *IEEE Transactions on Industrial Electronics*, vol. 63, no. 7, pp. 4160-4168, July 2016.
7. R. K. Agarwal, **Ikhlaq Hussain** and B. Singh, "LMF-Based Control Algorithm for Single Stage Three-Phase Grid Integrated Solar PV System," *IEEE Transactions on Sustainable Energy*, vol. 7, no. 4, pp. 1379-1387, Oct. 2016.
8. S. Kumar, A. K. Verma, **Ikhlaq Hussain**, B. Singh and C. Jain, "Better Control for a Solar Energy System: Using Improved Enhanced Phase-Locked Loop-Based Control Under Variable Solar Intensity," *IEEE Industry Applications Magazine*, vol. 23, no. 2, pp. 24-36, March-April 2017.
9. Nishant Kumar, **Ikhlaq Hussain**, Bhim Singh and B. K. Panigrahi, "Single Sensor based MPPT of Partially Shaded PV System for Battery Charging by using Cauchy and Gaussian Sine Cosine Optimization," *IEEE Transactions on Energy Conversion*, vol. 32, no. 3, pp. 983-992, July 2017.
10. Nishant Kumar, **Ikhlaq Hussain**, Bhim Singh and B. K. Panigrahi, "MPPT in Dynamic Condition of Partially Shaded PV System by using WODE Technique" *IEEE Transactions on Sustainable Energy*, vol. 8, no. 3, pp. 1204-1214, July 2017.
11. Rahul Kumar Agarwal, **Ikhlaq Hussain**, and Bhim Singh, "Implementation of LLMF Control Algorithm for Three-Phase Grid Tied SPV-DSTATCOM System" *IEEE Transactions on Industrial Electronics*, vol. 64, no. 9, pp. 7414-7424, Sept. 2017.
12. N. Kumar; **Ikhlaq Hussain**; B. Singh; B. K. Panigrahi, "Maximum Power Peak Detection of Partially Shaded PV Panel by Using Intelligent Monkey King Evolution Algorithm," in *IEEE Transactions on Industry Applications*, **53**(6): 5734 -5743, 2017.
13. S. Kumar; **Ikhlaq Hussain**; B. Singh; A. Chandra; K. Al Haddad, "An adaptive novel control scheme of SPV system integrated to three phase AC distribution system," *IEEE Transactions on Industry Applications*, **53**(6): 5173 -5181, 2017.
14. N. Kumar; **Ikhlaq Hussain**; B. Singh; B. Panigrahi, "Rapid MPPT for Uniformly and Partial Shaded PV System by using JayaDE Algorithm in Highly Fluctuating Atmospheric Conditions," *IEEE Transactions on Industrial Informatics*, vol. 13, no. 5, pp. 2406-2416, Oct. 2017.
15. Bhim Singh, Priyank Shah, **Ikhlaq Hussain**, "ISOGI-Q Based Control Algorithm for Single Stage Grid Tied SPV System" *IEEE Transactions on Industry Applications*, vol. 54, no. 2, pp. 1136-1145, March-April 2018.
16. Nishant Kumar, **Ikhlaq Hussain**, Bhim Singh and B. K. Panigrahi, "Framework of Maximum Power Extraction from Solar PV Panel using Self Predictive Perturb and Observe Algorithm" *IEEE Transactions on Sustainable Energy*, vol. 9, no. 2, pp. 895-903, April 2018.
17. Amresh Kumar Singh, **Ikhlaq Hussain**, and Bhim Singh, "Double Stage Three-Phase Grid Integrated Solar PV System with Fast Zero Attracting Normalized Least Mean Fourth Based Adaptive Control" *IEEE Transactions on Industrial Electronics*, vol. 65, no. 5, pp. 3921-3931, May 2018.

18. Nupur Saxena, **Ikhlaq Hussain**, Bhim Singh and A. L. Vyas, "Implementation of Grid Integrated PV-Battery System for Residential and Electrical Vehicle Applications" *IEEE Transactions on Industrial Electronics*, vol. 65, no. 8, pp. 6592-6601, Aug. 2018.
19. Rahul Kumar Agarwal, **Ikhlaq Hussain**, and Bhim Singh, "Application of LMS Based NN Structure for Power Quality Enhancement in a Distribution Network under Abnormal Conditions" *IEEE Transactions on Neural Network and Learning Systems*, Early Access.
20. Bhim Singh, Maulik Kandpal and **Ikhlaq Hussain**, "Control of Grid Tied Smart PV-DSTATCOM System using an Adaptive Technique," *IEEE Transactions on Smart Grid*, Early Access.
21. N. Kumar; **Ikhlaq Hussain**; B. Singh; B. Panigrahi, "Self-Adaptive Incremental Conductance Algorithm for Swift and Ripple Free Maximum Power Harvesting from PV Array" *IEEE Transactions on Industrial Informatics*, vol. 14, no. 5, pp. 2031-2041, May 2018.
22. N. Kumar; **Ikhlaq Hussain**; B. Singh; B. Panigrahi, "Implementation of Multilayer Fifth Order Generalized Integrator Based Adaptive Control for Grid Tied Solar PV Energy Conversion System" *IEEE Transactions on Industrial Informatics*, vol. 14, no. 7, pp. 2857-2868, July 2018.
23. Priyank Shah, **Ikhlaq Hussain**, Bhim Singh, "Fuzzy Logic Based FOGI-FLL Algorithm for Optimal Operation of Single Stage Three Phase Grid Interfaced Multifunctional SECS" *IEEE Transactions on Industrial Informatics*, vol. 14, no. 8, pp. 3334-3346, Aug. 2018.
24. **Ikhlaq Hussain**, Rahul Agarwal, Bhim Singh, "MLP Control Algorithm for Adaptable Dual-Mode Single-Stage Solar PV System Tied to Three-Phase Voltage-Weak Distribution Grid" *IEEE Transactions on Industrial Informatics*, vol. 14, no. 6, pp. 2530-2538, June 2018.
25. Priyank Shah, **Ikhlaq Hussain**, Bhim Singh, "A Novel Fourth Order Generalized Integrator Based Control Scheme for Multifunctional SECS in the Distribution System" *IEEE Transactions on EC*, Early Access. Sept. 2018 **33**(3): 949 -958.
26. Sanchit Mishra, **Ikhlaq Hussain**, Bhim Singh, Ambrish Chandra, Kamal Al-Hadad and Priyank Shah, "Frequency Adaptive Pre Filtering Stage for Differentiation Based Control of Shunt Active Filter under Polluted Grid Conditions," Accepted for *IEEE Transactions on Industry Applications*. vol. 55, no. 1, pp. 882-891, Jan.-Feb. 2019.
27. Vandana Jain, **Ikhlaq Hussain**, Bhim Singh, "A FFP Based Adaptive Control of SPV System Tied to Weak Grid" *IEEE Transactions on Industry Applications*, vol. 54, no. 4, pp. 3112-3121, July-Aug. 2018. July-Aug. 2018, vol. 54, no. 4, pp. 3112-3121.
28. N. Kumar, I. Hussain, B. Singh and B. K. Panigrahi, "Normal Harmonic Search Algorithm-Based MPPT for Solar PV System and Integrated With Grid Using Reduced Sensor Approach and PNKLMS Algorithm," in *IEEE Transactions on Industry Applications*, vol. 54, no. 6, pp. 6343-6352, Nov.-Dec. 2018..
29. N. Beniwal, I. Hussain and B. Singh, "Implementation of the DSTATCOM With an i-PNLMS-Based Control Algorithm Under Abnormal Grid Conditions," in *IEEE Transactions on Industry Applications*, vol. 54, no. 6, pp. 5640-5648, Nov.-Dec. 2018.
30. Priyank Shah, Ikhlaq Hussain, **Bhim Singh**, Ambrish Chandra and Kamal Al-Haddad, "GI Based Control Scheme for Single Stage Grid Interfaced SECS for Power Quality Improvement", *IEEE Transactions on Industry Applications*. vol.55, no.1, pp.869-881, Jan-Feb-2019.
31. N. Beniwal, **I. Hussain** and B. Singh, " A Second-Order Volterra Filter Based Control of Solar PV-DSTATCOM System to Achieve Lyapunov's Stability," in *IEEE Transactions on Industry Applications*. vol. 55, no. 1, pp. 670-679, Jan.-Feb. 2019.
32. Vandana Jain, **Ikhlaq Hussain**, Bhim Singh, "A FFP Based Adaptive Control of SPV System Tied to Weak Grid" *IEEE Transactions on Industry Applications*, July-Aug. 2018, vol. 54, no. 4, pp. 3112-3121.
33. Priyank Shah, **Ikhlaq Hussain**, **Bhim Singh**, Ambrish Chandra and Kamal Al-Haddad, "Single Stage SECS Interfaced with Grid Using ISOGI-FLL Based Control Algorithm", *IEEE Transactions on Industry Applications*. vol. 55, no. 1, pp. 701-711, Jan.-Feb. 2019.
34. Subarni Pradhan, **Ikhlaq Hussain**, **Bhim Singh**, and B. K. Panigrahi, "Performance Improvement of Grid Integrated Solar PV System using DNLMS Control Algorithm", *IEEE Transactions on Industry Applications* vol. 55, no. 1, pp. 78-91, Jan.-Feb. 2019.
35. N. Beniwal, I. Hussain and B. Singh, "Vector-Based Synchronization Method for Grid Integration of Solar PV-Battery System," in *IEEE Transactions on Industrial Informatics*, vol. 15, no. 9, pp. 4923-4933, Sept. 2019.
36. B. Hamid, I. Hussain, S. J. Iqbal, B. Singh, S. Das and N. Kumar, "Optimal MPPT and BES Control for Grid-Tied DFIG Based Wind Energy Conversion System," in *IEEE Transactions on Industry Applications*, 2022,
37. M. Chankaya, A. Ahmad, I. Hussain, B. Singh and S. B. Q. Naqvi, "Grid Interfaced Photovoltaic-Battery Energy Storage System With Slime Mould Optimized Adaptive Seamless Control," in *IEEE Transactions on Industry Applications*, , 2022
38. M. Aijaz, I. Hussain, S. A. Lone and M. Chankaya, "GRLF-LAD Control Based Active Power Filter Operation With QSG-SOGI Algorithm for Grid Voltage Harmonics Disturbance Rejection," in *IEEE Access*, vol. 11, pp. 135753-135763, 2023

39. B. Hamid, I. Hussain, S. J. Iqbal, B. Singh and S. Das, "Adaptive Control of DC Link Voltage in a DFIG-Based Hybrid Grid-Interactive System Using Gaussian Kernel Least Mean Sixth Adaptive Filter," in *IEEE Transactions on Industrial Electronics*,

### Journal Publications in IET

40. Rahul Kumar Agarwal, **Ikhlaq Hussain**, and Bhim Singh, "Three-Phase Grid-Tied Single-Stage Solar Energy Conversion System using LLMS Control Algorithm" *IET Renewable Power Generation*, Volume 10, Issue 10, p. 1638 – 1646, 2016.
41. **Ikhlaq Hussain**, Maulik Kandpal, and Bhim Singh, "Real Time Implementation of Three-Phase Single Stage SPV Grid Tied System Using TL-VSC," *IET Renewable Power Generation*, vol. 11, no. 12, pp. 1576-1583, 10 18 2017.
42. N. Kumar, **Ikhlaq Hussain**, B. Singh and B. K. Panigrahi, "Single sensor based MPPT for partially shaded solar photovoltaic by using human psychology optimisation algorithm," in *IET Generation, Transmission & Distribution*, vol. 11, no. 10, pp. 2562-2574, 7 13 2017.
43. Priyank Shah, **Ikhlaq Hussain**, Bhim Singh, "Real-Time Implementation of Optimal Operation of Single Stage Grid Interfaced PV System under Weak Grid conditions," *IET Generation, Transmission & Distribution*, vol. 11, no. 8, pp. 1976-1984, 6 1 2017.
44. S. Shivam, **Ikhlaq Hussain** and B. Singh, "Real-time implementation of SPV system with DSTATCOM capabilities in three-phase four-wire distribution system," *IET Generation, Transmission & Distribution*, vol. 11, no. 2, pp. 495-503, 1 26 2017.
45. Rahul Kumar Agarwal, **Ikhlaq Hussain** and B. Singh, "Three-phase single-stage grid tied solar PV ECS using PLL-less fast CTF control technique," *IET Power Electronics*, vol. 10, no. 2, pp. 178-188, 2 10 2017.
46. N. Kumar, **Ikhlaq Hussain**, B. Singh and B. K. Panigrahi, "Peak power detection of PS solar PV panel by using WPSCO," in *IET Renewable Power Generation*, vol. 11, no. 4, pp. 480-489, 3 15 2017.
47. Yashi Singh, **Ikhlaq Hussain**, Sukumar Mishra and Bhim Singh, "An Adaptive Neuron Detection Based Control of Single Phase SPV Grid Integrated System with Active Filtering," *IET Power Electronics*, vol. 10, no. 6, pp. 657-666, 5 19 2017.
48. Subarni Pradhan, **Ikhlaq Hussain**, Bhim Singh and B. K. Panigrahi, "Modified VSS LMS Based Adaptive Control for Improving the Performance of a Single Stage PV-Integrated Grid System" *IET Science, Measurement and Technology*, vol. 11, no. 4, pp. 388-399, 7 2017.
49. Yashi Singh, **Ikhlaq Hussain**, Bhim Singh and Sukumar Mishra, "Single-Phase Solar Grid Interfaced System with Active Filtering Using ALCF Based Control Scheme," *IET Generation, Transmission & Distribution*, vol. 11, no. 8, pp. 1976-1984, 6 1 2017.
50. Priyank Shah, **Ikhlaq Hussain**, Bhim Singh, "Multi-Resonant FLL Based Control Algorithm for Grid Interfaced Multifunctional Solar Energy Conversion System" *IET Science, Measurement and Technology*, vol. 12, no. 1, pp. 49-62, 1 2018.
51. N. Kumar, **Ikhlaq Hussain**, B. Singh and B. K. Panigrahi, "Quick and Oscillation Free Peak Power Estimation using Self-Estimated Hill Climbing Algorithm for Single Sensor Based PV Fed Battery Charging," in *IET Renewable Power Generation*, vol. 12, no. 2, pp. 207-218, 2 5 2018.
52. Neha Beniwal, **Ikhlaq Hussain**, B. Singh, "A Hybrid VSS-LMS-LMF based Adaptive Control of SPV-DSTATCOM System under Distorted Grid Conditions," in *IET Renewable Power Generation*, vol. 12, no. 3, pp. 311-322, 2 26 2018.
53. Seema, B. Singh and **Ikhlaq Hussain**, "Power Management in PV-Battery-Hydro Based Standalone Microgrid," in *IET Renewable Power Generation*, vol. 12, no. 4, pp. 391-398, 3 19 2018.
54. Sanchit Mishra, **Ikhlaq Hussain**, Geeta Pathak and Bhim Singh, "dPLL Based Control of A Hybrid Wind-Solar Grid Connected Inverter in the Distribution System," *IET Power Electronics*, vol. 11, no. 5, pp. 952-960, 5 1 2018.
55. Rahul Kumar Agarwal, **Ikhlaq Hussain**, and Bhim Singh, "A Dual Function PV-ECS Integrated to 3P4W Distribution Grid using 3M-PLL Control for Active Power Transfer and Power Quality Improvement" *IET Renewable Power Generation*, vol. 12, no. 8, pp. 920-927, 6 11 2018.
56. N. Beniwal, I. Hussain and B. Singh, "Control and operation of a solar PV-battery-grid-tied system in fixed and variable power mode," in *IET Generation, Transmission & Distribution*, vol. 12, no. 11, pp. 2633-2641, 6 19 2018.
57. S. Jha, I. Hussain, B. Singh and S. Mishra, "Optimal operation of PV-DG-battery based microgrid with power quality conditioner," in *IET Renewable Power Generation*, vol. 13, no. 3, pp. 418-426, 25 2 2019.
58. V. Jain, I. Hussain, M. Kandpal and B. Singh, "Convex combination of least mean square for grid-tied PV system," in *IET Renewable Power Generation*, vol. 13, no. 13, pp. 2319-2327, 7 10 2019.

### Other Journal Publications

59. **Ikhlaq Hussain** and H. Ashfaq, "Performance improvement and analysis of stand-alone hybrid wind /battery/DG power generation system," *International journal of Computing science and Communication Technologies*, Vol. 5, No. 2, pp. 847-853, Jan. 2013. (ISSN 0974-3375).

60. **Ikhlaq Hussain**, Maulik Kandpal, and Bhim Singh, "Grid Integration of Single Stage Solar PV System using Three-level Voltage Source Converter," *International Journal of Emerging Electric Power Systems*, Volume 17, Issue 4, pp.425-434, August 2016.
61. Haroon Ashfaq, Mohammad Saood, **Ikhlaq Hussain** and M.S.Jamil Asghar, "Maximum Power and Maximum Power Factor Tracking of Grid Connected Wound Rotor Induction Generators," *International Journal on Recent Technologies in Mechanical and Electrical Engineering (IJRMEE)*, Vol. 3, Issue 2, Pages 05-09, Feb. 2016. **ISSN: 2349-7947**.
62. **Ikhlaq Hussain**, Maulik Kandpal, and Bhim Singh, "Grid integration of single stage SPV-STATCOM using cascaded 7-level VSC," *International Journal of Electrical Power & Energy Systems*, Volume 93, Pages 238-252, December 2017.
63. Haroon Ashfaq, **Ikhlaq Hussain** and Ajay Giri, "Comparative analysis of old, recycled and new PV modules," *Journal of King Saud University - Engineering Sciences*, Vol. 29, Issue 1, Pages 22–28, January 2017. **ISSN: 1018-3639**.
64. Maulik Kandpal, **Ikhlaq Hussain** and Bhim Singh, "Active power control of grid tied SPV system with DSTATCOM capabilities," *International Journal of Emerging Electric Power Systems*, vol. 18, issue 3, May 2017.
65. Yashi Singh, **Ikhlaq Hussain**, Bhim Singh and Sukumar Mishra, "Single-Phase Single-Stage Grid Tied Solar PV System with Active Power Filtering Using Power Balance Theory," in *Institution of Engineers : Series B 99* (3), 301-311
66. Yashi Singh, **Ikhlaq Hussain**, Bhim Singh and Sukumar Mishra "Implementation of Grid Interfaced Photovoltaic system with Active Power Filter Capabilities," in *International Transactions on Electrical Energy Systems*, **28 (11), e2616**
67. Maulik Kandpal, **Ikhlaq Hussain** and Bhim Singh, "Grid Integration of Single-Stage SPV-STATCOM System Using Symmetric Cascaded Five-Level VSC," *Journal of The Institution of Engineers (India): Series B* 100 (2), 143-152
68. Ibrahim, Mukul Chankaya, **Ikhlaq Hussain**, M.A. Mallick and Atif Iqal, "Variable parameter resized zero attracting least mean fourth control for grid tied PV system," *International Journal on Innovative Technology and Exploring Engineering*, Vol. 5, No. 11, September 2019.
69. M. Chankaya, I. Hussain, A. Ahmad, H. Malik, and F. P. G. Márquez, "Multi-objective Grasshopper Optimization based MPPT and VSC Control of Grid-Tied PV-Battery System," *MDPI Electron*, 10(22), 2770, 2021 (ISSN 2079-9292) IF 2.397.
70. M. Chankaya, A. Ahmad, and I. Hussain, "Path-Finder Optimization Based Control of Grid-Tied PV Hybrid Energy Storage System," *IETE J. Res.*, 2021, doi: 10.1080/03772063.2021.1963335. vol 67, 1-18.
71. M. Chankaya, I. Hussain, A. Ahmad, H. Malik, and F. P. G. Márquez, "Generalized Normal Distribution Algorithm-Based Control of 3-Phase 4-Wire Grid-Tied PV-Hybrid Energy Storage System," *energies*, vol. 14, issue no. 14, pp. 1–24, 2021, doi: 10.3390/en14144355. (ISSN 1996-1073) (IF 3.004)
72. M. Chankaya, I. Hussain, A. Ahmad, I. Khan, and S. M. Muyeen, "Nyström Minimum Kernel Risk-Sensitive Loss Based Seamless Control of Grid-Tied PV-Hybrid Energy Storage System," *energies*, pp. 1–24, 2021.
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