

Curriculum Vitae



Name

Prof. RAMESH C. BANSAL

Correspondence Address

Professor
Department of Electrical Engineering,
Room 210, Building M9, University of Sharjah, Sharjah, P.O. Box 27272,
UAE
e-mails: rcbansal@ieee.org; rcbansal@gmail.com; rbansal@sharjah.ac.ae
Tel: +97165050971 (Off.); +971 507451630 (mobile),
Skype id: rcbansal
Research Gate: https://www.researchgate.net/profile/Ramesh_Bansal
ORCID id: <https://orcid.org/0000-0002-1725-2648>
LinkedIn: <https://www.linkedin.com/in/ramesh-bansal-34115b91/>
Scopus id: <https://www.scopus.com/authid/detail.uri?authorId=56022618100>
Google Scholar: <https://scholar.google.co.za/citations?user=xamOPsQAAAAJ&hl=en>

SUMMARY OF MAIN ACHIEVEMENTS

- Qualifications:** PhD (Renewable Energy/Power Syst.), ME (Power Syst.), First degree (Electrical), MBA, Grad Cert in Higher Ed (GCHE)
- Experience:** 25+ years (Teaching, Research, leadership & Industrial): University of Sharjah, UAE: 2 years; University of Pretoria: 5 years, Univ. of Queensland, Australia: 5 years; USP, Fiji: 2.5 years, BITS Pilani, India: 6.5 years, All India Radio: 9 years)
- Publications:** over 300 (Books: 9, Book Chapters: 18, Journals 198, Conf. 97), in review: over 30
- Google Citations:** over 9300; h index: 43
- Thesis Supervision:** Post Docs: 4;
PhD: completed 22, in progress 3
Masters: 20, in progress 6, Honors: over 100
- Funding:** Over 2 million USD funding from UoS, European Union, SANEDI, NRF, ESKOM, TIA, CBI Electric, Powertech, EWSETA, Australian Research Council and Australian Power Institute, etc.
- Editorial:** Editor/Associate Editor of several reputed journals including IEEE Systems Journal, IET-Renewable Power Generation, Electric Power Components & Systems, Technology and Economics of Smart Grids and Sustainable Energy.
- Professional Membership:** Fellow IET-UK; CPEng-IET-UK; Fellow Engineers Australia, Senior Member, IEEE; Fallow SAIEE, South Africa, Fellow-Institution of Engineers (India).
- Research Interests:** Diversified and interdisciplinary research interests in the areas of Renewable Energy and Power Systems, Power Electronics, Electrical Machines, Smart Grid.

Main Contents of CV

Summary	Page 1
Contents	2
Qualifications	3
Experience	3-9
University of Sharjah, UAE	
University of Murdoch, Australia	
University of Pretoria, South Africa	
University of Queensland, Australia	
University of South Pacific, Fiji	
BITS Pilani, India	
CCW, AIR	
Thesis Supervision	9-14
Post Docs	
PhD	
Masters	
Undergraduate	
Conference/Conference Chair/Workshop Attended	15-17
Thesis Examined (PhD and Masters)	17-19
Books/Books Proposals/Research Proposals/Exam Moderation/Academic Promotion Reviewed	20
Journal Reviewers	20-21
Conference Committee Member/Reviewer	21
Professional Society Membership	21
Journal Editorial	21
References	21-22
Publications	23-54
Books	23
Book Chapter	24-25
Journals	26-41
Conferences	41-49
Communicated	49-54

QUALIFICATIONS

- i) Graduate Certificate in Higher Education (GCHE) from the University of Queensland, Australia in 2012. The courses studied were Educ6100 (Design Learning for Contemporary Higher Education Contexts, Educ6101 (Designing Teaching and Assessment in Higher Education & Educ6102: Designing Educational Intervention and Educ6103: Education Intervention in Higher Education.
- ii) Ph. D from Indian Institute of Technology (IIT) Delhi, India, in April 2003, research topic being automatic reactive power control of autonomous hybrid power systems. Course works carried out were integrated energy systems and power system generation, transmission and distribution.
- iii) Master of Engineering (ME) in Electrical Engineering (Power Systems), from Delhi Technological University, India, in 1996 with 71.63% marks. Thesis topic was reactive power compensation of extra high voltage (EHV) long lines. The main subjects studied were computer methods in power systems, power system planning, power system transients, and power system optimization.
- iv) Master of Business Administration (MBA) from Indira Gandhi National Open University (IGNOU), New Delhi, India, in 1997. Also obtained postgraduate diploma in human resources management, operations management, and finance management in 1993, 1994 and 1995 respectively. The subjects studied were included General Management, Operations, HR, marketing & Finance subjects.
- v) AMIE in Electrical Engineering from Institution of Engineers (India) in 1991. The electrical engineering subjects studied were electrical machines, electrical measurements, network analysis, electromagnetic theory, control systems, machine design, electrical engineering materials, and utilization of electrical energy.
- vi) Diploma in Electrical Engineering from Govt. Polytechnic Sirsa (Haryana), India, in 1987 with 77.75% marks.
- vii) Matriculation from Govt. High School Ateli (Haryana), India, in 1984 with 72% marks. The subjects studied were Hindi, English, Mathematics, Science, Sanskrit, and Social Science.

EXPERIENCE

I have more than 25 years of teaching, research and industrial, leadership and administration experience. Brief details are as follows:

- i) **UNIVERSITY OF SHARJAH, UAE-Aug 26, 2018:** Full Professor and I have worked as Chair of Electrical and Computer Engineering Department at University of Sharjah. University of Sharjah is largest university of UAE with over 15000 students.

Research Funding

- Submitted several research projects for external and internal funding.
- Received research funding from University of Sharjah for AED 240 k for target and seed funding projects.

Teaching and Learning

- Teaching of PhD, Masters course on Advanced Topics in Power Systems, Special topic on Electrical Engineering (Renewable Energy), and UG courses Circuit Analysis I, Circuit Analysis II, Electric Power Engineering, Supervising of Senior Design Projects.
- ii) **SCHOOL OF ENGINEERING & INFORMATION TECHNOLOGY, MURDOCH UNIVERSITY, AUSTRALIA**, Adjunct Professor, from April 23, 2018 for 3 years.
- iii) **UNIVERSITY OF PRETORIA, SOUTH AFRICA – 1ST JULY 2013 – 31 Oct 2018**: Full Professor and Group Head (Power Group) in the Electrical, Electronic and Computer (EEC) Engineering department at the University of Pretoria, South Africa. University of Pretoria is one of top research-intensive university in Africa with over 60000 students. Nature of duties included delivering of lectures for UG and PG programmes, curriculum development, undergraduate and post graduate thesis supervision, research and publications, and administrative assignments, explore for funding to support for research, etc. Brief details are as follows:

Leadership/Administrative

- Group Head (Power Group): I have supervised, 4 Post Docs, 10 PhD, 9 masters, 15 Hons and 45 UG thesis students. Currently I am supervising 5 PhD, 7 masters, students.
- Guardian/mentor for 4th year students in the ECE department
- Member of several committees in the department/Faculty e.g. recruitment committee, students' guardian, Faculty National Research Foundation (NRF) rating committee, industry advisory board member.

Scholarship of Teaching & Learning, Curriculum Development

Course Code & Name	Year/No of students	Students feedback (out of 5.0)	Remarks/Role
Power Systems Analysis (EKK410)	2018 (90) 2017 (78) 2016 (72) 2015 (55)	4.2 4.2 4.5 4.1	<ul style="list-style-type: none"> • 4th year Undergraduate (UG) course, Lecturer, 50%. • Curriculum design, adding new topics on Power System Control, Economic Dispatch and Power System Protection to make contents in the course more appropriate. • Significant increase in students' enrolment in 2018 (93 students) compare to previous delivery in 2015 (55) and 2014 (25 students).
Power System Components (EKK 320)	2018 (75) 2017(117) 2016 (92) 2015 (83) 2014 (69)	4.2 3.9 - 4.1 4.1	3rd year UG course, Lecturer, 50%. Significant increase in students' enrolment in 2017 (117 students), 2016 (92 students) and 2015 (83 students) compare to 2014 (69 students). No student feedback was received by University in 2016 due to interruption going in South African Universities.
Electrical Drives (EAD 410)	2013 (56)	4.9	<ul style="list-style-type: none"> • 4th year UG course, Lecturer and course coordinator, 100%. • Curriculum design (revision to course contents and change in the tutorial methodology) • Significant increase in students' enrolment in 2013 (56 students) compare to previous delivery in 2013 around 30. • Received excellent students' feedback.
Renewable Energy (EGH 732)	2018 (26) 2017 (22) 2016 (20) 2015 (21) 2014 (19)	-	I have developed new postgraduate (PG) module first time in 2014. Lecturer and course coordinator, 100% No student feedback are received for honours module

- Developed & Teaching for continuation professional development (CPD) programme courses on Renewable Distributed Generation, Generator Technology and Power System Protection.

Funding

- CBI electric chair of Power Electronics & Power Systems, funding of R 1.6 million for 2013-16.
 - ESKOM TESP finding R 280000.00 for 2014-2018.
 - University of Pretoria (UP), Institute Research Theme (IRT) on Renewable Energy: R 475000.00, 2013-2018.
 - NRF rated researcher R 200000.00 for 2015-2019
 - Students bursary from industries Powertech, R 5.08 million for 2015-2019 ((Group activities –Lead person Dr Raj Naidoo, Power group).
 - EU Donor funded on Smart Grid in collaboration with SANEDI and DST, total projected funding of Rand 14 million for 2016-2018 for carrying out research (Group activities – Lead person Dr Raj Naidoo, Power group).
 - Development of a Harmonized Modular Curriculum for the Smart Grid, European Union, Main applicant, Technische Universitaet Dresden, Germany and 7 partner organizations including University of Pretoria (Lead person- Prof Ramesh Bansal, University of Pretoria), for 882 397.00 € for 2016-2019.
 - Product design & development: Distributed differential fault detection and identification (DDFDIA) protection relay for the DG-integrated distribution system, Patrick T. Manditereza, Prof R.C. Bansal, Technology Innovation Agency (TIA) funding, R 450000.00.
 - EWSETA (Energy and Water Seta) undergraduate student Bursary for 20 civil and 20 Electrical Engineering Students, Mr M van Dijk, Prof R.C. Bansal, R 2.4 million for 2018.
- iv) **UNIVERSITY OF QUEENSLAND, AUSTRALIA: 1ST JULY 2008 -30 JUNE 2013:** Senior Lecturer and Deputy Leader (Power and Energy Group) in School of Information Technology and Electrical Engineering (ITEE), The University of Queensland (UQ), St. Lucia Campus, Brisbane, Australia. UQ is ranked among top 50 University in the World and top 4th University in Australia with over 50000 students. Nature of duties included delivering of lectures for UG and PG (ME power generation) programmes, curriculum development, undergraduate and post graduate thesis supervision, etc. In 2012 I have completed my special studies programme (SSP) working at Powerlink Queensland. Powerlink (a Government owned corporation that owns, develops, runs and maintains Queensland’s high voltage electricity transmission network). I have worked with Grid Controls Planning group and involved in projects on stability and faults analysis (using software PSSE, Mudpack, etc.). Following are main Administrative, Teaching and Research activities carried out at UQ.

Leadership/Administrative

- Deputy Leader (Power and Energy Group)
- Advisor ME (Power Systems) Programme
- Tutor allocation in-charge in School of ITEE
- UQ Power Generation skills programme representative
- Member of Engineering Industry Advisory Board in the School of ITEE.

Scholarship of Teaching & Learning, Curriculum Development

Teaching

Course Code & Name	Year/No of students	Teachers rating (5.0)	Course rating (5.0)	Remarks/Role
Elec 7050: Generator Tech. Design & Applications	2012 (45) 2010 (36) 2008 (14)	3.92	3.96	ME Power Generation programme, Lecturer and course coordinator, 100%
Elec 7052: Plant Control Systems	2013 (27) 2011 (23) 2009 (23)	4.10	4.36	ME Power Generation programme, Lecturer and course coordinator, 100%
Elec 4302/7311: Power System Protection	2011(65) 2010(54) 2009 (30)	4.5	4.5	Lecturer and course coordinator, 100%
Elec 4400:Advance Electronic & Power Electronics Design	2012 (108) 2011 (53)	3.96	3.98	Lecturer and course coordinator, 50%
Elec 3300/ 7302: Electrical Energy Conversion & Utilization	2009 (101) 2008 (76)	4.25	- -	Lecturer, 50%; developed Internet Laboratory (ILab)
Engg. 3800: Team Project-II	2010: Sem. II	-	-	116 students, no formal lecturing, lecturer, 50%
Engg. 2800: Team Project-I	2010: Sem. I	-	-	134 students, no formal lecturing, lecturer, 50%
Engg 1000: Introduction to Professional Engineering	2009: Sem. I	-	-	95 students, lecturer, 50%, received UQ award for programme that enhance learning

Curriculum Development

At UQ, I have taught Elec3300/Elec7302: Electrical Energy Conversion & Utilization; Elec4302/Elec7311: Power System Protection; Elec4400/7402 Advance Electronic and Power Electronics Design, Engg1000: Introduction to Professional Engineering; and ME Power Generation programme (a collaborating programme of 3 Queensland's Universities and 3 Queensland's Power Generating Companies) courses on Elec7050: Generator Technology Design & Application and Elec7052: Plant Control Systems. Main teaching and learning activities include:

- I have completed my Graduate Certificate in Higher Education (GCHE) from UQ in 2012. I have practiced number of innovative ideas of Scholarship of Teaching & Learning (SOT&L) in several courses which have led to increase in the students' learning and increased students' enrolment.
- For Electrical Energy Conversion & Utilization (Elec3300/7302), we have developed Internet Laboratory (ILab) (<http://openilabs.ilab.uq.edu.au/MachinesLab/Home.aspx>) through funding from UQ and Power Industry for conducting of experiments on DC and AC machines. This facility helps students to conduct experiment in flexible environment. This is unique electrical machine laboratory facility in the Australia.

- I have developed a new course on Power System Protection (Elec4302/7311) and obtained a very high teacher and course evaluation rating of over 4.5/5.0 (students' feedback enclosed) consistently during 2009-2011 while increasing students' enrolment from 30 to 54 and then 65.
- I have developed course materials and taught ME Power Generation Programme courses on Elec7050: Generator Technology Design & Application and Elec7052: Plant Control Systems. There has been significant increase in students' enrolment from 14 to 34 and then 45 in Elec7050. I have received competitive funding for Plant Control Systems course for the development of software laboratory facility from Australian Power Institute (API).
- I have been on the role of advisor ME (Power Systems) and Industry Advisory Boards member in the School of Information Technology & Electrical Engineering for curriculum review of BE/ME programme and UQ representative for ME Power Generation programme.
- In 2009 I have received UQ awards for Engg1000 for the programme that enhances learning.

Funding

- Investigation of stability and power quality issues from the wide spread PV integration into electricity distribution networks, ARC linkage proposal (with Ingenero Pty Ltd.), T. K. Saha, N. Mithulananthan, R.C. Bansal (PI), for \$213332, completed 2016.
 - Development of a Modelling and Simulation facility for Plant Control System (Elec 7052) course of ME Power Generation, Ramesh Bansal, ITEE, UQ, to Australian Power Institute (API) for A\$ 60400.00, completed Jan. 2013.
 - Remote access of the machine laboratory for undergraduate engineering students, investigators, Tapan Saha, Andrew Thomas, Ramesh Bansal, EPSA and Power Industries, A\$ 30 000, completed 2010.
- v) **UNIVERSITY OF THE SOUTH PACIFIC, FIJI- 2 FEB. 2006 – 30 JUNE 2008:** Senior Lecturer & Group Leader (Renewable Energy Group) School of Engineering and Physics, The University of the South Pacific, Laucala Campus, Suva, Fiji. Nature of duties included delivering of lectures, curriculum development, thesis supervision, project guidance, etc. Following were the main Teaching, Research, administrative activities.

Leadership/ Administrative

- Served as Group Leader Renewal Energy Group of 15 members in the Faculty.
- Served as acting Division Coordinator, Electrical & Electronics Engg. time to time.

Scholarship of Teaching & Learning, Curriculum Development

Teaching

EE 211: Electrical Machines

EN 324: Electrical Engineering Design, 47 students in 2006 & 42 in 2007, students' feedback 93.75

EE 221: Power Systems Analysis, 45

EN 432: Energy Management and Renewable Energy Engineering (PG), 5 students in 2006 & 10 in 2007.

Curriculum Development

- I have done curriculum design for Electrical Machines & Power Systems to make separate courses on Electrical Machines and Power Systems.
- I have revised course contents on Electrical Engineering Design. I have also revised PG course on Energy Management and Renewable Energy Engineering which was lying idle for long time to make this course suitable for Electrical & Mechanical discipline students.
- Developed curriculum for B. Tech/BE and Post Graduate Diploma programmes in Electrical & Electronics Engg. and Renewable Energy
- Developed new course EN 426: Computer Methods in Power Systems for PG Diploma in Electrical & Electronics Engg. and Renewable Energy

Research Funding and Consultancy

- Carried out a national importance consultancy work on Assessment and Evaluation of Generation Efficiency of Selected Fiji Electricity Authority (FEA), owned Fuel and Renewable Power Generating Plants for Fiji Commerce Commission- completed, F\$ 6000.00, Aug 2007.
- External funding from French Govt. and SOPAC, F\$60 000.00 for development of renewable hub-completed 2008.
- Submitted proposal for external funding to European Union on Providing Electricity through a renewable Wind-Solar Hybrid System to Vadravadra Village community in Gau Island, FIJI for € 610561 (project was unsuccessful in last round).

- vi) **BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI, INDIA- 14 JUNE 1999- 31 DEC. 2005:** Assistant Professor in Electrical & Electronics Engineering Department, Birla Institute of Technology & Science, Pilani, India. BITS Pilani is one of the most reputed private Indian University which stands at par with Indian Institute of Technologies (IITs). Nature of duties included delivering of lectures (on campus and off campus), curriculum development, project guidance, distance learning lecturing for BS in Power Engineering specially designed for NTPC personnel (A 40 GW power generating company). Two batches of this programme of over 500 students in each batch were successfully completed.

Scholarship of Teaching & Learning, Curriculum Development

Teaching

1. Electrical Sciences
2. Power System-I & II
3. Electrical Machines
4. Electrical Technology
5. Engineering Measurements, Instrumentation and Control

Curriculum Development

I have made significant contribution to the on-campus teaching and curriculum development and teaching for BS in Power Engineering, a specially designed programme for National Thermal Power Generation (NTPC, a 40 GW Power Generating Company).

Major teaching & development activities involved around BS Power Engineering programme. This was a new and unique kind of programme which was developed first time for NTPC Professional Engineers. NTPC has coal and gas-based plants in more than 15 locations spread all over India. It was a highly challenging task of how to design and implement teaching classes, design assessments and conduct examination for this programme. I was actively involved in all the development activities. Lot of experiments were carried out and it took about a year to well settle on these activities. Each lecturer involved in BS Power Engineering programme taught a course in 3-4 plants twice a semester covering a total distance of over 10000 km for covering NTPC plants. Each course had two assignments and final examination (conducted at plants). I have taught and developed several courses for this programme. Two batches of this programme (over 500 students in each batch) were successfully completed for this programme. When most of the engineers successfully completed this programme then to sustain this programme, BITS Pilani made collaboration with several industries and contact lecturing was developed through remote online lecturing.

I have also made contribution in Practice School 1 (PS 1) which is an industrial training programme for all students for which BITS Pilani has collaboration with more than 100 industries.

- vii) Civil Construction Wing, All India Radio- 26 Aug 1989 – 26 Aug 1998:** Engineer in Civil Construction Wing, All India Radio, New Delhi, India. Nature of duties included delivering of lectures, curriculum development in Training department, Planning and Maintenance of execution and financial management of projects for electrical services, e.g. lighting, fan, DG sets, air conditioning, fire-fighting, etc.

THESIS SUPERVISION

Post-Doctoral Fellows:

1. Dr. Temitope Adeferati, Postdoctoral Research Fellow, Supervisors: R.C. Bansal, Power Group, Electrical Electronics and Computer Engineering, University of Pretoria, South Africa, March 2018- Feb. 2019.
2. Dr. Arvind Kumar, Postdoctoral Research Fellow, Supervisors: R. Naidoo, R.C. Bansal, Power Group, Electrical Electronics and Computer Engineering, University of Pretoria, South Africa, Oct 15, 2017- 31 Dec. 2018.
3. Dr. Jackson Justo, Postdoctoral Research Fellow, Supervisor: R.C. Bansal, Power Group, Electrical Electronics and Computer Engineering, University of Pretoria, South Africa, April 1, 2016- March 2018.
4. Dr. Gulshan Sharma Postdoctoral Research Fellow, Supervisor: R.C. Bansal, Power Group, Electrical Electronics and Computer Engineering, University of Pretoria, South Africa from August 01, 2015 to August 04, 2016.

PhD Thesis Supervision

1. T. G. Hlalele, Risk–Constrained Stochastic Economic Dispatch and Demand Response with Maximal Renewable Penetration under Renewable Obligation, University of Pretoria, supervisors: Raj Naidoo, R.C. Bansal, J. Zhang, in examination process.
2. T. Mbungu, “Smart Energy Coordination for a Microgrid, University of Pretoria supervisors: R.C. Bansal and Raj Naidoo, in examination process.
3. I. Mohamed, “Fault-ride-through capability at wind power plant interfacing a three-phase generator to a dc-bus”, University of Pretoria, supervisors: M.N. Gitau and R.C. Bansal, in examination process.

4. C. Lupangu, "Optimal energy management of grid-tied photovoltaic hybrid generation with battery storage in competitive energy market", University of Pretoria, supervisor: R.C. Bansal, in examination process.
5. Ravita Prasad, "Long Range Energy Planning for Fiji Islands", The University of South Pacific, Suva, Fiji, supervisors: A. Raturi and R.C. Bansal, 2020.
6. Amit Kunwar, "Control and Issues of Stability of Power Networks with High Wind Penetration", Murdoch University, Australia, supervisors: F. Shahnian, G.M. Shafiullah, and R.C. Bansal, 2019.
7. Ranjay Singh, "Multi Criterion Optimization Of Isolated And Grid Connected Hybrid Renewable Energy System Using Reformed Electric System Cascade Analysis", University of Pretoria, Supervisor: R.C. Bansal, 2019.
8. P. F. Le Roux, "Synchronized Phasor Measurement in Power Systems", University of Pretoria, supervisor: R.C. Bansal, 2018.
9. D. H. Tungadio, "Optimal Control of a Renewable Energy Sources Connected to the Grid", University of Pretoria, Supervisor: R.C. Bansal, 2018.
10. T. Adefarati, "Reliability Analysis of Distribution Power System with Integration of Distributed Generators", University of Pretoria, Supervisor: R.C. Bansal, 2018.
11. T. Madiba, "Optimal Control of a Micro grid under Frequency load shedding scheme", University of Pretoria, supervisor: R.C. Bansal, 2018.
12. P.T. Manditereza, "Protection Algorithm for the Future Distributed Generation Integrated Distribution Network", University of Pretoria, Supervisor: R.C. Bansal, 2017.
13. K. Musasa, "HVAC Grid with HVDC Link Connection Performance Investigation", University of Pretoria, supervisors: M.N. Gitau and R.C. Bansal, 2017.
14. V. Dlamini, "A Non-Intrusive Motor Efficiency Estimation Technique", University of Pretoria, supervisors: R.C. Bansal and R. Naidoo, 2016.
15. Duong Quoc Hung, "Distributed Generators for Energy Loss Reduction Considering Practical Scenarios", University of Queensland, Australia, supervisors: N. Mithulananthan and R.C. Bansal, 2014.
16. V. Kumar, "Development of Matrix Converter Interfaced Permanent Magnet Synchronous Generator for Wind Energy Conversion System", supervisors: R. R. Joshi and R. C. Bansal, College of Technology and Engineering Maharana Pratap University of Agriculture & Technology Udaipur, India, 2014.
17. Rakibuzzaman Shah, "Dynamic Voltage Stability Assessment of Real Power System with Large Scale Integrated Photovoltaic Generator", University of Queensland, Australia, supervisors: N. Mithulananthan and R. C. Bansal, 2014.
18. Xingrang Liu, "Optimizing Boiler Combustion Based on Online Combustion Simulation", University of Queensland, Australia, supervisors: R. C. Bansal (Principal Advisor) and George Picoto (Stanwell Corporation), 2013.
19. Muhammad Bachtiar Nappu, "Study on Congested Power System in Deregulated Environment", University of Queensland, Australia, supervisors: T. K. Saha and R. C. Bansal (Associate Supervisor), 2013.
20. Mohammad Radzi Nur Hanis, "Advanced Transmission Service Charges Methodologies in Deregulated Electricity Market Environment", University of Queensland, Australia, supervisors: R. C. Bansal (Principal Advisor) and Z.Y. Dong, 2012.
21. Steven Kong, "Advanced Control and Analysis of Renewable Energy Systems", The University of Queensland, Australia, supervisors: R. C. Bansal (Principal Advisor), Z. Y. Dong, and David Cornforth (CSIRO), 2011.
22. Giridhar P. Kini, "Performance Analysis of Three-Phase Induction Motors Driving Centrifugal Pumps Loads Under Varying Supply Conditions", Manipal Institute of Technology, Manipal, India, supervisors: R. C. Bansal (Principal Supervisor) and R. S. Aithal, 2007.

PhD Thesis Supervision: In Progress

23. M. Slabbert, “Protection of Distribution Systems”, University of Pretoria, Supervisors: Raj Naidoo, R.C. Bansal, date of start March 2016.
24. M. Senatla, “Cost effective way of implementing the distributed energy resources into the current grid”, University of Pretoria, Supervisors: R.C. Bansal, Raj Naidoo date of start March 2016.
25. N. M. Moyo, “Fault Analysis of 25 kV AC Auto-Transformer Paralleling (APS) Traction Power Supply Systems”, University of Pretoria, Supervisors: R.C. Bansal, date of start Jan 2017.

Masters Thesis Supervision: Completed

1. B. , “Design and Operational Challenges of a 8 MW Horizontal Axis offshore Wind Turbine”, University of Pretoria, supervisor: R.C. Bansal, in examination process.
2. K. Nghitevelekwa, “Solar PV systems at transmission level”, University of Pretoria, supervisor: R.C. Bansal, 2019.
3. J.R. Calitz, “The impact of battery electric vehicles on the long term least cost electricity mix: The South African case study”, University of Pretoria, supervisor: R.C. Bansal, 2019.
4. T. Mbungu, “Real time electricity pricing optimization based on demand management for commercial buildings, supervisors: R. Naidoo, R.C. Bansal, 2018.
5. Miriam Thopil, “Optimal Placement and Sizing of Distributed Generators, University of Pretoria, supervisors: R.C. Bansal, L. Zhang, 2017.
6. R. van der Walt, “PV based Distributed Generation Power Systems Protection”, University of Pretoria, supervisors: R.C. Bansal, R. Naidoo, 2017.
7. F. Roos, “Reactive Power Compensation in coal mines”, University of Pretoria, supervisor: R.C. Bansal, 2017.
8. M. J. Slabbert, “A performance Evaluation of Voltage Sag Tracking Algorithms for Dynamic Voltage Restorer application”, University of Pretoria, supervisors: R. Naidoo and R.C. Bansal, 2015.
9. R.S.M. Thomas, “Optimizing the Number and Position of Reclosers on a Medium Voltage Distribution Line to Minimise Damage on Equipment”, University of Pretoria, supervisors: R. Naidoo and R.C. Bansal, 2015.
10. Robin Naidoo, “A market approach to balancing services pricing”, The University of the Pretoria, South Africa, supervisors: Raj Naidoo and R.C. Bansal, Aug. 2013.
11. H. Y. Yu, “Impact of wind generators connected to a small power system”, The University of Queensland, Australia, supervisor: R.C. Bansal, 2010.
12. R. Balakrishnan, “Advanced control of Steam Power Plants”, The University of Queensland, Australia, supervisors: R.C. Bansal, 2009.
13. L. Liu, “Load frequency control analysis”, The University of Queensland, Australia, supervisor: R.C. Bansal, 2009.
14. A. Dadvar, “Some of the analysis and energy bench marking of modern efficient buildings”, The University of Queensland, Australia, supervisor: R.C. Bansal, 2009.
15. M. Zhu, “Modelling, analysis and control of wind power systems”, The University of Queensland, Australia, supervisor: R.C. Bansal, 2009.
16. T. Y. Hoo, “Analysis, simulation and control of wind power systems”, The University of Queensland, Australia, supervisor: R.C. Bansal, 2009.
17. J. Zichu, “Automatic Control of Boiler Systems”, The University of Queensland, Australia, supervisor: R.C. Bansal, 2009.
18. F. P. P. Arturo, “Steady State Analysis of Flexible AC Transmission Systems (FACTS)”, The University of Queensland, Australia, supervisor: R.C. Bansal, 2009.

19. S. Yi, “Electricity Market Price Forecasting”, The University of Queensland, Australia, supervisor: R.C. Bansal, 2008.
20. R. Prasad, “Assessment and Analysis of Wind Resource Data in Fiji”, The University of the South Pacific, Suva, Fiji, supervisors: R.C. Bansal (Principal supervisor) and Makereta Sauturaga, 2008. Student was awarded Gold Medal for her thesis work.

Masters Thesis Supervision (in progress)

1. G. Masuku, “Impact of Ultra HVDC Transmission Integration on Power System Stability - Case Study: Inga III Transmission Solution”, University of Pretoria, supervisor: R.C. Bansal, date of start June 2018.
2. U. Heidman, “Power System Restoration to the South African Power Grid after a Blackout”, University of Pretoria, supervisor: R.C. Bansal, date of start Feb. 2017.
3. S. Wayiti, “Grid Integration Modelling of Renewable Energy Plants and their Impact on the Grid Stability”, University of Pretoria, supervisor: R.C. Bansal, date of start Jan. 2017.
4. N. R. Nkosi, “Small Signal Stability and Transients Enhancement on Large Scale Wind Power Using Sliding Mode Control”, University of Pretoria, supervisor: R.C. Bansal, date of start Jan. 2017.
5. N. O. Nobela, “Power Quality Compatibility of Wind Energy Conversion Systems with the Utility Grid”, University of Pretoria, supervisor: R. Naidoo and R.C. Bansal, date of start Jan. 2020.

Introduction to Research (EIN 732) Honors Supervision University of Pretoria

S. No	Name of student	Title	Year
1	N.A. Kalala	Energy management and control of large-scale grid connected wind/battery system for transient stability enhancement	2018
2	A. Biju	Analysis of uniform and non-uniform shading on the efficiency and power output of a PV panel	2018
3	S.J. Lehloa	Feasibility study of using distributed prosumer batteries for balancing power supply and demand	2017
4	U. Heideman	Power system restoration simulation system for system blackout scenarios using DigSilent Power Factory	2016
5	I.T. Gaotshabege	Distribution network planning and design in the realm of distributed generation	2016
6	M. Simelane	Smart grid for isolated residential areas	2016
7	M.S. Thopil	Optimal placement and sizing of a photovoltaic system in a residential area in South Africa	2015
8	T.M. Mphahlele	Heat ventilation and air conditioning energy consumption optimization in a multi-zone building	2015
9	H.L.R. van der Walt	PV based distributed generation power system protection	2015
10	P.K.K. Masembe	Smart Grids: framework and implementation	2015
11	Johan van Staden	Control aspects of combining PV to PEM electrolyser interfacing methods	2014
12	N.O. Nobela	Power quality compatibility of wind energy conversion systems with the utility grid	2014
13	F. Roos	Power Factor correction	2014
14	Q. Lolwana	Smart grid technology take-off in Southern Africa	2014
15	M. Zubane	Optimal sampling plan for accurate water consumption estimations in water balance calculations	2013
16	G. Mahlangu	Impact of wind turbine flicker on the power grid	2013

EPR 400 Project Supervision University of Pretoria

S. No	Name of student	Title	Year
1	G. Lisomona	Design and Implementation of differential relay for protection of single phase transformer	2018
2	N.G. Mamaru	Small scale photo-voltaic (PV) generation integration to the distribution systems	2018
3	P.A. Manganyi	Design of a renewable distributed generation system	2018
4	T.U. Mnisi	Design of non-unity power factor operation PV system to improve fault ride through capability	2018
5	TK. Mokoena	Design and operation of renewable energy integration of power system to meet grid code requirements	2018
6	N. Mtirara	Wind power integration to the grid	2018
7	M.G.P. Phasa	Smart Grid applications in distribution systems	2018
8	P.N. Zwane	Performance of a stand-alone system using an Induction machine	2018
9	M.H. Mphephu	Design and cost benefit analysis of solar tracking PV system wrt fixed mounting system	2018
10	J.M. Masoeu	Design and implementation of Control Strategy of Battery Energy Storage Systems (BESS) with Penetration of Renewable Energy Resources	2018
11	S. Gwiliza	Wind power integration to the grid	2017
12	R.F. Issuf	Design of a small-scale grid-tied photovoltaic system	2017
13	O. Leeuw	Design of a smart energy meter	2017
14	L.B. Eleni	Single phase transformer differential relay	2017
15	H.M. Becker	Performance analysis of a permanent magnet synchronous generator	2017
16	M. Dywili	Design of a DC link system for small offshore wind farms	2017
17	B.M. Methibela	Charging and discharging strategy of a hybrid energy storage system	2017
18	I. Mkhonza	Design of an uninterruptible power supply system	2017
19	S. J. Nortze	Hybrid Power Systems	2017
20	R.M. Ramoroka	Converters Control for AC & DC Microgrid	2017
21	K.S. Mabedlhe	Distributed Generation System	2017
22	P.M. Mphahlele	Single phase transformer differential relay	2016
23	M.R. Sebetoa	Power system control of hybrid power systems	2016
24	D.C. Holder	Design of a small-scale photovoltaic system	2016
25	O.P. Angwech	Design of a DC link system	2016
26	P.L. Pitsoane	Wind power integration to the grid	2016
27	K. Maneka	Distributed generation system	2016
28	C.D. Chadzimura	Design of an uninterruptible power supply system	2015
29	N. P. Khoza	Design of a renewable energy distributed generation system	2015
30	B. Brandon	Design and analysis of wind power integration to the grid	2015
31	K. R. Schneider	Small scale photo-voltaic generation integration to the distribution systems	2015
32	L. M. Lukhozi	Wind energy conversion system for DC loads	2015
33	M.S.L. Nozakuzaku	Design of a DC link system for an offshore wind farm	2015
34	T.R. Moremi	Performance analysis of an induction machine used as an induction generator	2015
35	P. S. Kopa	Distributed generation system	2014
36	J. Koshy	Wind power synchronization to the grid	2014
37	H. Rossouw	Small scale photovoltaic generation integration to the distribution system	2014
38	S.B. Sedibane	Power system control of a hybrid power system	2014
39	M.K. Tshwane	Performance Analysis of Induction Machine Used as Induction Generator	2014
40	G. J. Vermaak	Design of an advanced smart meter	2014
41	J.A. Maloney	Design of a load monitoring system for an office, room or building	2013
42	T.M. Mamabolo	Power system fault analysis	2013
43	E.M. Molefi	Design of a standby power control for residential homes	2013
44	T.P. Mothibeli	Hot water stratification and its application on electric geyser	2013
45	L.L. Mulaudzi	Optimal design of a water pumping system	2013

Honors Thesis Supervision: BE (ENGG. 4801/ENGG. 4802): UQ

S. No	Student	Project Title
1	Alexander Eric	Operational, maintenance, control strategies of large turbo generators
2	Hoang Thao	Power system transient stability analysis
3	Koh Ruishen	Control of distributed generation systems
4	Li Qiran	Analysis and control of induction generators
5	Nagarajan Dhwaraknath	Control of power plant systems
6	Ng Yew Fong	Wind power system analysis
7	Shenh Hao Foo	Centralized standby power systems
8	Justin Elderred	Modelling and control of wind generators
9	Wee Hong Lau	Wind turbine modelling for grid integration studies
10	Kotaniemi, Sakari	Steady state voltage supply in a distribution system
11	Sim Yan	A study of ilab implementation in electrical machine experiments
12	Manuel, Udayan	Design and implement a trial SCADA Security Honey pot
13	Jia Zi Chu	Wind power systems
14	Lim Hong Ji	Reactive power/voltage control in power systems
15	Liong Augustine	Dynamic modelling of power output of photovoltaic arrays in Brisbane
16	Bakshi, Chetan	Improving dynamic performance using TCSC
17	Lee, Kit Wai	Development of machine lab experiments through ILab and Matlab/Simulink
18	Sood, Udit	Flexible AC Transmission Systems (FACTS) analysis
19	Weerasekara, Iranga	Power Swing Blocking in Queensland Transmission Network
20	Abdul Karim, Fahusul Ameen	Voltage control of Wind farm using IPFC
21	Hu, Yu Jie	Power control of wind farm using IPFC
22	Sy, Michael	A current review and analysis of power generation in Queensland
23	Teng, Jing Yi	Energy Storage for wind Applications
24	Kusrutsing, Akeesh	Load Shedding and Frequency Control for Power System Stability
25	Nakhla, Timothy	Retrofitting IEC61850 into an ENERGEX brownfields substation
26	Smith, Michelle	Protection of Transformers
27	Yap, Kok Sen	Grid Integration Control of Wind Energy Conversion Systems (DFIG)
28	Yesberg, Russell	61850 Test Harness
29	Richard Graham	Voltage sags in Distribution Systems
30	Patrick Madden	Excitation System Design and Maintenance for Synchronous Turbo-Generators
31	Trevor Stephan	Migration from AutoCAD to AutoCAD electrical
32	Samuel Riggs	Wind Power Systems Stability Analysis

Undergraduate Thesis Supervision USP

Supervised more than 20 undergraduate students (EN 300) for their thesis work.

Undergraduate Thesis Supervision at BITS

Supervised more than 30 undergraduate students (EN 300) for their thesis work.

Keynote Speaker/Conference Chairs/Conference Committee Member/Workshop Attended

1. Keynote, Chaired a session for IEEE International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control" (PARC 2020), Feb. 28-29, 2020, GLA, Mathura, India.
2. Attended 8th IET-RPG conf., Shanghai, China Oct 24-25, 2019.

3. Chaired a session for IEEE International Conference on Artificial Intelligence - AICAI'19- Feb. 4-6, 2019, Amity University Dubai, UAE.
4. Attended 20th Water, Energy, Technology and Environment (WETEX), Oct. 23-25, 2019, Dubai, UAE.
5. Presented papers and chaired sessions for 10th International Conference on Applied Energy (ICAE2018), Aug 22-25, 2018, Hongkong.
6. Attended IEEE PES GM Conf. Aug 5-9, 2018, Portland, USA.
7. Presented papers and chaired session for 7th IET-Renewable Power Generation Conference, Sep. 26-27, 2018, Copenhagen, Denmark.
8. Attended IEEE PES & IAS Power Africa Conference Cape Town June 26-29, 2018.
9. Keynote address on Smart Grid in IEEE WIECON-ECE conference, Dehradun, India, Dec. 18-19, 2017.
10. Presented paper Attended 6th IET-Renewable Power Generation Conference, Oct 19-20, 2017, Wuhan, China.
11. Attended SAIEE Smart Grid Conference, Johannesburg, South Africa, Sep. 19-21, 2017.
12. Presented papers and Chaired sessions for 9th International Conference on Applied Energy (ICAE2017), Aug 22-14, 2017, Cardiff, UK.
13. Attended IEEE PES GM Conf. July 16-20, 2017, Chicago, USA.
14. Attended SAUPEC Conference, Stellenbosch, South Africa, Jan 30-Feb 1, 2017.
15. Attended IEEE Industrial Electronics Conference (IECON), Oct 24-27, 2016, Florence, Italy.
16. Presented papers and Chaired sessions for 8th International Conference on Applied Energy (ICAE2016), Oct 8-11, 2016, Beijing, China.
17. Presented paper Attended 5th IET-Renewable Power Generation Conference, Sep 21-23, 2016, London.
18. Attended SAIEE Smart Grid Conference, Johannesburg, South Africa, Feb 23-25, 2016.
19. Attended conference and Chaired sessions for 9th IFAC symposium on Control of Power and Energy Systems, December 9-11, 2015, Indian Institute of Technology, Delhi, India.
20. Attended IEEE PES GM Conf. July 26-30, 2015, Denver, USA.
21. Attended conference, presented papers and Chaired sessions for Third Southern African Solar Energy Conference (SASEC2015), 11 –13 May 2015, Kruger National Park, South Africa.

22. Attended conference, presented papers and Chaired sessions for 7th International Conference on Applied Energy (ICAE), March 28-31, 2015, Abu Dhabi, UAE.
23. Attended conference, presented papers and Chaired session for 3rd Renewable Power Generation Conference (RPG), 24 – 25 September 2014, Ramada Naples, Italy.
24. Attended IEEE PES GM Conf. July 27-31, 2014, Washington DC, USA.
25. Attended 19th IFAC World Congress, Cape Town, South Africa, Aug 24-29, 2014.
26. Attended two days conference on Smart Grid, Organized by Business Sweden, Johannesburg, South Africa, Oct 10-11, 2013.
27. Attended conference Australasian Universities Power Engineering Conference (AUPEC 2013), Tasmania – Australia, 29 Sept. -3rd Oct. 2013.
28. Attended a conference on Fifth International Conference on Applied Energy (ICAE), July 1-4, 2013, University of Pretoria, South Africa.
29. Delivered a seminar on addressing some of the challenges of power generation of conventional and renewable energy sources, University of Pretoria, South Africa March 13, 2013.
30. Expert lecture in seminar organized by PES@ECE, NUS and IEEE PELS and IAS Joint Chapter at National University Singapore, Jan. 26, 2012.
31. Delivered an expert lecture at University of Petroleum & Energy Studies, Dehradun, India. Jan. 19, 2011. This university has 100 kW power generation facilities from PV system.
32. Delivered an Expert Tutorial in the 34th National System Conference, NSC, 2010 organised by National Institute of Technology, Karnataka, India during Dec. 10-12, 2010.
33. Chaired a session, attended conference and presented a paper in the IEEE Joint International Conference on Power Electronics, Drives and Energy Systems (PEDES) & 2010 Power India, Dec. 20-23, 2010.
34. Chaired a session, attended conference and presented a paper in the All India Seminar on Intelligent Motion Control of Electrical Drivers, Organized by the Institution of Engineers (India), Udaipur in association with Department of Electrical Engineering, College of Technology & Engineering, Udaipur, India, Dec. 25-26, 2010.
35. Delivered an expert lecture on Recent Trends in Distributed Generation in the department of Electrical Engineering, IIT Delhi, on the behalf of PES-IAS & PELS-IES Chapters, IEEE Delhi, Dec. 24, 2010.

36. Delivered an expert lecture on Internet Laboratories at Yagyavalkya-Institute-Technology (YIT) and Poornima Group of Colleges, Jaipur, India, on Dec. 14, 2010. This was published in Jaipur Newspapers of 14th Dec. 2010, in Rajasthan Patrika and City Bhaskar, Jaipur.
37. Attended Global Conference on Power Control and Optimization, Gold Coast, Australia, 2-4, February 2010,
38. International & National Technical Review Committee member for 1st International Conference on Advances in Energy Conversion Technologies (ICAECT 2010), Jan 07 - 10, 2010, Department of Electrical and Electronics Engineering, Manipal Institute of Technology, Manipal University, Manipal, India.
39. Invited Talk- Department of Electrical Engg., Institute of Technology, Banaras Hindu University, (U.P.), India, Dec. 2008.
40. Attended Power System of 21st Century-Variou Issues and Possible Solutions: Organized by IEEE Delhi Chapter Power Engineering Society & Industry Applications Society (IEEE-PES/IAS) and Department of Electrical Engineering, IIT Delhi, Nov. 6-7, 2004.
41. Attended Recent Advances in 'FACTS' Technology and Applications, ISTE-AICTE Short term training programme, Delhi College of Engineering, Delhi, July 23- Aug. 3, 2001.
42. Attended Small Hydro Power-State of the Art: IREDA sponsored Workshop, Centre for Energy Studies, IIT Delhi, Dec. 1998.

THESIS EXAMINED

PhD

1. IEC61850 Standard-Based Load Shedding Schemes for Power Networks M.E.S. Mnguni Mthunzi, Cape Peninsula University of Technology (CPUT), South Africa, 2018.
2. Study and design of different control strategies for automatic generation control of power system, I. Kasireddy (2015RSEE002) on topic: NIT Jamshedpur (India), 2018.
3. Design on Load Frequency Controller for Interconnected Power System under Deregulated Environment, R.K. Mandal, NIT Patna, 2018.
4. Multi-objective Network Reconfiguration in Contemporary Distribution Systems, Praveen Kumar, MNIT Jaipur (India), 2018.
5. Voltage Stability Analysis and Congestion Management, Saurabh Ratra, MNIT Jaipur (India), 2018.
6. Formulation of a Capacity Mechanism for the Southern African Power Pool (SAPP) for Sustained Long-Term System Adequacy, J.W. Wright, WITS, South Africa, 2018.
7. Distribution System Analysis with Distributed Generation and D-Facts Integration, Atma Ram Gupta, NIT, Kurukshetra, India, 2017.
8. Protection Issues of Grid Connected Distributed Generation, Pankaj Gupta, NIT, Kurukshetra, India, 2017.
9. Development of Distributed Control Schemes for Energy Storage Systems Using Distribution System Load Patterns, D.D. Sharma, IIT Kanpur, India, 2016.

10. Development of State of Charge Estimation Method and Power Optimization Strategies for Hybrid Electric Vehicles, BITS Pilani, India, 2016.
11. Analysis of Radial Distribution Systems with Dispersed Generation, S. P. Ghanegaonkar, Savitribai Phule Pune University, India, 2016.
12. Optimal Energy Control of a Grid Connected Solar-Wind based Electric Power Plant, M. W. Siti, University of KwaZulu-Natal, South Africa, 2016.
13. Performance Improvement of Distribution Systems Considering Distributed Generations, S. R. Gampa, Indian Institute of Technology, Kharagpur, India, 2016.
14. Certain Control Strategies for Wind Driven Induction Generators at Low Speeds, Venkata Rama Raju Rudraraju National Institute of Technology, Tiruchirappalli, India, 2016.
15. Hybrid State Estimation and Enhanced Monitoring of Power Systems using Synchrophasors, S. K. Malik, Indian Institute of Technology, Kanpur, India, 2015.
16. Reliability Evaluation of Phasor Measurement Unit, M. Cherukuri, Birla Institute of Technology, Mesra, Ranchi, India, 2015.
17. Voltage and Frequency Control in Autonomous DFIG Based Wind Energy Systems, R.D. Shukla, NIT Allahabad, India, 2015.
18. Multi-objective optimal placement and sizing of distributed generators using meta-heuristic techniques, C. Yammani, NIT Warangal, India, 2015
19. Distributed Generation Planning in Power Distribution Systems, R.P. Payasi, NIT Allahabad, India, 2015.
20. A Comprehensive Analysis of Auxiliary Power in Coal-Fired Power Plants in India, R. P Mandi, NIT Surathkal, India, 2015.
21. Intelligent Control of Energy Storage Devices for Power System Applications, S. J. Iqbal, NIT Srinagar, India, 2014.
22. Optimal location of Substations, Daljit Singh, NIT Hamirpur, India, 2014.
23. Multi-objective dispatch by stochastic weight trade-off particle swarm optimization, S. Chalermchaiarbha, Asian Institute of Technology, April 2014.
24. Microgrid Planning in Distribution System, K. Buayai, Asian Institute of Technology, April, 2013.
25. Design of Wind Dominated Hybrid Remote Area Power Supply Systems. N. Mendis, University of Wollongong, Australia, 2012.
26. Voltage Regulation of Power Distribution System with Interconnected Distributed Generators, Shivarudraswamy, National Institute of Technology, Surathkal, India, 2012.
27. Power Systems Security Assessment and Enhancement, H. M. Sayed Khattab, Ain Shams Univ. Cairo, Egypt, 2012
28. Reduced Semiconductor Energy Conversion Systems, Zhang Lei, Nanyang Technological University, Singapore 2012
29. Distribution System Performance Improvement, Nikhil Gupta, MNIT Jaipur (India), Feb. 2012.
30. Design and Development of Intelligent Computational Techniques for Power Quality Data Monitoring & Management, Zahir Javed Pracha, Victoria University, Australia, 2011.
31. Genetic Algorithm Based Optimization Techniques to Determine Location and Rating of FACTS Controllers in Transmission & Distribution Systems- A Case Study Approach, S C. Byalihal, Visvesvaraya Technological University, Belgaum, India, 2011.
32. Voltage Stability Assessment and Margin Enhancement with FACTS Devices, Atul Phadke, MNIT Jaipur (India), June 2010.
33. Fuzzy Logic and Wide Area Control for Low frequency Oscillation Damping in Power System, K. Prasertwong, Asian Institute of Technology, Thailand, Nov. 2009.

34. Photovoltaic Source Modeling and Prediction of Maximum Power Point Using Neural Networks, H.R. Kamath, Manipal University Manipal, Aug. 2008.

Masters

1. Mitigation of Power Quality Problems by Unified Power Quality Conditioner Using Kalman Filter, Nabeel Saleh Al Awadhi, University of Sharjah, 2020.
2. Development of a Load-Shedding Algorithm for Enhanced Provisioning of Electric Power, N.P. Memane, TUT Tshwane, South Africa, 2018.
3. Investigation of Interoperability of IEC 61850 Protection Functions, N. R. Mguzulwa, Cape Peninsula University of Technology (CPUT), South Africa, 2018.
4. Feeder Reconfiguration Scheme with Integration of Renewable Energy Sources Using a Particle Swarm Optimisation Method, G.F.N. Djeepkop, Cape Peninsula University of Technology (CPUT), South Africa, 2018.
5. Optimal Placement of a Distributed Generator on a Medium Voltage Distribution Feeder, M.T. Lekhuleni, University of Johannesburg, 2016.
6. Investigation and Mitigation of Technical Electric Power Losses within City Power Distribution Network: South African Case Study, S.R. Bakana, University of Johannesburg, 2016.
7. A Roadmap for Navigating the Institutional Complexities of Implementing Small-Scale Hydropower Projects for Rural Electrification in South Africa, Beate Gudrun Scharfetter, University of Pretoria, 2016.
8. Performance analysis of a protection scheme based on P-Class synchrophasor measurements, M.E. Mthunzi, Cape Peninsula University of Technology (CPUT), South Africa, 2016.
9. The Impacts of Mutual Coupling between Transmission Lines on Impedance Relay Protection Settings, K. Nofuya, TUT Tshwane, South Africa, 2016.
10. Demand Side Management in Smart Grid Focusing in Domestic Households in South Africa, T. Main, University of Cape Town, South Africa, 2015.
11. Load Sharing in Microgrids with Renewable Energy Sources, Md. A. Barik, University of New South Wales, Australia, Oct 2014.
12. Optimal Measurement and verification plan in an Energy Efficiency Project for a Ferrochrome Plant, T. G. Hlalele, University of Pretoria, 2014.
13. Investigation on interoperability of IEC 61850 standard-based protection functions in multi-vendor intelligent electronic devices, N. Mguzulwa, Cape Peninsula University of Technology (CPUT), South Africa, 2016
14. Application of series compensation to improve the voltage stability and power quality of wind farms, T.F. Orchi, University of New South Wales, Australia, 2013.
15. Designing hybrid mini-grid systems with a focus on remote rural electrification in Fiji, P. Dutt, University of New South Wales, Australia, 2012.
16. A method of Voltage Tracking for Power System Applications, J. Visser, University of Pretoria, South Africa, May 2010.

Books/Books Proposal Reviewed

1. Introduction to Energy Technology: Depletable and Renewable, Wiley 2018.
2. Coal-fired Electricity and Emissions Control Efficiency and Effectiveness, Elsevier, 2015.
3. Deregulation of Power Sector, CRC Press, 2013
4. Technologies for Electrical Power Conversion, Efficiency and Distribution: Methods and Processes, IGI Global, 2009.

5. Operation of Market-Oriented Power Systems, authored by Y.H. Song and X.F. Wang, Springer-Verlag London, 2003, *Int. Journal of Engineering Intelligent Systems*, Vol. 13, No. 3, Sept 2005, pp. 195-196.

External Examiner/Evaluation for exam papers

1. Moderator for Exam Papers Power System Analysis, Operation & Control (EEE4116F) Department of Electrical Engineering, University of Cape Town, South Africa.
2. Moderator for Exam papers, Final year BEngg projects, Electrical & Computer Engineering Department, Namibia University of Science and Technology, Namibia, 2016-2020.

JOURNAL REVIEWER

1. IEEE Transactions on Energy Conversion
2. IEEE Transactions on Power Systems
3. IEEE Transactions on Industrial Electronics
4. IET-Renewable Power Generation
5. IET-Generation, Transmission & Distribution
6. Applied Energy
7. Electric Power Components and Systems
8. International Journal of Electrical Power and Energy Systems
9. Electric Power System Research

CONFERENCE REVIEWER/Committee Member/Editor/Associate Editor

- IET-Renewable Power Generation; 2014, 2015, 2016, 2017, 2018
- International Conference on Applied Energy 2013, 2014, 2015, 2016, 2017, 2018
- Associate Editor, IEEE PES Innovative Smart Grid Technologies – Asia Conf., Nov. 28-Dec. 1, 2016, Melbourne, Australia.
- Technical Co-chair for SAIEE Smart Grid Conference, Johannesburg, South Africa, Feb 23-25, 2016.

PROFESSIONAL SOCIETY MEMBERSHIP

1. Fellow, IET, UK; Membership #FIET/1100242677 selected on 26th April 2012.
2. Fellow Engineers Australia, #4182411, 24th Oct. 2012.
3. Senior Member, IEEE, USA, (Membership #41276000), 5th May 2003, and member of Power Engineering Society.
4. Fellow, Institution of Engineers (India), F-1177202 selected on 28/03/2013.
5. Fellow, South African Institute of Electrical Engineers, F-120411, selected on 12 July 2018.
6. Life member of Indian Society of Technical Education (ISTE), New Delhi, India, (Membership #LM 32944), since 2002.
7. Member of IEEE Industrial Electronics Society Technical Committee on Renewable Energy Systems.
8. Chartered Professional Engineer (CEngg) IET-UK # 603719, 13th May 2013.

JOURNAL EDITORIAL

1. Regional Editor, IET-Renewable Power Generation (<http://digital-library.theiet.org/content/journals/iet-rpg>)
2. Editor, Editorial Electric Power Components and Systems (A Taylor and Francis Journal) (<http://www.tandfonline.com/toc/uemp20/current>)

3. Associate Editor, IEEE Systems Journal
<https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=4267003>
4. Associate Editor, Technology and Economics of Smart Grids and Sustainable Energy, Springer
<http://www.springer.com/energy/systems,+storage+and+harvesting/journal/40866>
5. Associate Editor, IEEE Access (2014-2016)
http://www.ieee.org/publications_standards/publications/ieee_access.html
6. Associate Editor (AE) IEEE Trans. Industrial Electronics (2008-12) (<http://tie.ieee-ies.org/>) (Received appreciation for services to the journal and outstanding contribution to its ranking)
7. Editor IEEE Trans. Energy Conversion (2005-12)
<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=60>

Some Statistics about Publications:

Total Publications: over 300
Books: 9, Book Chapters: 18, Journals 198, Conferences:
97

My Google citation is over 9300, h-index 43.

More than 65% publications are in journals. I have published in disciplines' highest quality journals which include:

Renewable and Sustainable Energy Reviews: Impact factor 10.6
IEEE Trans. Smart Grid, Impact factor 10.5
Applied Energy: Impact factor 8.4
IEEE Transactions on Industrial Electronics: Impact factor 7.5
Energy Conversion and Management: Impact factor 7.2
IEEE Transactions on Industrial Informatics: Impact factor 7.4
IEEE Transactions on Power Systems: Impact factor 6.8
IEEE Transactions on Energy Conversion: Impact factor 4.6
IEEE Systems Journal: Impact factor 4.5
Int. Journal of Electrical Power and Energy Systems: Impact factor 4.4
IEEE Access, Impact factor 4.1
IET-Renewable Power Generation: Impact factor 3.6
IET-Generation, Transmission & Distribution: Impact factor 3.2
Electric Power Systems Research: Impact factor 3.0

LIST OF PUBLICATIONS

BOOKS

- [1] R.C. Bansal and A.F. Zobaa (Ed), “Handbook of Renewable Energy Technology and Systems, World Scientific Publisher, UK, in Press scheduled for publication in 2020.
- [2] V. Kumar, R. K. Behra, D. Joshi, and R.C. Bansal, “Power Electronics, Drives, and Advanced Applications”, CRC, Press, New York, USA, 2020.
- [3] A.F. Zobaa, S. H. E. Abdel Aleem, A. Y. Abdelaziz, and R.C. Bansal, (Ed.), “Decision Making Applications in Modern Power Systems”, Academic Press, Elsevier, London, UK, 2020.
- [4] R.C. Bansal, “Power System Protection in Smart Grid Environment”, CRC Press, New York, USA, 600 pages, 2019.
- [5] R.C. Bansal (Editor), “Handbook of Distributed Generation: Electric Power Technologies, Economics and Environmental Impacts”, Springer, pages 800, Cham, Switzerland, 2017.
- [6] X. Liu and R.C. Bansal, “Thermal Power Plants: Modelling, Control and Efficiency Improvement”, CRC Press, New York, USA, July 2016.
- [7] A.F. Zobaa and R.C. Bansal (Ed.), “Handbook of Renewable Energy Technology, World Scientific Publishing Singapore, 2011.
- [8] R.C. Bansal and T.S. Bhatti, “Small Signal Analysis of Isolated Hybrid Power Systems: Reactive Power and Frequency Control Analysis”, *Alpha Science International, Oxford, U.K. & Narosa Publishers*, New Delhi, India, 2008, ISBN: 978-81-7319-799-4, pages 233.
- [9] T.S. Bhatti, R.C. Bansal, and D.P. Kothari (Ed.), “Small Hydro Power Systems”, *Dhanpat Rai & Sons*, India, 2004.

CHAPTER IN BOOKS

- [10] S. Barik, D. Das, and R. C. Bansal, “DG investment and allocation in active distribution networks”, Accepted for publication in *Uncertainties in Modern Power Systems*, Elsevier.
- [11] A. Saxena, R. Kumar, A. Mahmud, and R. C. Bansal, “Bidding strategies of a power producer in power market: measurement indices and evaluation”, Accepted for publication in *Uncertainties in Modern Power Systems*, Elsevier.
- [12] A. Kumar, B. Sah, A.R. Singh, Y. Deng, X. He, P. Kumar, R.C. Bansal, “Multicriteria decision-making methodologies and their applications in sustainable energy system/microgrids”, in, “Decision Making Applications in Modern Power Systems”, Academic Press, Elsevier, pp. 1-40, 2020.

- [13] M. Kumawat, N. Gupta, N. Jain, R.C. Bansal, "Jaya Algorithm Based Optimal Allocation of Distributed Energy Resources", in A. Kalam, K. R. Niazi, A. Soni, S. A. Siddiqui, A. Mundra, *Intelligent Computing Techniques for Smart Energy Systems*, Springer, Singapore, 805-814, 2020.
- [14] A. Panwar, G. Sharma, I. Nasiruddin, R.C. Bansal, "JAYA-Evaluated Frequency Control Design for Hydroelectric Power System Using RFB and UPFC", in A. Kalam, K. R. Niazi, A. Soni, S. A. Siddiqui, A. Mundra, *Intelligent Computing Techniques for Smart Energy Systems*, Springer, Singapore, 863-871, Springer, 2020.
- [15] T. Adefarati and R. C. Bansal, "Energizing Renewable Energy Systems and Distributed Generation", in *Pathways to a Smarter Power System*, Academic Press, Elsevier, pp. 29-65, 2019.
- [16] T. Madiba, R.C. Bansal, J. Justo, "Optimal Control System of Under Frequency Load Shedding in Microgrid System with Renewable Energy Resources " in *Smart Energy Grid Design for Island Countries-Challenges and Opportunities*, Springer, pp. 71-96, 2017.
- [17] K. Musasa, M.N. Gitau, R.C. Bansal, "Integrating an Offshore Wind Farm to an Existing Utility Power Network via an HVDC Collection Grid: Alternative Topology", *Handbook of Distributed Generation*, Springer, pp. 247-282, 2017.
- [18] M. N. Kabir, Y. Mishra, Z. Ledwich, Z. Xu, and R.C. Bansal, "Coordinated Operation Algorithm using Reactive Power and Integrated Battery Storage in Distribution System", in *The Handbook of Clean Energy Systems*, Johan Wiley & Sons, Vol. 5, Chapter no. 28, pp. 2891-2902, June 2015.
- [19] R.C. Bansal, "Renewable Energy Systems", in *Standard Handbook for Electrical Engineers*, Edited by H.W. Beaty, 16th Edition, McGraw-Hill, pp. 11-5-11-10, 2013.
- [20] R. Prasad and R. C. Bansal, "Economic Analysis of Wind Systems", in A. F. Zobaa and R.C. Bansal (Ed.), *Handbook of Renewable Energy Technology*, pp. 99-118, Singapore: World Scientific, 2011.
- [21] Y. Fang, R. C. Bansal, Z. Y. Dong, R. K. Saket, and J. Shakya, "Wind Energy Resources: Theory, Design and Applications", in A. F. Zobaa and R.C. Bansal (Ed.), *Handbook of Renewable Energy Technology*, pp. 3-20, Singapore: World Scientific, 2011.
- [22] R. Prasad and R. C. Bansal, "Technologies and Methods used in Wind Resource Assessment", in A. F. Zobaa and R.C. Bansal (Ed.), *Handbook of Renewable Energy Technology*, pp. 69-98, Singapore: World Scientific, 2011.
- [23] H. Mathur, N Hien, N. Mithulananthan, D. Joshi, and R.C. Bansal, "Distributed Generation: A Power System Perspective", in A. F. Zobaa and R.C. Bansal (Ed.), *Handbook of Renewable Energy Technology*, pp. 563-586, Singapore: World Scientific, 2011.
- [24] R. Prasad and R. C. Bansal, "Photovoltaic Systems", in A. F. Zobaa and R.C. Bansal (Ed.), *Handbook of Renewable Energy Technology*, pp. 205-224, Singapore: World Scientific, 2011.

- [25] Y. Mishra, Z. Y. Dong, R. C. Bansal, and S. Mishra, "Rough Fuzzy Control of SVC for Power System Stability Enhancement", in *Computational Intelligence in Power Systems*, L. Shi, Z.Y. Dong, (Editors), Springer, ISBN, 978-81-308-0366-1, pp. 31-52, 2008/2009.
- [26] P. G. Kini and R. C. Bansal, "An Intelligent Motor-Pump System", in *Intelligent Information Systems and Knowledge Management for Energy: Applications for Decision Support, Usage and Environmental Protection*", edited by K. Metaxiotis, IGI Global, 701 E. Chocolate Avenue, Hershey, PA 17033-1240, USA, ISBN: 978-1-60566-737-9, Aug. 2009, pp. 400-422.
- [27] V. Kumar, S. Kong, Y. Mishra, Z. Y. Dong, and R. C. Bansal, "Doubly Fed Induction Generators: Overview and Intelligent Control Strategies for Wind Energy Conversion Systems", in *Intelligent Information Systems and Knowledge Management for Energy: Applications for Decision Support, Usage and Environmental Protection*", edited by K. Metaxiotis, IGI Global, USA, Aug. 2009, pp. 147-178.

JOURNALS

- [28] C. Lupangu, J. J. Justo, and R. C. Bansal, "Model predictive for reactive power scheduling control strategy for PV-battery hybrid system in competitive energy market", Accepted for publication in *IEEE Systems Journal*.
- [29] I. M.O. Mohammed, M. N. Gitau, and R. C. Bansal, "Elimination of the voltage output fluctuations of a Vienna active rectifier-I integrated under unsymmetrical faults based wind power plant", Accepted for publication in *Electric Power Components and Systems*.
- [30] C. Lupangu, R.C. Bansal, A. Saha, and J. Justo, "Critical performance comparison between single-stage and two-stage incremental conductance MPPT algorithms for DC/DC boost-converter applied in PV systems", Accepted for publication in *Electric Power Components and Systems*.
- [31] D. Kumar, H. D. Mathur, S. Bhanot, and R. C. Bansal, "Modeling and frequency control of community micro-grid under stochastic wind and solar sources", Accepted for publication in *JESTECH*.
- [32] J. Lotter, R. Naidoo, and R. C. Bansal, "The effects of distributed generation on load parameters within commercial retail reticulation networks", Accepted for publication in *Journal of Energy in South Africa*.
- [33] D. Kumar, H. D. Mathur, S. Bhanot, and R. C. Bansal, "Forecasting of solar and wind power using LSTM RNN for load frequency control in isolated microgrid", Accepted for publication in *International Journal of Modelling and Simulation*.
- [34] T. Hlalele, M. Sibiyi, R. Naidoo, and R. C. Bansal, "Multi-objective economic dispatch with residential demand response programme under renewable obligation", *Applied Energy*, vol. 270, 115120, pp. 1-16, 2020.
- [35] B. Patnaik, M. Mishra, R. C. Bansal, R. K. Jena, "AC microgrid protection-a review: current and future prospective", *Applied Energy*, vol. 271, no. 115210, pp. 1-28, 2020.

- [36] D. Kumar, H. D. Mathur, S. Bhanot, and R. C. Bansal, "Modified deloading strategy of wind turbine generator for primary frequency regulation in micro-grid", *Technology and Economics of Smart Grid and Sustainable Energy*, vol. 5, no. 11, pp. 1-12, 2020.
- [37] M. Senatla, R. C. Bansal, R. Naidoo, L. Chiloane, U. Mudau, "Estimating the economic potential of PV rooftop systems in South Africa's residential sector: a tale of 8 metropolitan municipalities", *IET-Renewable Power Generation*, vol. 14, no. 4, pp. 506-514, 2020.
- [38] A. Heidari, S.S. Mortazavi, and R. C. Bansal, "Equilibrium state of a price-maker energy hub in a competitive market with price uncertainties", *IET-Renewable Power Generation*, vol. 14, no. 6, pp. 976-985, 2020.
- [39] N. Gupta, N. Patel, and R. C. Bansal, "Combined active power sharing and grid current distortion enhancement based approach for grid-connected multifunctional photovoltaic inverter", *International Trans. of Electrical Energy Systems*, vol 30, no. 3, e12236, 2020.
- [40] A. Kunwar, F. Sahania, and R. C. Bansal, "Eigenvalue-oriented dynamic stability examination to enhance the design of a microgrid hosting a cluster of inertial and non-inertial distributed generators", *IEEE Trans. Smart Grid*, vol. 11, no. 3, pp. 1942-1955, 2020.
- [41] N. T. Mbungu, R. M. Naidoo, R. C. Bansal, M. Siti, D. H. Tungadio, "Renewable energy resources and grid integration for commercial building applications", *Journal of Energy Storage*, vol. 29, no. 101385, pp. 1-11, 2020.
- [42] T. Hlalele, M. Sibiyi, R. Naidoo, and R. C. Bansal, "Dynamic economic dispatch with maximal renewable penetration under renewable obligation", *IEEE Access*, vol. 8, 2020, article no. 38794, pp. 1-15.
- [43] A. Patel, H. D. Mathur, S. Bhanot, and R. C. Bansal, "Optimum sizing of PV based UPQC-DG with improved power angle control", *Electric Power Systems Research*, vol. 182, article no. 106259, pp. 1-10, 2020.
- [44] A. Heidari, S.S. Mortazavi, and R. C. Bansal, "Stochastic effects of ice storage on improvement of an energy hub optimal operation including demand response and renewable energies", *Applied Energy*, vol. 261, article no. 114393, pp. 1-11, 2020.
- [45] P. Manditereza and R. C. Bansal, "Voltage-based protection algorithm for PV-integrated microgrids", *International Journal of Electrical Power and Energy Systems*, vol. 118, article no. 105756, pp. 1-14, 2020.
- [46] S. R. Gampa, K. Jasthi, P. Goli, D. Das, and R.C. Bansal, "Optimum sizing and placement of DGs, shunt capacitors and EV charging stations using grasshopper optimization algorithm", *Journal of Energy Storage*, vol. 27, article no. 10117, pp. 1-13, 2020.
- [47] M. Manohar, E. Koley, S. Ghosh, D. K. Mohanta, and R.C. Bansal, "Spatio-temporal information based protection scheme for PV integrated microgrid under solar irradiance intermittency using deep convolution neural network", *International Journal of Electrical Power and Energy Systems*, vol. 116, article no. 105576, pp. 1-9, March 2020.

- [48] D. Kumar, H. D. Mathur, S. Bhanot, and R. C. Bansal, "Frequency regulation in islanded micro-grid considering stochastic model of wind and PV", *Int. Trans. Electrical Energy Systems*, vol. 29, no. 9, e12049, 2019.
- [49] A. Sujil, R. Kumar and R.C. Bansal, "Multi agent based autonomous energy management system with self-healing capabilities for a microgrid", *IEEE Trans. Industrial Informatics*, vol. 15, no. 12, pp. 6280-6290, 2019.
- [50] N. T. Mbungu, R. C. Bansal, and R. Naidoo, "Smart energy coordination of autonomous residential home", *IET-Smart Grid*, vol. 2, no. 3, pp. 336-346, 2019.
- [51] N. T. Mbungu, R. C. Bansal, and R. Naidoo, "Overview of optimal smart energy coordination for microgrid applications", *IEEE Access*, vol. 7, no. 1, pp. 163063-163084, 2019.
- [52] N. Moyo, R. C. Bansal, R. Naidoo, and W. Sprong, "Line impedance measurements to improve power systems protection of the gautrain 25 kV autotransformer traction power supply system", *IEEE Access*, vol. 7, pp. 136962-136974, 2019.
- [53] R. Thomas, V. Z. Stuart, R. Naidoo, and R. C. Bansal, T. Mbungu, and M. Bipath, "Recloser based energy exposure assessment of a distribution network", *Journal of Energy in Southern Africa*, vol. 30, no. 4, pp. 2019.
- [54] O. N. Nobela, R. C. Bansal and J. Justo, "Power quality compatibility of wind energy conversion systems with the South African utility grid", *Renewable Energy Focus*, vol. 31, pp. 63-72, 2019.
- [55] A. Panwar, G. Sharma, S. K. Sahoo, and R. C. Bansal, "Optimal AGC design for a hybrid power system using hybrid bacteria foraging optimization algorithm", *Electric Power Components and Systems*, vol. 47, no. 11-12, pp. 955-965, 2019.
- [56] N. T. Mbungu, R. Naidoo, R. C. Bansal, and J. Bazolana, "Discriminatory protection study of three-phase asynchronous motors during power disturbances", *Electric Power Components and Systems*, vol. 47, no. 4-5, pp. 431-443, 2019.
- [57] A. Kumar, N.K. Meena, A.R. Singh, Y. Deng, X. He, R. C. Bansal, and P. Kumar, "Strategic integration of battery energy storage systems with the provision of distributed ancillary services in active distribution systems", *Applied Energy*, vol. 253, no. 113503, pp. 1-16, 2019.
- [58] N. Khatri, V. Kumar, R.C. Bansal, and R.R. Joshi, "Influence of photo-voltaic generation on performance of voltage sag", *Int. Trans. Electrical Energy Systems*, vol. 29, no. 4, e2773, pp. 1-13, 2019.
- [59] F. Roos, and R. C. Bansal, "Reactive power and harmonic compensation strategy for coal mining industries", *Journal of Energy in Southern Africa*, vol. 30, no. 1, pp. 34-48, 2019.
- [60] I. Nasiruddin, S. Khatoon, M. F. Jalil, and R.C. Bansal, "Shade diffusion of partial shaded PV array by using odd-even structure", *Solar Energy*, vol.181, pp. 519-529, 2019.

- [61] R. Singh and R.C. Bansal, "Optimization of an autonomous hybrid renewable energy system using reformed electric system cascade analysis", *IEEE Trans. Industrial Informatics*, vol. 15, no. 1, pp. 399-409, 2019.
- [62] T. Adefarati and R. C. Bansal, "Reliability, economic and environmental analysis of a microgrid system in the presence of renewable energy resources", *Applied Energy*, vol. 236, pp. 1089-1114, 2019.
- [63] A. Kumar, Y. Deng, X. He, P. Kumar, and, R. C. Bansal, "Integrated assessment of a sustainable microgrid for a remote village in hilly region", *Energy Conversion & Management*, vol. 180, pp. 442-472, 2019.
- [64] R. K. Behera and R.C. Bansal, "Bidirectional power converter for solar grid interface applications: an experimental investigation", *Electric Power Components & Systems*, vol. 46, no 9, pp. 997-1005, 2019.
- [65] I. M.O. Mohammed, M. N. Gitau, R. C. Bansal, and K. Musasa, "Modelling and control of a Vienna smart rectifier-i for wind power systems integrated under transient conditions", *Technology and Economics of Smart Grid and Sustainable Energy*, vol. 4, no. 2 pp. 1-13, 2019.
- [66] T. Madiba and, R. C. Bansal, "Optimal load shedding control of a microgrid power system", *Electric Power Components & Systems*, vol. 46, no 7, pp. 768-787, 2019.
- [67] V. Dlamini, R. C. Bansal, R. Naidoo, "An improved non-intrusive induction motor efficiency estimation technique for non-ideal supply voltage conditions", *Electric Power Components & Systems*, vol. 46, no 9, pp. 1070-1081, 2019.
- [68] D. H. Tungadio, R. C. Bansal and M.W. Siti, "Energy flow estimation-control of two interconnected microgrids", *Journal of Energy in Southern Africa*, vol. 29, no. 4, pp. 69-80, 2018.
- [69] G. Sharma, R. C. Bansal, Ibraheem, and K. R. Niazi, "Automatic generation control (AGC) of wind power system: a least squares-support vector machine (LS-SVM) radial basis function (RBF) kernel approach", *Electric Power Components and Systems*, vol. 46, no. 14-15, pp. 1621-1633, 2018.
- [70] D. K. Raju, A. R. Singh, M. P Thakre, B.S. Umre, A. Kumar, and R. C. Bansal, "Effect of SSSC based SSR controller on the performance of distance relay and adaptive approach using synchronized measurement", *International Transactions of Electric Energy Systems*, vol. 28, no. 11, e2620, 2018.
- [71] R. Singh, R.C. Bansal, A. Singh, and R. Naidoo, "Multi-objective optimization of hybrid renewable energy system using reformed electric system cascade analysis for islanding and grid connected modes of operation", *IEEE Access*, vol. 6, pp. 47332-47354, 2018.
- [72] R. Singh, R.C. Bansal and A. Singh, "Optimization of an isolated PV generating unit and BESS system using electric system cascade analysis", *Electric Power Systems Research*, vol. 164, pp. 188-200, 2018.

- [73] N. T. Mbungu, R. Naidoo, R. C. Bansal, and J. Bazolana, "Real-time electricity pricing using an optimum energy management system with renewable energy integration for commercial building", *Sustainable Cities and Society*, vol. 41, pp. 392-404, 2018.
- [74] P. Thakur, A. Sikander, and R. C. Bansal, "Design of Cuckoo search based fractional order PID controller", *Computers and Electrical Engineering*, vol. 70, pp. 261-274, 2018.
- [75] M. Senatla, and R. C. Bansal, "A review of planning methodologies used for determination of optimal generation capacity mix: the cases of high shares of PV and wind", *IET-Renewable Power Generation*, vol. 12, no. 11, pp. 1222-1233, 2018.
- [76] A. Kumar, Y. Deng, X. He, P. Kumar, and, R. C. Bansal, "Multiyear load growth-based techno-financial evaluation of an academic microgrid", *IEEE Access*, vol. 6, no. 1, pp. 37533-37555, 2018.
- [77] G. Sharma, A. Panwar, Ibraheem, and R. C. Bansal, "Non-linear RBF-kernel based approach for AGC of multi-area energy systems", *IET-Generation, Transmission & Distribution*, vol. 12, no. 14, pp. 3510-3517, 2018.
- [78] A. Kumar, A. R. Singh, Y. Deng, X. He, P. Kumar, and, R. C. Bansal, "A novel methodological framework for the design of sustainable rural microgrid for developing nation", *IEEE Access*, vol. 6, no. 1, pp. 24925-24951, 2018.
- [79] P. T. Manditereza and R. C. Bansal, "Review of technical issues influencing the decoupling DG converter design from the distribution system protection strategy", *IET-Renewable Power Generation*, vol. 12, no. 10, pp. 1091-1100, 2018.
- [80] M. S. Thopil, R.C. Bansal, L. Zhang, G. Sharma, "A review of grid connected distributed generation using renewable energy sources in South Africa", *Energy Strategy Reviews*, vol 21, pp. 88-97, 2018.
- [81] G. Sharma, R. C. Bansal, Ibraheem, and K. R. Niazi, "ANFIS based control design for AGC of a hydro-hydro power system with UPFC and hydrogen electrolyser units", *Electric Power Components and Systems*, vol. 46, no. 4, pp. 406-417, 2018.
- [82] H. Walt, R. Naidoo, R. C. Bansal, and M. Bipath, "Maintaining overcurrent protection in a PV based distributed generation power systems", *International Transactions of Electric Energy Systems*, etep. 2562, pp. 1-13, 2018.
- [83] P. Roux and R. C. Bansal, "Transient stability by means of generator tripping, under frequency load shedding and a hybrid control scheme", *International Journal of Emerging Electrical Power Systems*, vol. 19, no. 1, 2018.
- [84] T. K. Roy, M. A. Mahmud, Amanullah M. T. Oo, R. C. Bansal, and M. E. Haque, "Nonlinear adaptive backstepping controller design for three-phase grid-connected solar photovoltaic systems", *Electric Power Components and Systems*, vol. 45, no. 20, pp. 2275-2292, 2018.
- [85] D. H. Tungadio, R. C. Bansal, M.W. Siti, and N.T. Mbungu, "Predictive active power control of two interconnected microgrids", *Technology and Economics of Smart Grid and Sustainable Energy*, vol. 3, no. 3, 2018, pp. 1-15.

- [86] R. Singh and R.C. Bansal, "A review of optimization constraints and techniques for hybrid renewable energy system (HRES) with energy storage unit", *IET-Renewable Power Generation*, vol. 12, no. 7, pp. 747-760, 2018.
- [87] A. Panwar, G. Sharma, Ibraheem, and R. C. Bansal, "Frequency stabilization of hydro-hydro power system using hybrid bacteria foraging PSO with UPFC and HAE", *Electric Power Systems Research*, vol. 161, pp. 74-85, 2018.
- [88] Z. Ngadiron, N. H. Radzi, M. Y. Hassan, and R. C. Bansal, "The economic benefits of generation revenue and demand payment assessment in pool-based market model: the case of Malaysia", *Electric Power Components & Systems*, vol. 46, no. 1, pp. 56-68, 2018.
- [89] M. Kumawat, N. Gupta, N. Jain, and R. C. Bansal, "Optimal planning of distributed energy resources in harmonics polluted distribution system", *Swarm and Evolutionary Computation*, vol. 39, pp. 99-113, 2018.
- [90] J. Justo and R. C. Bansal, "Parallel R-L configuration crowbars with series R-L circuit protection for LVRT strategy of DFIG under transient-state", *Electric Power Systems Research*, vol. 154, pp. 299-310, 2018.
- [91] K. Nghitevelekwa, and R. C. Bansal, "A review of generation dispatch with large-scale photovoltaic (PV) systems", *Renewable & Sustainable Energy Reviews*, vol. 81, pp. 615-624, 2018.
- [92] R. Naidoo, P. Pilley, J. Visser, and R.C. Bansal, T. Mbungu, "An adaptive method of symmetrical component estimation", *Electric Power Systems Research*, vol. 158, pp. 45-55, 2018.
- [93] H. Walt, R. Naidoo, and, R. C. Bansal, "PV based distributed generation power system protection: a review", *Renewable Energy Focus*, vol. 24, pp. 33-40, 2018.
- [94] K. Musasa, N. I. Nwulu, M. N. Gitau, and R.C. Bansal, "A review on DC collection grids for offshore wind farms with HVDC transmission system", *IET-Power Electronics*, vol. 10, no. 15, pp. 2104-2115, 2017.
- [95] D. H. Tungadio, R. C. Bansal, and M.W. Siti, "Optimal control of active power of two micro-grids interconnected with two AC tie-lines", *Electric Power Components and Systems*, vol. 45, no. 19, pp. 2188-2199, 2017.
- [96] A. Kumar, S. Mishra, V. Shrivastava, and R.C. Bansal, "Analytical behavior of brushless doubly fed electric variable transmission for wind power generation", *International Transactions of Electric Energy Systems*, vol. 27, no. 12, pp. 1-17, 2017.
- [97] Y. K. Bhatishwar, H.D. Mathur, and R. C. Bansal, "Ant colony optimized fuzzy control solution for frequency oscillation suppression", *Electric Power Components and Systems*, vol. 45, no. 14, pp. 1573-1584, 2017.

- [98] N. T. Mbungu, R. C. Bansal, and R. Naidoo, "Optimisation of grid connected hybrid PV-wind-battery system using model predictive control design", *IET-Renewable Power Generation*, vol. 11, no. 14, pp. 1573-1584, 2017.
- [99] P. Roux and R. C. Bansal, "Transient stability control by means of under frequency load shedding and a hybrid control scheme", *Journal of Energy in Southern Africa*, vol. 28, no. 4, pp. 92-104, 2017.
- [100] P. Roux and R. C. Bansal, "Detection of network instability using area-based centre of inertia referred frame", *technology and economics of smart grid and sustainable energy*, vol. 2, no. 1, article 21, pp. 1-18, 2017.
- [101] Y. K. Bhatishwar, H.D. Mathur, and R. C. Bansal, "Power-frequency balance in multi-generation system using optimized fuzzy logic controller", *Electric Power Components and Systems*, vol. 45, no. 12, pp. 1275-1286, 2017.
- [102] T. Adefarati, and R. C. Bansal, "Reliability and economic assessment of a microgrid power system with the integration of renewable energy resources", *Applied Energy*, vol. 206, pp. 911-933, 2017.
- [103] I. Nasiruddin, G. Sharma, K. R. Niazi, and R. C. Bansal, "New non-linear recurrent ANN based LFC design considering the new structures of Q matrix", *IET-Generation, Transmission & Distribution*, vol. 11, no. 11, pp. 2862-2870, 2017.
- [104] R. Prasad, R. C. Bansal and A. Raturi, "A review of Fiji's energy situation: Challenges and strategies as a small island developing state", *Renewable & Sustainable Energy Reviews*, vol. 75, pp. 278-292, 2017.
- [105] M. Kumawat, N. Gupta, N. Jain, and R. C. Bansal, "Swarm intelligence based optimal planning of distributed generators in distribution network for minimizing energy loss", *Electric Power Components and Systems*, vol. 45, no. 6, pp. 589-600, 2017.
- [106] G. Sharma, Ibraheem, K. R. Niazi, and R. C. Bansal, "Adaptive fuzzy critic based control design for AGC of power system connected via AC/DC tie-lines", *IET-Generation Transmission and Distribution*, vol. 11, no. 2, pp. 560-569, 2017.
- [107] C. Lupangu and, R. C. Bansal, "A review of technical issues on the development of photovoltaic systems", *Renewable & Sustainable Energy Reviews*, vol. 73, pp. 950-965, 2017.
- [108] N. Kanwar, N. Gupta, A. Swarnkar, K. R. Niazi, and R. C. Bansal, "Simultaneous allocation of distributed energy resource using improved particle swarm optimization", *Applied Energy*, vol. 185, pp. 1684-1693, 2017.
- [109] A. Kumar, B. Sah, A. R. Singh, Y. Deng, X. He, P. Kumar, and, R. C. Bansal, "A review of multi criteria decision making (MCDM) towards sustainable renewable energy development", *Renewable & Sustainable Energy Reviews*, vol. 69, pp. 596-609, 2017.
- [110] T. Adefarati, and R. C. Bansal, "Reliability assessment of distribution system with the integration of renewable distributed generation", *Applied Energy*, vol. 185, part 1, pp. 158-171, 2017.

- [111] G. Sharma, Ibraheem, K. R. Niazi, and R. C. Bansal, “Robust AGC design for a two-area power system interconnected via AC/DC tie-lines considering the new structures of matrix Q”, *IET-Generation, Transmission and Distribution*, vol. 10, no. 14, pp. 3570-3579, 2016.
- [112] P.T. Manditereza and R. C. Bansal, “Multi-agent based distributed voltage control algorithm for smart grid applications”, *Electric Power Components and Systems*, vol. 44, no. 20, pp. 2352-2363, 2016.
- [113] R. Dubey, D. Joshi, and R. C. Bansal, “Optimization of solar photovoltaic plant and economic analysis”, *Electric Power Components and Systems*, vol. 44, no. 18, pp. 2525-2535, 2016.
- [114] A. Kunwar and R. C. Bansal, “A supplementary controller for improvement of small signal stability of power system with wind power penetration”, *Electric Power Components and Systems*, vol. 44, no. 16, 2016, pp. 1825-1838.
- [115] C. L. Kala-Konga, M. N. Gitau, and R. C. Bansal, “Steady-state and small-signal models of a three-phase quasi-Z-source AC-DC converter for wind applications”, *IET-Renewable Power Generation*, vol. 10, no. 7, July 2016, pp. 1033 – 1040.
- [116] T. Adefarati and R. C. Bansal, “Integration of renewable distributed generators into the distribution system: a review”, *IET-Renewable Power Generation*, vol. 10, no. 7, pp. 873-884, Jul 2016.
- [117] P. Anjana, V. Gupta, H. Tiwari, N. Gupta, and R.C. Bansal, “Hardware implementation of shunt APF using modified fuzzy control algorithm with STM32F407VGT microcontroller”, *Electric Power Components and Systems*, vol. 44, no. 13, pp. 1530-1542, 2016.
- [118] A. Kunwar and R. C. Bansal, “Effect of HVDC line on small signal stability analysis of power system with different penetration level of DFIG and DDSG based wind farms”, *International Journal of Green Energy*, vol. 13, no. 4, pp. 335-343, 2016.
- [119] M. N. Kabir, Y. Mishra, and R. C. Bansal, “Probabilistic load flow for distribution systems with uncertain PV generation”, *Applied Energy*, vol. 163, pp. 343-351, 2016.
- [120] M. J. Slabbert, S. J. van Zyl, R. Naidoo, and R. C. Bansal, “Evaluating phase over-current protection philosophies for medium-voltage feeders applying let-through energy and voltage dip minimization”, *Electric Power Components and Systems*, vol. 44, no. 2, 2016, pp. 206-218.
- [121] G. Sharma, Ibraheem, K. R. Niazi, and R. C. Bansal, “Optimal AGC of a multi-area power system with parallel AC/DC tie lines using output vector feedback control strategy”, *International Journal of Electrical Power and Energy Systems*, vol. 81, pp. 22-31, 2016.
- [122] P. T. Manditereza and R. C. Bansal, “Renewable distributed generation: the hidden challenges - a review from the protection perspective”, *Renewable and Sustainable Energy Reviews*, vol. 58, 1457-1465, 2016.

- [123] K. Musasa, M. N. Gitau, and R. C. Bansal, "Dynamic analysis of DC-DC converter internal to an offshore wind farm", *IET-Renewable Power Generation*, Vol. 9, No. 6, pp. 542–548, 2015.
- [124] V. K. Jadoun, N. Gupta, K. R. Niazi, A. Swarnkar, R. C. Bansal, "Multi-area environmental economic dispatch with reserve constraints using enhanced particle swarm optimization", *Electric Power Components and Systems*, vol. 43, no. 13, 2015, pp. 1669-1681.
- [125] V. Kumar, R.R. Joshi, and R.C. Bansal, "Development of a novel control for matrix converter interfaced wind energy conversion system for dynamic performance enhancement", *Electric Power Components and Systems*, vol. 43, no. 9, 2015, pp. 1062-1071.
- [126] K. Musasa, M. N. Gitau, and R.C. Bansal, "Performance analysis of a power converter based active rectifier for an offshore wind", *Electric Power Components and Systems*, vol. 43, no. 8-10, 2015, pp. 1089-1099.
- [127] K. Musasa, M. N. Gitau, and R.C. Bansal, "Analysis of a DC collector based power converter topology for an offshore wind farm", *Electric Power Components and Systems*, vol. 43, no. 8-10, 2015, pp. 1113-1121.
- [128] S. Khatoon, Ibraheem, R. Ehtesham, R. C. Bansal, "Optimal output vector feedback control strategy for wind power systems", *Electric Power Components and Systems*, vol. 43, no. 8-10, 2015, pp. 1122-1132.
- [129] R. Shah, N. Mithulananthan, R. C. Bansal, and V. K. Ramachandaramurthy, "A review of key power system stability challenges for large-scale PV integration", *Renewable and Sustainable Energy Reviews*, vol. 41, 2015, pp. 1423-1436.
- [130] D. Q. Hung, N. Mithulananthan, and R. C. Bansal, "A combined practical approach for distribution system loss reduction", *International Journal of Ambient Energy*, vol. 36, No. 3, 2015, pp. 123-131.
- [131] N. H. M. Radzi, R. C. Bansal, Z. Y. Dong, M. Y. Hassan, and K. P. Wong, "Integrating transmission loss component with the distribution factors enhanced transmission pricing method", *Electric Power Components and Systems*, vol. 23, no. 1, pp. 10-21, 2015.
- [132] R.C. Bansal, K. Musasa, Y. Mishra, and K. Gajrani, "Some of the design considerations in power generation from offshore wind farms", *IET-Engineering & Technology Reference*, published 5 Nov 2014, ISSN 2056-4007.
- [133] A. Kunwar, R. C. Bansal, O. Krause, "Steady state and transient voltage stability analysis of a weak distribution system with a remote doubly fed induction generator based wind farm", *Energy Science and Engineering (Wiley)*, vol. 2, no. 4, pp. 188-195, 2014.
- [134] M. N. Kabir, Y. Mishra, Z. Ledwich, Z. Xu, and R. C. Bansal, "improving voltage profile of residential distribution systems using rooftop pvs and battery energy storage systems", *Applied Energy*, vol. 114, pp. 290-300, 2014.

- [135] M. B. Nappu, A. Arief, and R. C. Bansal, "Transmission management for congested power system: a review of concepts, technical challenges and development of a new methodology", *Renewable and Sustainable Energy Reviews*, vol. 38, 2014, pp. 572–580.
- [136] R. Prasad, R. C. Bansal and A. Raturi, "Multi-faceted energy planning: A review", *Renewable and Sustainable Energy Reviews*, vol. 38, 2014, pp. 686–699.
- [137] X. Liu and R. C. Bansal, "Integrating Multi-objective optimization with computational fluid dynamics to optimize boiler combustion process of a coal fired power plant", *Applied Energy*, vol. 114, pp. 658-669, 2014.
- [138] V. Dlamini, R. C. Bansal, R. Naidoo, "A motor management strategy for optimising energy use and reducing life cycle costs", *Journal of Power and Energy Engineering*, vol. 2, pp. 448-456, 2014.
- [139] D. Q. Hung, N. Mithulananthan, and R. C. Bansal, "an optimal investment planning framework for multiple distributed generation units in industrial distribution systems", *Applied Energy*, vol. 124, pp. 62-72, 2014.
- [140] D. Q. Hung, N. Mithulananthan, and R. C. Bansal, "Integration of PV and BES units in commercial distribution systems considering energy loss and voltage stability", *Applied Energy*, vol. 113, pp. 1162-1170, 2014.
- [141] H. Yi-Yu, R. C. Bansal and Z. Y. Dong, "Fast computation of the maximum wind penetration based on frequency response in small isolated power systems", *Applied Energy*, vol. 113, pp. 648-659, 2014.
- [142] A. Kunwar and R. C. Bansal, "Stability analysis of power system with DFIG-based wind farm connected through series FACTS device compensated line", *International Journal of Ambient Energy*, vol. 35, no. 3, 2014, pp. 118-131.
- [143] R. Shah, N. Mithulananthan, K. Y. Lee, and R. C. Bansal, "Wide-area measurement signal-based stabilizer for large-scale photovoltaic plants with high variability and uncertainty", *IET-Renewable Power Generation*, vol. 7, no. 6, pp. 614-622, 2013.
- [144] N. C. Hien, N. Mithulananthan, and R. C. Bansal, "Location and sizing of distribution generation units for loadability enhancement in primary feeder", *IEEE Systems Journal*, vol. 7, no. 4, pp. 797-806, 2013.
- [145] P. Thakur, A. K. Singh, and R. C. Bansal, "A novel way for classification and type detection of voltage sag", *IET-Generation, Transmission & Distribution*, vol. 7, no. 4, pp. 398-404, 2013.
- [146] D. Q. Hung, N. Mithulananthan, and R. C. Bansal, "Analytical strategies for renewable distributed generation integration considering energy loss minimization", *Applied Energy*, Vol. 105, 2013, pp. 75-85.
- [147] R. Shah, N. Mithulananthan, and R.C. Bansal, "Oscillatory stability analysis with high penetrations of large-scale photovoltaic generation", *Energy Conversion & Management*, vol. 66, pp. 420-429, 2013.

- [148] M.B. Nappu, R.C. Bansal, and T. K. Saha, “Market power implication on congested power system: a case study of financial withheld strategy”, *International Journal of Electrical Power & Energy Systems*, vol. 47, pp. 408-415, 2013.
- [149] L. Gidwani, H. Tiwari, and R. C. Bansal, “Improving power quality of wind energy conversion system with unconventional power electronic interface”, *International Journal of Electrical Power and Energy Systems*, vol. 44, no. 1, pp. 445-453, 2013.
- [150] D. Joshi, K. S. Sandhu, and R. C. Bansal, “Steady state analysis of self-excited induction generators using genetic algorithm approach under different operating modes”, *International Journal of Sustainable Energy* (Taylor & Francis), vol. 32, no. 4, 2013, pp. 244-258.
- [151] L. Gidwani, H. Tiwari, and R. C. Bansal, “Simulation of wind power impact on the transient fault behaviour of grid-connected wind turbine”, *International Journal of Sustainable Energy*, vol. 32, no. 2, pp. 96-110, 2013.
- [152] N. H. M. Radzi, R. C. Bansal, Z. Y. Dong, M. Y. Hassan, and K. P. Wong, “An Overview of the Australian NEM transmission use of system charges for integrating renewable generation to existing grid”, *IET-Generation, Transmission & Distribution*, vol. 6, no. 9, pp. 863-873, 2012.
- [153] A. Mohapatra, B.K. Panigrahi, B. Singh, and R.C. Bansal, “Optimal placement of capacitors in distribution networks using a modified teaching-learning based algorithm, swarm, evolutionary, and memetic computing”, *Lecture Notes in Computer Science*, vol. 7677, 2012, pp. 398-405.
- [154] X. Liu and R. C. Bansal, “Improving fossil fuel boiler combustion efficiency based on integrating real time simulation with online learning technology”, *International Journal of Ambient Energy*, vol. 33, no. 3, pp. 130-141, 2012.
- [155] N. Gupta, S. P. Singh, and R. C. Bansal, “A DSP based performance evaluation of three-phase four-wire shunt active filter for harmonic elimination, reactive power compensation and balancing of nonlinear loads under non-ideal mains voltages”, *Electric Power Components and Systems*, vol. 40, no. 10, 2012, pp. 1105-1118.
- [156] P. B. Karandikar, D. Talange, U. P. Mhaskar, and R. C. Bansal, “validation of capacitance and equivalent series resistance model of manganese oxide-based aqueous super-capacitor”, *Electric Power Components and Systems*, vol. 40, no. 10, pp. 1105–1118, 2012.
- [157] P. B. Karandikar, D. Talange, U. P. Mhaskar, and R. C. Bansal, “Investigations in to material and manufacturing aspects of aqueous supercapacitor”, *Materials and Manufacturing Processes*, vol. 27, no. 11, pp. 1164–1170, 2012.
- [158] P. B. Karandikar, D. Talange, U. P. Mhaskar, and R. C. Bansal, “Development, modeling and characterization of aqueous metal oxide based supercapacitor”, *Energy*, vol. 40, no. 1, pp. 131-138, 2012.

- [159] X. Liu and R. C. Bansal, "Optimizing combustion process by adaptive tuning technology based on integrated genetic algorithm and computational fluid dynamics", *Energy Conversion & Management*, vol. 56, 2012, pp. 53-62.
- [160] R. Shah, N. Mithulananthan, and R. C. Bansal, "Damping performance analysis of BESS, ultracapacitor and shunt capacitor with large-scale PV plants", *Applied Energy*, vol. 96, 2012, pp. 235-244.
- [161] P. Thakur, A. K. Singh, and R. C. Bansal, "A novel way to distinguish single phase dips through potential gradient", *Electric Power Components and Systems*, vol. 40, no. 1, 2012, pp. 336-347.
- [162] P. Chakraborty, G. G. Roy, B. K. Panigrahi, R C Bansal, and, A. Mohapatra, "Dynamic economic dispatch using harmony search algorithm with modified differential mutation operator", *Electrical Engineering (Springer)*, vol. 94, no. 4, pp. 1-9, 2012.
- [163] V. Shrivastava, R. B. Misra, and R. C. Bansal, "An assessment of electrical load forecasting using artificial neural network", *International Journal of Computer Aided Engineering and Technology*, vol. 4, no. 1, pp. 80-89, 2012.
- [164] A P. Grilo, W. Freitas, C. M. M. Palio, J. Carlos, and R. C. Bansal, "Analytical tools to assess the voltage stability of induction-based distributed generators", *International Journal of Electrical Power and Energy Systems*, Vol. 36, 2012, pp. 31-39.
- [165] R. Shah, N. Mithulananthan, R. C. Bansal, K.Y. Lee, and A. Lomi, "Influence of large-scale PV on the static voltage stability of sub-transmission system", *International Journal of Electrical Engineering and Informatics*, vol. 4, no. 1, pp. 148-161, March 2012.
- [166] S. Y. Kong, R. C. Bansal, and Z. Y. Dong, "A comparative small signal stability analysis of PMSG, DFIG and SCIG-Based wind farms", *International Journal of Ambient Energy*, vol. 33, no. 2, 2012, pp. 87-97.
- [167] V. R. Pandi, B. K. Panigrahi, R. C. Bansal, and S. Das, "Economic load dispatch using hybrid swarm intelligence based harmony search algorithm", *Electric Power Components and Systems*, vol. 39, no. 8, 2011, pp. 751-767.
- [168] S. Doolla, T. S. Bhatti, and R. C. Bansal, "Load frequency control of an isolated small hydro power plant using multi pipe scheme", *Electric Power Components and Systems*, vol. 39, no. 1, 2011, pp. 46-63.
- [169] S. Yee, R. C. Bansal, A. K. Bhardwaj, and A. K. Srivastava, "Electricity market price forecasting using vector support machines", *International Journal of Computer Aided Engineering and Technology*, vol. 3, no. 1, 2011, pp. 1-18.
- [170] A. R. Phadke, M. Fozdar, K. R. Niazi, N. Mithulananthan, and R. C. Bansal, "A new technique for computation of closest hopf bifurcation point using real coded genetic algorithm", *IET-Generation, Transmission and Distribution*, vol. 5, no. 1, 2011, pp. 11-18.

- [171] D. Q. Hung, N. Mithulananthan, and R. C. Bansal, "Analytical expressions for DG allocation in primary distribution networks", *IEEE Trans. Energy Conversion*, vol. 25, no. 3, 2010, pp. 814-820.
- [172] N. Gupta, A. Swarnkar, K. R. Niazi, and R. C. Bansal, "Multi-objective reconfiguration of distribution systems using adaptive genetic algorithm in fuzzy framework", *IET-Generation, Transmission and Distribution*, vol. 4, no. 12, 2010, pp. 1288-1298.
- [173] A. R. Phadke, M. Fozdar, K. R. Niazi, R. C. Bansal, and N. Mithulananthan, , "On-line monitoring of proximity to voltage collapse using a new index based on local signals", *Electric Power Components and Systems*, vol. 38, no. 13, 2010 , pp. 1498 – 1512.
- [174] P. G. Kini and R. C. Bansal, "Effect of voltage and load variations on efficiencies of a motor-pump system", *IEEE Trans. Energy Conversion*, vol. 25, no. 2, 2010, pp. 287-292.
- [175] M. Tazil, V. Kumar, R. C. Bansal, S. Kong, Z.Y. Dong, W. Freitas, and H. D. Mathur, "Three-phase doubly-fed induction generators: an overview", *IET-Electric Power Applications*, Vol. 4, No. 2, 2010, pp. 75-89.
- [176] S. Senthil Kumar, P. Ajay D. Vimal Raj, and R. C. Bansal, "Matlab-simulink based comparative analysis of AGC of two area h-t system using GA optimized PI controllers and fuzzy controllers for frequency excursion", *Int. Journal of Integrated Energy Systems*, vol. 2, no. 2, 2010, pp. 113-124.
- [177] K. Dangi, K. R. Niazi, and R. C. Bansal, "Application of neural networks for power system security evaluation", *International Journal of Electrical Energy Systems*, vol. 2, no. 1, pp. 35-47, 2010.
- [178] V. Kumar, R. C. Bansal, R. R. Joshi, and A. Sharma, "A robust control algorithm based high voltage direct current system connected to a weak ac grid.", *Journal of Renewable and Sustainable Energy*, vol. 1, no. 4, 2009, pp. 1-11.
- [179] V. Kumar, R. R. Joshi, and R. C. Bansal, "Optimal control of matrix converter based new WECS for performance enhancement and efficiency optimization", *IEEE Trans. Energy Conversion*, vol. 24, no. 1, 2009, pp. 264-273.
- [180] P. Ajay D. Vimal Raj, J. Raja, S. Senthil Kumar, and R. C. Bansal, "Automatic generation control of a hydro-thermal and thermal-thermal systems in a deregulated environment", *Journal of Electrical Systems*, Vol. 5, No.2, pp. 1-11, 2009.
- [181] R. D. Prasad, R. C. Bansal, and M. Sauturaga, "Some of the design and methodology considerations in wind resource assessment", *IET-Renewable Power Generation*, vol. 3, no. 1, 2009, pp. 53-64.
- [182] B. Bhattacharyya, S.K. Goswami, and R. C. Bansal, "Loss sensitivity approach in evolutionary algorithms for reactive power planning", *Electric Power Components and Systems*, vol. 37, no. 3, 2009, pp. 287-299.

- [183] R. D. Prasad, R. C. Bansal, and M. Sauturaga, "Wind-diesel hybrid configuration with battery as storage for a village", *International Journal of Agile Systems and Management*, vol. 4, no. 1/2, 2009, pp. 41-59.
- [184] R. D. Prasad, and R. C. Bansal, and M. Sauturaga, "Economic analysis for a wind turbine installed in Vadravadra Village in Fiji", *International Journal of Agile Systems and Management*, vol. 4, no. 1/2, 2009, pp. 60-75.
- [185] R. D. Prasad, R. C. Bansal, and M. Sauturaga, "Wind characteristics and wind power density for Vadravadra site in Fiji Islands", Special issue on Wind Power Generation *International Journal of Modelling, Identification and Control (IJMIC)*, vol. 6, no. 3, 2009, pp. 173-180.
- [186] R. D. Prasad, R. C. Bansal, and M. Sauturaga, "Wind energy analysis for Vadravadra site in Fiji Islands: a case study", *IEEE Trans. Energy Conversion*, vol. 24, no. 4, 2009, pp. 750-757.
- [187] R. D. Prasad, R. C. Bansal, and M. Sauturaga, "Wind modelling based on wind input data conditions and wind resources assessment methods", *International Journal of Global Energy Issues*, vol. 32, no. 3, 2009, pp. 227-240.
- [188] R.K. Saket, R. C. Bansal, and G. Singh, "Power system modelling and reliability evaluation of generation capacity", *Int. Journal of Reliability and Safety*, vol. 3, no. 4, 2009, pp. 427-441.
- [189] B. Bhattacharyya, S. K. Goswami, and R. C. Bansal, "Hybrid fuzzy particle swarm optimization approach for reactive power optimization", *Journal of Electrical Systems*, vol. 5, no. 3, 2009, pp. 1-9.
- [190] R. Chopra, D. Joshi, and R. C. Bansal, "Analysis delta-omega and fuzzy logic power system stabilizer performances under several operating conditions", *Journal of Renewable and Sustainable Energy*, vol. 1, no. 3, 2009, pp. 1-11.
- [191] Y. Mishra, S. Mishra, F. Li, Z. Y. Dong, and R. C. Bansal, "Small signal stability analysis of a DFIG based wind power system with tuned damping controller under super/sub-synchronous mode of operation", *IEEE Trans. Energy Conversion*, vol. 24, no. 4, 2009, pp. 972-982.
- [192] V. Kumar, R. C. Bansal, and R. R. Joshi, "Experimental realization of matrix converter based induction motor drive under various abnormal voltage conditions", *International Journal of Control, Automation, and Systems*, vol. 6, no. 5, pp. 1-7, 2008, pp. 670-676.
- [193] V. Kumar and R. C. Bansal, "Optimal control of matrix converter based WECS for performance and stability enhancement at low wind speeds", *International Journal of Power Electronics*, Vol. 1, No. 2, 2008, pp. 131-149.
- [194] R. Pachar, H. Tiwari, and R. C. Bansal, "Performance analysis of high-speed power quality disturbance recognition scheme for static transfer switch application", *WSEAS Trans. Circuits and Systems*, vol. 7, no. 2, pp. 988-998, 2008.

- [195] S. M. Lukic, J. Cao, R. C. Bansal, F. Rodriguez, and A. Emadi, "Energy storage systems for automotive applications", *IEEE Trans. Industrial Electronics*, vol. 55, no. 6, 2008, pp. 2258-2267.
- [196] P. G. Kini, R. C. Bansal, and R. S. Aithal, "Performance analysis of centrifugal pumps subjected to voltage variation and unbalance", *IEEE Trans. Industrial Electronics*, vol. 55, no. 1, 2008, pp. 562-569.
- [197] R. C. Bansal, "Modelling and automatic reactive power control of isolated wind-diesel hybrid power systems using ANN tuned SVC", *Energy Conversion and Management*, vol. 49, no. 2, pp. 357-364, 2008.
- [198] R. C. Bansal, "Power restructuring: some restructuring issues of Indian power sector", *Electrical India Magazine*, vol. 48, no. 4, pp. 96-110, 2008.
- [199] P. G. Kini, R. C. Bansal, and R.S. Aithal, "A novel approach toward interpretation and application of voltage unbalance factor", *IEEE Trans. Industrial Electronics*, vol. 54, no. 4, 2007, pp. 2315-2322.
- [200] R. C. Bansal and T. S. Bhatti, "Reactive power control of isolated wind-diesel hybrid power systems using simulink", *Electric Components and Power Systems*, vol. 35, no. 12, pp. 1345-1366, 2007.
- [201] R. K. Saket, R. C. Bansal, and K. S. Anand Kumar, "Reliability evaluation of micro hydro-photo-voltaic hybrid power generation using municipal waste water", *GMSARN (Global Mekong Subregion Academic and Research Network) International Journal*, vol. 1, no. 1, pp. 13-20, 2007.
- [202] R. C. Bansal, "Automatic reactive power control of isolated wind-diesel hybrid power systems", *IEEE Trans. Industrial Electronics*, vol. 53, no. 4, pp. 1116-1126, 2006.
- [203] A. F. Zobaa, K. Nigim, and R. C. Bansal, "Technology of VAr compensators for induction generator applications in wind energy conversion systems", *Journal of Electrical Systems*, vol. 2, no. 3, pp. 172-184, 2006.
- [204] P. G. Kini, R. C. Bansal, and R. S. Aithal, "Impact of voltage variation on three-phase induction motor performance", *The South Pacific Journal of Natural Science*, vol. 24, pp. 45-50, 2006.
- [205] R. C. Bansal, "Overview and literature survey of artificial neural networks applications to power systems (1992-2004)", *Journal of Institution of Engineers (India)- Electrical Engineering*, vol. 86, no. 1, March 2006, pp. 282-296.
- [206] H. D. Mathur, C. M. Arora, and R. C. Bansal, "A new algorithm to enhance power transfer using series capacitor", *The South Pacific Journal of Natural Science*, vol. 24, 2006, pp. 54-58.
- [207] R. C. Bansal, "A bibliographical survey of evolutionary computation applications in power systems (1994-2003)", *Int. Journal of Power and Energy Systems*, vol. 26, no. 3, pp. 216-225, 2006.

- [208] R. C. Bansal, "Three-phase self-excited induction generators (SEIG): an overview", *IEEE Trans. Energy Conversion*, vol. 20, no. 2, pp. 292-299, 2005.
- [209] R. C. Bansal, "Optimization methods for electric power systems: an overview", *Int. Journal of Emerging Electric Power Systems*, vol. 2, no. 1, article No. 1021, pp. 1-25, 2005.
- [210] R. C. Bansal and J. C. Pandey, "Load forecasting using artificial intelligence techniques: a literature survey", *Int. Journal of Computer Applications in Technology*, vol. 22, no. 2/3, pp. 109-119, 2005.
- [211] R. C. Bansal, A.F. Zobaa, and R.K. Saket, "Some issues related to power generation using wind energy conversion systems: an overview", *Int. Journal of Emerging Electric Power Systems*, vol. 3, no. 2, article No. 1070, pp. 1-19, 2005.
- [212] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "A novel mathematical modelling of induction generator for reactive power control of isolated hybrid power systems", *Int. Journal of Modelling and Simulation*, vol. 24, no. 1, pp. 1-7, 2004.
- [213] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "Automatic reactive power control of isolated wind-diesel hybrid power systems for variable wind speed/slip", *Electric Power Components and Systems*, vol. 32, no. 9, pp. 901-912, 2004.
- [214] R. C. Bansal, "Closure of bibliography on the fuzzy set theory applications to power systems (1994-2001)", *IEEE Trans. Power Systems*, vol. 19, no. 4, pp. 2118-2119, 2004.
- [215] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "Closure of a bibliographical survey on induction generators for application of non-conventional energy systems", *IEEE Trans. Energy Conversion*, vol. 19, no. 3, pp. 650-651, 2004.
- [216] R. C. Bansal, "Bibliography on the fuzzy set theory applications to power systems (1994-2001)", *IEEE Trans. Power Systems*, Vol. 18, No. 4, pp. 1291-1299, 2003.
- [217] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "Artificial intelligence techniques for reactive power/voltage control in power systems: a review", *Int. Journal of Power and Energy Systems*, vol. 23, no. 2, pp. 81-89, 2003.
- [218] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "A bibliographical survey on induction generators for application of non-conventional energy systems", *IEEE Trans. Energy Conversion*, vol. 18, no. 3, pp. 433-439, 2003.
- [219] R. C. Bansal, "Literature survey on expert system applications to power systems (1990-2001)", *Engineering Intelligent Systems*, vol. 11, no. 3, pp. 103-112, 2003.
- [220] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "Induction generator for isolated hybrid power system applications: a review", *Journal of Institution on Engineers (India)-EL*, Vol. 83, No. 1, pp. 262-269, 2003.
- [221] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "Discussion of market constrained optimal planning for wind energy conversion systems over multiple installation sites", *IEEE Trans. Energy Conversion*, vol. 17, no. 4, p. 174, 2002.

- [222] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "On some of the design aspects of wind energy conversion systems", *Energy Conversion and Management*, vol. 43, no. 16, pp. 2175-2187, 2002.
- [223] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "Discussion of assessment of voltage unbalance", *IEEE Trans. Power Delivery*, vol. 17, no. 4, p.1176, 2002.
- [224] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "Discussion of bibliography on the application of probability method in power system reliability evaluation", *IEEE Trans. Power Systems*, vol. 17, no. 3, p. 924, 2002.
- [225] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "Some aspects of grid connected wind electric energy conversion systems", *Interdisciplinary Journal of Institution on Engineers (India)*, vol. 82, no. 1, pp. 25-28, 2001.

CONFERENCES

- [226] S. Algu, T. Adefarati, R. C. Bansal and R. Naidoo, and A. R. Singh, "Business case for photovoltaic power systems for high energy industrial consumers in South Africa", Communicated to IEEE Industrial and Commercial Power System Asia Technical Conference. July 13-16, Wehei, China.
- [227] T. Adefarati, M.S.L. Nozakuzaku, R. Naidoo, and R. C. Bansal, "High gain DC-DC converter for DC power transmission for offshore wind farms", Accepted for publication in International Conference on Harmonics & Quality of Power, July 6-7, 2020, paper no. 63, Dubai, UAE.
- [228] T. Adefarati, B. Mokoena, R. Naidoo, and R. C. Bansal, "Power management of a grid-connected wind energy system", IEEE International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control" (PARC 2020) , Feb. 28-29, 2020, GLA, Mathura, India.
- [229] N. T. Mbungu, R.C. Bansal, R. Naidoo, and M.W. Siti, "Analysis of a grid-connected battery energy storage based energy management system", IEEE International Conference on Power, Control and Computing Technologies, NIT Raipur, India, Jan. 3-5, 2020.
- [230] N. T. Mbungu, R.C. Bansal, R. Naidoo, and M.W. Siti, and D.H. Tungadio, "Modelling of a smart hybrid water-power system for freshwater and energy supply network", IEEE International Conference on Power, Control and Computing Technologies, NIT Raipur, India, Jan. 3-5, 2020.
- [231] T. Adefarati. R.C. Bansal, F. Shahniah, Md A. Shoeb, "Techno-economic effects of renewable energy technologies on a microgrid system for residential buildings", 9th International Conference on Power and Energy Systems (ICPES), Perth, Australia, Dec. 10-12, 2019.
- [232] N. T. Mbungu, R.C. Bansal, R. Naidoo, M.W. Siti, and K.D. Poti, "Optimal energy management of smart microgrid under demand response", 12th Int. Conf. on Sustainable Energy & Environmental Protection (SEEP), University of Sharjah, Sharjah, UAE, Nov. 18-

21, 2019.

- [233] K. D. Poti, R. Naidoo, N. T. Mbungu, and R.C. Bansal, “Smart solar PV power forecasting for commercial applications ”, 12th Int. Conf. on Sustainable Energy & Environmental Protection (SEEP), University of Sharjah, Sharjah, UAE, Nov. 18-21, 2019.
- [234] A. R. Singh, L. Ding, A. Kumar, M. Kheshti, R. Singh, R. C. Bansal, “Isolated microgrid voltage regulation using fuzzy-logic based inverter control”, 8th IET-RPG conf., Shanghai, China, paper id 0524, Oct. 24-25, 2019 (**received 3rd Best paper award**).
- [235] T. Adefarati, R.C. Bansal and R. Naidoo, “Design of an energy management scheme for residential demand response in a microgrid system”, 8th IET-RPG conf., Shanghai, China, paper id 396, Oct. 24-25, 2019.
- [236] A. Sujil, R. Kumar, and R.C. Bansal, “Markov chain Monte Carlo sampling based bayesian multivariate linear spline load forecasting agent for smart microgrid energy management system”, 8th IET-RPG conf., Shanghai, China, paper id 0842 Oct. 24-25, 2019.
- [237] P. T. Manditereza and R. C. Bansal, “Development of voltage-actuated protection relay prototype”, accepted for publication in IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe), Bucharest, Romania, September 29 to October 2, 2019.
- [238] T. Adefarati, P. S. Kopa, R. C. Bansal, H.D. Mathur, and D. Kumar, “Impact of PV systems and battery storage in hybrid power systems with grid connection”, 2nd International Conference on Large-Scale Grid Integration of Renewable Energy in India, New Delhi, India, 4 - 6 Sep., 2019.
- [239] T. Adefarati, E. M. Mohlatlola, R. C. Bansal, H.D. Mathur, and D. Kumar, “Isolated microgrid for rural electrification”, 2nd International Conference on Large-Scale Grid Integration of Renewable Energy in India, New Delhi, India, 4 - 6 Sep., 2019.
- [240] T. Adefarati, and R. C. Bansal, “Techno-economic evaluation of a grid connected microgrid-cogeneration system using wind turbines, microturbine and battery system”, paper id, 231, 11th International Conference on Applied Energy (ICAE), Sweden, Västerås Aug 12-15, 2019.
- [241] N. T. Mbungu, R.M. Naidoo, and R. C. Bansal, “Dynamic energy management strategy under price-based demand response scheme”, paper id, 230, 11th International Conference on Applied Energy (ICAE), Sweden, Västerås Aug 12-15, 2019.
- [242] T. Adefarati, S. Potgieter, R. C Bansal, R. Naidoo, R. Rizzo, and S. Padmanaban, “Optimization of PV-wind-battery storage microgrid system utilizing a genetic algorithm”, International Conference on Clean Electrical Power (ICCEP), Otranto, Puglia– Italy, 2-4 July 2019.
- [243] M. Kumawat, N. Gupta, N. Jain, and R. C. Bansal, “Jaya algorithm based optimal allocation of distributed energy resources”, Intelligent Computing Techniques for Smart Energy Systems (ICTSES), Dec 23-24, 2018, Manipal University Jaipur, India.

- [244] A. Panwar, G. Sharma, I. Nasiruddin, and R. C. Bansal, "Jaya evaluated frequency control design for hydro electric power system using RFB and UPFC", Intelligent Computing Techniques for Smart Energy Systems (ICTSES), Dec 23-24, 2018, Manipal University Jaipur, India.
- [245] A. Kumar, Nand K. Meena, A. Singh, R. C. Bansal, "Strategic allocation and energy management of BESS for the provision of ancillary services in active distribution networks", paper id 928, 10th International Conference on Applied Energy (ICAE), Aug 22-25, 2018, Hongkong, also published in Energy Procedia, vol. 152, pp. 2972-2978, 2019.
- [246] A. Kumar, Nand K. Meena, Y. Deng, X. He, R. C. Bansal, P. Kumar, "Optimal planning of hybrid energy conversion systems for annual energy cost minimization in Indian residential buildings", paper id 942, 10th International Conference on Applied Energy (ICAE), Aug 22-25, 2018, Hongkong, also published in Energy Procedia, vol. 158, pp. 2979-2985, 2019.
- [247] S. K. Sahoo, G. Sharma, A. Panwar, and R. C. Bansal, "Frequency regulation of wind integrated power system using dual mode fuzzy", 10th International Conference on Applied Energy (ICAE), Aug 22-25, 2018, Hongkong, also published in Energy Procedia, vol. 152, pp. 6321-6327, 2019.
- [248] A. Panwar, G. Sharma, S. K. Sahoo, and R. C. Bansal, "Active power regulation of hydro dominating energy system using IDD optimized FPA", paper id 891, 10th International Conference on Applied Energy (ICAE), Aug 22-25, 2018, Hongkong, also published in Energy Procedia, vol. 152, pp. 6328-6333, 2019.
- [249] T. Adefarati, and R. C. Bansal, "Economic and environmental analysis of a cogeneration power system with the incorporation renewable energy resources", paper id, 874, accepted for publication 10th International Conference on Applied Energy (ICAE), Aug 22-25, 2018, Hongkong, also published in Energy Procedia, vol. 152, pp. 803-808, 2019.
- [250] S. Ratra, R. Tiwari, K.R. Niazi, and R. C. Bansal, "Optimal coordinated control of OLTCs using Taguchi Method to enhance voltage stability of power systems", 10th International Conference on Applied Energy (ICAE), Aug 22-25, 2018, Hongkong, also published in Energy Procedia, vol. 152, pp. 3957-3963, 2019.
- [251] T. Adefarati, and R.C. Bansal, "Techno-economic analysis of microgrid power system", 7th IET-RPG conf., Copenhagen, Denmark, Sep. 26-27, 2018.
- [252] N. T. Mbungu, R.C. Bansal and R. Naidoo, "Smart energy coordination of a hybrid Wind/PV with battery storage connected to grid", 7th IET-RPG conf., Copenhagen, Denmark, Sep. 26-27, 2018.
- [253] A. Sujil, R. Kumar, and R.C. Bansal, "FCM clustering based adaptive neuro-fuzzy inference system based PV and wind generation forecasting agent for energy management in a smart microgrid", 7th IET-RPG conf., Copenhagen, Denmark, Sep. 26-27, 2018.

- [254] R. Singh, A. Kumar, A. R. Singh, R. Naidoo, R.C. Bansal and P. Kumar, “Environmental feasibility of electric taxis in South Africa”, 7th IET-RPG conf., Copenhagen, Denmark, Sep. 26-27, 2018.
- [255] P. T. Manditereza and R. C. Bansal, “Introducing a new type of protection zone for the smart grid incorporating distributed generation”, IEEE PES ISGT Asia, May 23-25, pp. 86-89, 2018, Singapore.
- [256] A. Kunwar, F. Shahnia, and R.C. Bansal, “Impact of the capacity and number of inertial and non-inertial distributed energy resources within a microgrid on its stability margins, 27th International Symposium on Industrial Electronics (ISIE), Cairns, Australia, pp. 55-60, 12-15 June 2018.
- [257] P. T. Manditereza and R. C. Bansal, “Fault detection and location algorithm for DG-integrated distribution systems”, IET- 14th International Conference on Developments in Power Systems Protection (DPSP) conference, March 12-15, 2018, Belfast, UK.
- [258] M. J. Slabbert, R.C. Bansal and R. Naidoo, “The application of let-through energy protection to the main and back-up protection elements on high voltage overhead feeders”, CIGRE’s 47th International Conference on Large High Voltage Electric Systems, pp. 1-10, B5-116, Paris, France, Aug 26-31, 2018.
- [259] R. Singh, R.C. Bansal, and N. Tiwari, “Optimization and comparison of autonomus renewable energy system based on ESCA technique”, IEEE WIECON-ECE conference, Dehradun, India, Dec. 18-19, 2017.
- [260] T. Adefarati, and R. C. Bansal, “Techno-economic analysis of a PV–wind–battery–diesel standalone power system in a remote area”, 6th IET-RPG conf. Wuhan, China, Oct 19-20, 2017, (also published in IET-The Journal of Engg., Nov. 2017).
- [261] A. Kumar, B. Sah, Y. Deng, X. He, P. Kumar, and R.C. Bansal, “Application of multi-criteria decision analysis tool for design of a sustainable micro-grid for a remote village in the Himalayas”, 6th IET-RPG conf. Wuhan, China, Oct 19-20, 2017, (also published in IET-The Journal of Engg., vol. 2017, no. 13, pp. 2108-2113, 2017).
- [262] N. T. Mbungu, R. C. Bansal, and R. Naidoo, “Optimal single phase smart meter design”, 6th IET-RPG conf. Wuhan, China, Oct 19-20, 2017, , (also published in IET-The Journal of Engg., vol. 2017, no. 13, pp. 1220-1224, Nov. 2017).
- [263] A. Kumar, Y. Deng, X. He, P. Kumar, and R.C. Bansal, “Energy management system controller for a rural microgrid”, 6th IET-RPG conf. Wuhan, China, Oct 19-20, 2017, (also published in IET-The Journal of Engg., vol. 2017, no. 13, pp. 834-839, 2017).
- [264] T. Madiba and, R. C. Bansal, “Microgrid load management control application”, 2nd SAIEE Smart Grid Conf., Midrand, South Africa, Sep 19-21, 2017.
- [265] M. Sibiya, R. Naidoo, and, R. C. Bansal, “A review of the code of practice for electricity metering to regulate smart metering and small scale embedded distributed generation”, 2nd SAIEE Smart Grid Conf., Midrand, South Africa, Sep 19-21, 2017.

- [266] N. T. Mbungu, R. Naidoo, R. C. Bansal, M. Bipath, Grid integration and optimization through smart metering”, *2nd SAIEE Smart Grid Conf.*, Midrand, South Africa, Sep 19-21, 2017.
- [267] T. Adefarati, and R. C. Bansal, “Reliability and economic evaluation of a micro grid power system”, 9th International Conference on Applied Energy (ICAE), Aug 21-24, 2017, Cardiff, UK, (also published in *Energy Procedia*, vol. 142, pp. 43-48, 2017).
- [268] M. Kumawat, N. Gupta, N. Jain and R. C. Bansal, “Optimally allocation of distributed generators in three-phase unbalanced distribution network”, 9th International Conference on Applied Energy (ICAE), Aug 21-24, 2017, Cardiff, UK, also published in *Energy Procedia*, vol. 142, pp. 749-754, 2017).
- [269] J. T. Lotter, R. Naidoo, and R. C. Bansal, “The effects of distributed generation sources within commercial retail reticulation networks”, 9th International Conference on Applied Energy (ICAE), Aug 21-24, 2017, Cardiff, UK, (also published in *Energy Procedia*, vol. 142, pp. 1765-1770, 2017).
- [270] N. K. Meena, S. Parashar, A. Swarnkar, N. Gupta, K. R. Niazi, and R. C. Bansal, “Mobile power infrastructure planning and operational management for smart city applications”, 9th International Conference on Applied Energy (ICAE), Aug 21-24, 2017, Cardiff, UK, (also published in *Energy Procedia*, vol. 142, pp. 2202-2207, 2017).
- [271] P.T. Manditereza and R. C. Bansal, “Comparison of the performance of sensitivity-based voltage control algorithms in DG-integrated distribution systems”, SAUPEC conf., 30 Jan.– 1 Feb. 2017, Stellenbosch, South Africa.
- [272] R. Naidoo, N. T. Mbungu, Ramesh Bansal, M. Bipath, "Smart SISO-MPC based energy management system for commercial buildings" Future Technologies Conference (FTC), San Francisco, United States, Dec 6-7, 2016.
- [273] J.J. Justo and R. C. Bansal “High performance model predictive control strategy: Considering nanogrid, microgrid, and virtual power plants for rapid rural electrification in SADC region” 10th IET (Tanzania) International Conference on Sustainable Development, Arusha Tanzania, Dec. 1-3, 2016.
- [274] G. Sharma, Ibraheem, and R. C. Bansal, “DFIG based AGC of power system using robust methodology”, 8th International Conference on Applied Energy (ICAE2016), Oct 8-11, 2016, Beijing, China, (also published in *Energy Procedia*, vol. 105, pp. 590-595, 2017).
- [275] D. H. Tungadio, and R. C. Bansal, “Active power reserve estimation of two interconnected microgrids”, 8th International Conference on Applied Energy (ICAE2016), Oct 8-11, 2016, Beijing, China, (also published in *Energy Procedia*, vol. 105, pp. 3909-3914, 2017).
- [276] T. Adefarati, and R. C. Bansal, “Impacts of PV-wind-diesel-electric storage hybrid system on the reliability of a power system”, 8th International Conference on Applied Energy (ICAE2016), Oct 8-11, 2016, Beijing, China, (also published in *Energy Procedia*, vol. 105, pp. 616-621, 2017).

- [277] N.T. Mbungu, R.M. Naidoo, and R. C. Bansal, “Real-time electricity pricing: TOU-MPC based energy management for commercial buildings”, 8th International Conference on Applied Energy (ICAE), Oct 8-11, 2016, Beijing, China, (also published in Energy Procedia, vol. 105, pp. 3419-3424, 2017).
- [278] M. W. Siti, R. Tiako and, R. C. Bansal, “Optimal energy control of a grid-connected solar-wind with pumped hydro storage”, 5th *IET-Renewable Power Generation Conference, Sep 21-23, 2016, London, U.K.*
- [279] M. J. Slabbert, R. Naidoo, and R. C. Bansal, “Adaptive protection settings for medium voltage feeders”, SAIEE Smart Grid Conference, Johannesburg, South Africa, Feb 23-25, 2016, Track 3, pp. 1-5.
- [280] N. Kanwar, N. Gupta, K. R. Niazi, A. Swarnkar, and R. C. Bansal, “Application of TLBO for distribution network planning via coordination of distributed generation and network reconfiguration”, 9th IFAC symposium on Control of Power and Energy Systems, December 9-11, 2015, Indian Institute of Technology, Delhi, India.
- [281] V. Jadoun, N. Gupta, K. R. Niazi, A. Swarnkar, and R. C. Bansal, “Improved particle swarm optimization for multi-area economic dispatch with reserve sharing scheme”, 9th IFAC symposium on Control of Power and Energy Systems, December 9-11, 2015, Indian Institute of Technology, Delhi, India.
- [282] M. Modi, A. Swarnkar, N. Gupta, K. R. Niazi, and R. C. Bansal, “Stochastic economic load dispatch with multiple fuels using improved particle swarm optimization”, 9th IFAC symposium on Control of Power and Energy Systems, December 9-11, 2015, Indian Institute of Technology, Delhi, India.
- [283] D. Chitara, A. Swarnkar, N. Gupta, K. R. Niazi, and R. C. Bansal, “Optimal tuning of multi-machine power system stabilizer using cuckoo search algorithm”, 9th IFAC symposium on Control of Power and Energy Systems, December 9-11, 2015, Indian Institute of Technology, Delhi, India.
- [284] M. A. Mahmud, H. R. Pota, A. M. T. Oo, and R. C. Bansal, “Nonlinear controller design for vehicle-to-grid systems with output LCL filters”, 9th IFAC symposium on Control of Power and Energy Systems, December 9-11, 2015, Indian Institute of Technology, Delhi, India.
- [285] G. Sharma, R. C. Bansal, Ibraheem, and K.R. Niazi, “Application of softcomputing technique for frequency control of the power system in a deregulated environment”, IEEE International Conference on Computer Graphics, Vision and Information Security (CGVIS), pp. 1-6, Nov 2-3, 2015.
- [286] K. Musasa, M. N. Gitau, and R. C. Bansal, “Comparative analyses of DC collection grid-based power converters topologies for offshore wind farm application”, 4th Renewable Power Generation Conference (RPG), 17 – 18 October 2015, Beijing, China.
- [287] A. Kumar, B. Sah, Y. Deng, X. He, R. C. Bansal, and Praveen Kumar, “Autonomous hybrid renewable energy system optimization for minimum cost and reliability assessment”, 4th Renewable Power Generation Conference (RPG), 17 – 18 October 2015, Beijing, China.

- [288] V. K. Jadoun, N. Gupta, K. R. Niazi, A. Swarnkar, and R. C. Bansal, "Short term non-convex economic hydro-thermal scheduling using dynamically controlled particle swarm optimization", 3rd Southern African Solar Energy Conference (SASEC2015), 11 –13 May 2015, Kruger National Park, South Africa.
- [289] N. Kanwar, N. Gupta, K. R. Niazi, A. Swarnkar, and R. C. Bansal, "Multi-objective optimal DG allocation in distribution networks using BAT algorithm", Third Southern African Solar Energy Conference (SASEC2015), 11 –13 May 2015, Kruger National Park, South Africa.
- [290] V. K. Jadoun, N. Gupta, K. R. Niazi, A. Swarnkar, and R. C. Bansal, "Multi-area economic dispatch using improved particle swarm optimization", 7th International Conference on Applied Energy (ICAE), March 28-31, 2015, Abu Dhabi, UAE.
- [291] N. Kanwar, N. Gupta, A. Swarnkar, K. R. Niazi, and R. C. Bansal, "New sensitivity based approach for optimal allocation of shunt capacitors in distribution networks using PSO", 7th International Conference on Applied Energy (ICAE), March 28-31, 2015, Abu Dhabi, UAE.
- [292] K. Musasa, M. N. Gitau, and R. C. Bansal, "Dynamic analysis of DC-DC converter internal to an offshore wind farm", 3rd Renewable Power Generation Conference (RPG), 24 – 25 September 2014, Naples, Italy.
- [293] G. Sharma, K. R. Niazi, Ibraheem, and R. C. Bansal, "LS-SVM based AGC of power system with dynamic participation from DFIG based wind turbines", 3rd Renewable Power Generation Conference (RPG), 24 – 25 September 2014, Naples, Italy.
- [294] H. R. Pota, M. J. Hossain, M. A. Mahmud, and R. C. Bansal, "Islanded operation of microgrids with inverter connected renewable energy resources", 19th IFAC World Congress, Cape Town, South Africa, Aug 24-29, 2014.
- [295] V. Dlamini, R. C. Bansal, and R. Naidoo, "An improved motor replacement strategy using non-intrusive motor efficiency estimation", Industrial and Commercial Use of Energy (ICUE) Conference, Cape Town, South Africa, Aug. 18-20, 2014.
- [296] M. J. Hossain, M. A. Mahmud, H. R. Pota, N. Mithulananthan, and R. C. Bansal, "Distributed control scheme to regulate power flow and minimize interactions in multiple microgrids", IEEE Power & Energy Society General Meeting, 27-31 July 2014 at the Gaylord National Resort and Convention Center, Washington, DC, USA.
- [297] S. Kabir, O. Krause, R. C. Bansal, and J. Ravishanker, "Dynamic voltage stability analysis of sub-transmission networks with large-scale photovoltaic systems", IEEE Power & Energy Society General Meeting, 27-31 July 2014 at the Gaylord National Resort and Convention Center, Washington, DC, USA.
- [298] J. Yaghoobi, N. Mithulananthan, T.K. Saha, and R. C. Bansal, "An analytical approach to assess static voltage stability of distribution system with rooftop PV units", IEEE Power & Energy Society General Meeting, July 27 - July 31, 2014. Washington, DC, USA.
- [299] A. Chidurala, N. Mithulananthan, T.K. Saha, and R. C. Bansal, "Analysis of harmonic

- emissions in grid connected photovoltaic systems- a case study on a large-scale PV site”, IEEE Power & Energy Society General Meeting, July 27 - July 31, 2014. Washington, DC, USA.
- [300] K. Gajrani, A. Bhargava, K. G. Sharma, and R. C. Bansal, “Performance assessment of offshore wind farm communication network using MPLS based traffic engineering”, *International Conference on Advances in Energy Research*, IIT Bombay, Dec. 10-12, 2013.
- [301] K. Gajrani, A. Bhargava, K. G. Sharma, and R. C. Bansal, “Dynamic performance improvement of wind power integrated grid using TCP/IP communication network”, *IEEE Conference on Clean Energy and Technology*, Langkawi, Malaysia, Nov. 18-20, 2013.
- [302] K. Gajrani, A. Bhargava, K. G. Sharma, and R. C. Bansal, “Impact of integration of solar and wind power on small signal stability using wavelet transform”, *IEEE Conference on Clean Energy and Technology*, Langkawi, Malaysia, Nov. 18-20, 2013.
- [303] K. Gajrani, A. Bhargava, K. G. Sharma, and R. C. Bansal, “Cyber security solution for wide area measurement systems in wind connected electric grid”, *IEEE PES Innovative Smart Grid Technologies (ISGT) Asia Conference*, Bangalore, Nov. 10-13, 2013.
- [304] J. Yaghoobi, N. Mithulananthan, T.K. Saha, and R. C. Bansal, “Investigating static voltage stability of distribution system with rooftop PV units”, *Australasian Universities Power Engineering Conference (AUPEC 2013)*, Tasmania – Australia, 29 Sept. -3rd Oct. 2013.
- [305] X. Liu and R. C. Bansal, “Computational fluid dynamics to optimize coal fired power plant boiler combustion process”, *Fifth International Conference on Applied Energy (ICAE)*, July 1-4, 2013, Pretoria, South Africa.
- [306] S. Kabir and R. C. Bansal, “Effect of partial shading on photovoltaic with advanced MPPT scheme”, *IEEE International Conference on Power & Energy*, Kota Kinabalu, Malaysia, Dec. 2-5, 2012.
- [307] A. Mohapatra, B.K. Panigrahi, B. Singh, and R. C. Bansal, “Optimal placement of capacitors in distribution networks using a modified teaching-learning based algorithm”, *3rd International Conference on Swarm, Evolutionary, and Memetic Computing, SEMCCO*, Bhubaneswar, India, 20 -22 Dec. 2012.
- [308] S. Kabir, N. Mithulananthan, and R. C. Bansal, “Impact of large-scale photovoltaic system on static voltage stability in sub transmission network”, *5th Annual International Energy Conversion Congress and Exhibition (ECCE)*, Melbourne, Australia, June 3-6, 2013.
- [309] M. B. Nappu, A. Arief, T. K. Saha, and R. C. Bansal, “Investigation of LMP forecasting for congested power system”, *Australasian Universities Power Engineering Conference (AUPEC 2012)*, Bali – Indonesia, 26- 29 Sept. 2012, Paper No. P070.
- [310] M. B. Nappu and R. C. Bansal, “Evaluation of GENCO's strategy in creating a congested system for exercising market power to the submission site”, *IEEE PES General Meeting*, July 26 - July 29, 2011, Detroit, pp. 1-7.

- [311] X. Liu and R. C. Bansal, "Integrating online learning technology with CFD to control combustion process", *IEEE Recent Advances in Intelligent Computational Systems (RAICS)*, 22-24 Sep. 2011, Trivandrum, Kerala, India.
- [312] A. Lomi, R. Shah, N. Mithulananthan, R. C. Bansal and K. Y. Lee, "Power system voltage stability as affected large-scale pv penetration", 3rd International Conference on Electrical Engineering and Informatics (ICEEI 2011), Institute Technology Bandung, Bandung, Indonesia on July 17-19, 2011.
- [313] N. H. Radzi, R. C. Bansal, Z. Y. Dong, and M. Y. Hassan, "Modification on postage-stamp coverage method for local load case of transmission service charges", 4th International Conference on Electric Utility Deregulation and Restructuring and Power Technologies (DRPT), Weihai, Shandong, China, 6-9 July 2011.
- [314] A. Arulampalam, N. Mithulananthan, R. C. Bansal, and T.K. Saha, "Micro-grid control of PV-wind-diesel hybrid system with islanded and grid connected operations", *IEEE International Conference on Sustainable Energy Technologies (ICSET)*, Sri Lanka, Dec. 6 – 9, 2010, pp. 1-5.
- [315] N. H. Radzi, Z.Y. Dong, and R. C. Bansal, "Justified distribution factors approach for pool modelling", 9th International Power and Energy Conference (IPEC), Singapore, Oct 27-29, 2010, pp. 1117-1122.
- [316] V. Kumar, R. C. Bansal, and R. R. Joshi, "Control of the matrix converter based WECS for fault ride-through enhancement", *IEEE Joint International Conference on Power Electronics, Drives and Energy Systems (PEDES) & 2010 Power India*, Dec. 20-23, 2010, 1 - 7.
- [317] K. Q. Hua, Z. Y. Dong, R. C. Bansal, J. Zhao, G. Chen, and Y. Su, "A method for wind farm planning in a market environment", *Proc. IEEE PES General Meeting*, July 26 - July 29, 2010, Minneapolis, Minnesota, USA, paper No. 1188, pp. 1-7.
- [318] R.K. Pachar, H.P. Tiwari, and R. C. Bansal, "STS based protection of sensitive equipment during starting of induction motors", Proceedings of the 4th WSEAS International Conference on Circuits, Systems, Signal and Telecommunications (CISST '10), Harvard University, Cambridge, USA January 27-29, 2010, pp. 60-64.
- [319] R. C. Bansal, T. S. Bhatti, and V. Kumar, "Reactive power control of autonomous wind-diesel hybrid power systems using ANN", *Proc. 8th Int. Power Engineering Conf. (IPEC 2007)*, Singapore, pp. 1376-1381, 3 - 6 Dec. 2007.
- [320] R. C. Bansal and T. Hammons, "A discussion on the restructuring of Indian power sector", *International Practices in Energy Development and Power Generation in Managing Rapid Demand Growth in Large Asian Economies: China and India*, General Meeting, Tampa, FL, USA, 24-28 June 2007.
- [321] R. C. Bansal, T. S. Bhatti, and D. P. Kothari, "Automatic reactive power control of wind-diesel-micro-hydro autonomous hybrid power systems using ANN tuned static var compensator", *Proc. Int. Conf. on Large Engineering System Conference on Power Engineering (LESCOPE)*, Montreal, Canada, pp. 182-188, May 7-9, 2003.

- [322] T. S. Bhatti, R. C. Bansal, and D. P. Kothari, "Reactive power control of isolated hybrid power systems", *Proc. of Int. Conf. on Computer Application in Electrical Engineering Recent Advances (CERA)*, Indian Institute of Technology Roorkee (India), pp. 626-632, Feb. 21-23, 2002.

R.C. BANSAL