CV Outlines:

Profile summary of Dr. Jai Govind Singh

Employment background:
July 2016 – present: Associate Professor, AIT
Dec 2009 – June 2016: Assistant Professor, AIT
July 2009 – Oct 2009: Postdoctoral Research Fellow, University of Queensland, Brisbane
April 2008 – June 2009: Postdoctoral Research Associate, KTH Stockholm
Aug 2003 – Feb 2008: Doctoral Research Scholar, IIT Kanpur, India
Jun 2003 – July 2003: Research Fellow in ARRPEEC-III, SERD, AIT, Thailand.
March 2003 – July 2003: Sr. Project Associate in (ARRPEEC-III)," EED, IIT Kanpur, India

Teaching and Research focuses:
1. Smart Grid and Variable Renewable Energy Integration
2. Microgrid Design, Control and Applications
3. Power System Restructuring and Economics
4. Design and Operations of Transmission and Distribution Systems
5. Electric and Hybrid Electric Vehicles
6. Energy Systems, Economics and Policy
7. Energy Storage and Performance Assessments

Academic degrees:
1. Ph.D.: IIT Kanpur, India
2. M. Tech.: IIT Roorkee, India
3. B.E.: MNNIT Allahabad, India

Total research projects: 19
Major sponsors are ERASMUS+, USAID, DST India, Bangchak Petroleum Thailand, IRENA, ADB, EBARA Japan, NSTDA, IEEE PES, ADEME, PEA, Abt Associates, Tetra Tech, etc.

Chair of Master/Doctoral research supervisions: 73
1. Master: **63** in AIT and **3** in KTH Stockholm
2. Doctoral: **7** in AIT Thailand

Training programs organized: 3
1. MP Power Distribution utility
2. Assam Power Distribution utility
3. Assam power GTD utilities

Member of research supervisions committee: 169
2. Master: **162**
3. Doctoral: **7**

Member of Professional Body
1. Senior Member of IEEE
2. Fellow of The Institute of Engineers, India

No. of development projects:
1. Pump storage Micro-hydro system
2. 3 kW solar PV testing
3. Online electricity monitoring
4. 20 kW Microgrid

Published Research Articles: 106
1. Peer Reviewed International Journals: **34**
2. Peer Reviewed International Conferences: **62**
3. Book chapter: **4**
4. Monographs, reports, policy briefs: **5**
5. Workshop: **1**

Int. conferences organized:
1. Conference director: **1**
2. General Co-chair: **1**
3. Member of the technical organizing committee**: 10**
4. Advisory board: **9+**

Research impacts:
1. **SCOPUS:** Total citations=740, h-index=14, i10-index=23
2. **Google Scholar:** Total citations=1146, h-index=17, i10-index=31
3. **Researchgate:** Total citations=964, h-index=15, RG Score=24.22

Invited as keynote/expert/examiners:
1. Keynote speeches: **15**
2. Expert/Talks: **26**
3. Lectures in training programs for utilities: **30+**
4. External examiner of Doctoral Thesis: **19**

I. Biographical Data

A. Name of candidate: Jai Govind Singh

B. Education

Ph.D. (2008), Power and Control, EED, Indian Institute of Technology, Kanpur, India

M.Tech. (2003), Power System, EED, Indian Institute of Technology, Roorkee, India

B.E. (2001), Electrical Engineering, Motilal Nehru National Institute of Technology, Allahabad, India

C. Positions held

Duration	Position	Affiliation
January 2020 – December 2022	Head of EECC Department	Department of Energy, Environment and Climate Change, SERD, AIT, Thailand.
January 2019 – December 2020	Chair of 'Sustainable Energy Transition' Academic Program	Department of Energy, Environment and Climate Change (EECC), SERD, AIT, Thailand.
January 2019 – December 2020	Director of RERIC	International Energy Journal, EECC Department
June 2017 – December 2018	Director of RERIC	International Conference on Green Energy for Sustainable Development, 24-26 October, Phuket, Thailand
July 2016 – present	Associate Professor	Department of Energy, Environment and Climate Change, SERD, AIT, Thailand.
December 2009 – June 2016	Assistant Professor	Department of Energy, Environment and Climate Change, SERD, AIT, Thailand.
November 2013 – December 2015	Coordinator of 'Energy' Academic Program	Department of Energy, Environment and Climate Change, SERD, AIT, Thailand.
November 2013 – December 2015	Coordinator of 'Energy Business Management' Academic Program	MBA in Energy Business, SERD/SOM, AIT, Thailand.
November 2013 – December 2015	Director of RERIC	Regional Energy Resources Information Centre (RERIC), AIT
July 2009 – October, 2009	Postdoctoral Research Fellow	University of Queensland, Brisbane, Australia.
April 2008 –	Postdoctoral Research	Electric Power System Division, Royal Institute of

June, 2009	Associate	Technology-KTH, Sweden.
June 2003 – July 2003	Research Fellow	Asian Regional Research Program in Energy, Environment and Climate-III (ARRPEEC-III), Energy FoS, SERD, AIT, Thailand.
March 2003 – July 2003	Sr. Project Associate	ARRPEEC-III," Department of electrical engineering, IIT Kanpur, India

D. Special honors and awards

i) Recipient of MHRD (Ministry of Human Resource Department, India) Fellowship for Doctoral study at IIT Kanpur, India.
ii) Recipient of MHRD (Ministry of Human Resource Department, India) Fellowship for Master study at IIT Roorkee, India.
iii) Recipient of Young Scientist Travel Financial Assistantship award from Department of Science and Technology (DST), India.
iv) Recipient of International Travel Support award to attend a conference from Dean of Resources and Alumni Office, Indian Institute of Technology, Kanpur, India.
v) Recipient of awards in terms of free accommodation by *IEEE PES Student Support Committee* to attend IEEE conference in Florida, USA, 2007, during my Doctoral study.
vi) Three times recipients of cash award by IIT Kanpur on research articles published in international journals.
vii) Recipient of class merit-cum-means scholarship in Under Graduate Study.

II. Pedagogy

A. Experience as a teacher (all are Post Graduate courses unless mentioned)

Year	Semester	Courses	Course category	Remarks
2022 (5.5 Credits)	January	ED86.07: Microgrid Design, Control and Applications 3(2-3)	Elective	50% co-teaching
		ED86.11: Smart Grid and Variable Renewable Energy Integration 3(3-0)	Elective	
		ED86.09: Energy Systems, Economics and Policy 3(3-0)	Required	33% co-teaching
2021 (10 Credits)	January	ED86.07: Microgrid Design, Control and Applications 3(2-3)	Elective	50% co-teaching
		ED86.11: Smart Grid and Variable Renewable Energy Integration 3(3-0)	Elective	
		ED86.09: Energy Systems, Economics and Policy 3(3-0)	Required	33% co-teaching
	Inter-sem	ED86.19: Electric and Hybrid Electric Vehicles 3(3-0)	Elective	
	August	ED86.13: Power System Restructuring and Economics 3(3-0)	Elective	50% co-teaching
2020 (12 Credits)	January	ED72.22: Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
		ED72.47: Smart Grid and Electrical Energy Management Systems 2(2,0)	Elective	

		ED72.9028: Renewable Energy Integration and DC Microgrid 1(1-0)	Elective	
	Inter-sem	ED72.9030: Electric and Hybrid Electric Vehicles 3(3,0)	Elective	
	August	ED86.08: Design and Operation of Transmission and Distribution systems 3(2-3)	Elective	**Revised**
		ED86.13: Power System Restructuring and Economics 3(3-0)	Elective	**Revised** and 50% co-teaching
2019 (12 credits)	January	ED72.22:Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
		ED72.47:Smart Grid and Electrical Energy Management Systems 2(2,0)	Elective	
		ED72.9028: Renewable Energy Integration and DC Microgrid 1(1-0)	Elective	
	Inter-sem	ED72.9030: Electric and Hybrid Electric Vehicles	Elective	New
	August	ED72.08:Power Distribution Systems 3(3,0)	Elective	
		ED72.07:Power System Design and Operations 3(2,3)	Elective	50% co-teaching
2018 (13 Credits)	January	ED72.21:Power System Dynamics and Stability 3(2,3)	Elective	
		ED72.22:Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
		ED72.20: Workshop on Energy Issues and Communication 1(0,2)	Required	
	Inter-sem	ED72.47:Smart Grid and Electrical Energy Management Systems 2(2,0)	Elective	
		ED72.9028: Renewable Energy Integration and DC Microgrid 1(1-0)	Elective	
	August	ED72.08:Power Distribution Systems 3(3,0)	Elective	
		ED72.07:Power System Design and Operations 3(2,3)	Elective	50% co-teaching
2017 (13 Credits)	January	ED72.21:Power System Dynamics and Stability 3(2,3)	Elective	
		ED72.22:Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
		ED72.20: Workshop on Energy Issues and Communication 1(0,2)	Required	
	Inter-sem	ED72.47:Smart Grid and Electrical Energy Management Systems 2(2,0)	Elective	
		ED72.9028: Renewable Energy Integration and DC Microgrid 1(1-0)	Elective	
	August	ED72.08:Power Distribution Systems 3(3,0)	Elective	
		ED72.07:Power System Design and Operations 3(2,3)	Elective	50% co-teaching
2016	January	ED72.21:Power System Dynamics and Stability 3(2,3)	Elective	

(13+4† credits)		ED72.22:Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
		ED72.20: Workshop on Energy Issues and Communication 1(0,2)	Required	
	Inter-sem	ED72.47:Smart Grid and Electrical Energy Management Systems 2(2,0)	Elective	
		ED72.9028: Renewable Energy Integration and DC Microgrid 1(1-0)	Elective	
	August	ED72.08:Power Distribution Systems 3(3,0)	Elective	
		ED72.07:Power System Design and Operations 3(2,3)	Elective	50% co-teaching
		BS208:Electrical Engineering and Electronics for Bio-Engineers 4 (3-1)	Elective	UG
2015 (12+4† credits)	January	ED72.21:Power System Dynamics and Stability 3(2,3)	Elective	
		ED72.22:Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
		ED72.20: Workshop on Energy Issues and Communication 1(0,2)	Required	
	Inter-sem	ED72.9022:Smart Grid for Sustainable Development 2(2,0)	Elective	
	August	ED72.07:Power System Design and Operations 3(2,3)	Elective	50% co-teaching
		ED72.08:Power Distribution Systems 3(3,0)	Elective	
		BS208:Electrical Engineering and Electronics for Bio-Engineers 4 (3-1)	Elective	UG
2014 (11+4† credits)	January	ED72.21:Power System Dynamics and Stability 3(2,3)	Elective	
		ED72.22:Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
	Inter-sem	ED72.9022:Smart Grid for Sustainable Development 2(2,0)	Elective	
	August	ED72.07:Power System Design and Operations 3(2,3)	Elective	50% co-teaching
		ED72.08:Power Distribution Systems 3(3,0)	Elective	
		BS208:Electrical Engineering and Electronics for Bio-Engineers 4 (3-1)	Elective	UG
2013 (14.5+3* credits)	January	ED72.21:Power System Dynamics and Stability 3(2,3)	Elective	
		ED72.22:Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
		ED72.22:Power Sector Management under Deregulation 3(3,0) (PMEBM)*	Elective	50% co-teaching
	Inter-sem	ED72.9022:Smart Grid for Sustainable Development 2(2,0)	Elective	

	August	ED72.07:Power System Design and Operations 3(2,3)	Elective	
		ED72.08:Power Distribution Systems 3(3,0)	Elective	
		ED72.9026:Integration of Renewable Sources in Power Systems 2(2,0)	Elective	New course
2012 (12.5+3* credits)	January	ED72.21:Power System Dynamics and Stability 3(2,3)	Elective	
		ED72.22:Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
	Inter-sem	ED72.9022:Smart Grid for Sustainable Development 2(2,0)	Elective	
	August	ED72.07:Power System Design and Operations 3(2,3)	Elective	
		ED72.08:Power Distribution Systems 3(3,0)	Elective	
		ED72.08:Power Distribution Systems 3(3,0) (PMEBM)*	Elective	
2011 (12.5 credits)	January	ED72.21:Power System Dynamics and Stability 3(2,3)	Elective	
		ED72.22:Power Sector Management under Deregulation 3(3,0)	Elective	50% co-teaching
	Inter-sem	ED72.9022:Smart Grid for Sustainable Development 2(2,0)	Elective	New course
	August	ED72.07:Power System Design and Operations 3(2,3)	Elective	
		ED72.08:Power Distribution Systems 3(3,0)	Elective	
2010 (10 credits)	January	ED72.21:Power System Dynamics and Stability 3(2,3)	Elective	
	August	ED72.07:Power System Design and Operations 3(2,3)	Elective	
		ED72.08:Power Distribution Systems 3(3,0)	Elective	
		ED72.9019:Integration of renewable energy resources in power system 1(1,0)	Elective	New course

*PMEBM: Professional Master in Energy Business Management
†Under Graduate (UG) Course

Post Graduate Taught Courses/Tutorials at other Institutions:

- Power system advanced course: (**KTH, Stockholm**, **Sweden**, as a teaching assistant)
- Power System Simulations Lab Development: 1st year postgraduate Lab (**EED, IIT Kanpur**, as tutor)
- Power system economics operation and control: 1st year postgraduate course (**EED, IIT Kanpur,** as a tutor)
- Economic operation and control of power systems: Sequential M. Tech. Program of Uttar Pradesh Technical University, Lucknow (**Invited Course Lectures**)

Under Graduate Taught Courses/Tutorials at other Institutions:

- Engineering Science: 1st year undergraduate course (**IIT Roorkee**, as a tutor)
- Engineering Science Optional: 2nd year undergraduate course (**IIT Roorkee**, as a tutor)
- Engineering Science: 1st year undergraduate course (**IIT Kanpur**, as a tutor)

- Engineering Science Optional: 2nd year undergraduate lab (**IIT Kanpur**, as a tutor)
- Basic Power Electronics: 2nd year undergraduate course (**IIT Kanpur,** as a tutor)

B. **Pedagogical Development**

1. Grants related to pedagogy and curriculum development.
   i) Developing curricula for master's degree Program under the project 'Mastering in Energy Supply for Isolated Areas (MESfIA)' sponsored by ERASMUS+, 2019-2021.
   ii) I was involved in developing two Master Courses for National University of Laos (NUOL) in a project of curriculum development and sponsored by SIDA, 2011-2012.

2. Initiation of new courses, degree programs, curricula (indicate the period delivered)
   i) As a Chair of Energy Academic Program, led the team to develop a brand-new Postgraduate Program called as 'Sustainable Energy Transition' for Master and PhD degree students, which is approved from Academic Senate and implemented from August 2020. This new program reflects all new developments in technological advancement for sustainable energy as well as catering the emerging challenges in society and environment. Therefore, all the courses are being upgraded to cater the above things.
   ii) Offered a 3 credit new course on *Electric* and *Hybrid Electric Vehicles* 3(3,0) in Inter-sem 2019.
   iii) A one credit new course titled **"***ED72.9028: Renewable Energy Integration and DC Microgrid 1(1-0)"* has been developed and offered in Inter semester 2016.
   iv) Contributed in developing new UG curricula (BS208: Electrical Engineering and Electronics for Bio-Engineers 4 (3-1)) in August 2014.
   v) A new doctoral degree program titled "PhD in Energy Business" has been developed in collaboration with SOM in 2014.
   vi) A new Policy and Procedure has been developed in collaboration with SOM to enabled "Professional Master" degree holders to be eligible to apply for regular AIT Master Degree from 2014 with option to transfer credits gained in their Professional Master degree.
   vii) A new Policy and Procedure has been developed in collaboration with SOM to enabled "Professional Master" degree holders to be eligible to apply directly in Unified Master leading to Doctoral degree programs from 2014 with transfer of credits gained in their Professional Master degree.
   viii) One credit previously developed course *ED72.9019* modified and extended in two credit course titled **"***ED72.9026: Integration of Renewable Energy Sources in Power System 2(2,0)"* and offered in August semester 2013.
   ix) Involved as a member and contributed to develop a new degree program called as "MBA in Energy Business" and first batch started from August-2012.
   x) Involved as member and contributed to develop a new professional program called as "Professional Master in Energy Business Management" and first batch started from August-2012.
   xi) A two credit new interdisciplinary course titled **"***ED72.9022: Smart Grid for Sustainable Development 2(2,0)"* has been developed and offered in each Inter semester from 2011 and onwards.
   xii) A one credit course titled **"***ED72.9019: Integration of Renewable Energy Resources into Power System 1(1,0)"* has been developed and offered in Inter semester 2010.

3. Development and introduction of innovative pedagogical techniques.

   i) Developing the new course 'ED86.07: Microgrid Design, Control and its Applications' and planned to offer (50%) in January 2021.

ii) Revising the course on 'ED86.11: Smart Grid and Variable Renewable Energy Integration' and planned to offer in January 2021.

iii) Developing the new course 'ED86.09: Energy Systems, Economics and Policy' and planned to offer (33%) in January 2021.

iv) Revised and offered the course 'ED86.08: Design and Operation of Transmission and Distribution Systems' in August 2020.

v) Revised and offered (50%) the course 'ED86.13: Power System Restructuring and Economics' in August 2020.

vi) Course materials prepared for 3 credit new course on *Electric and Hybrid Electric Vehicles* 3(3,0).

vii) A one credit revised new course material entitled **"***ED72.9028: Renewable Energy Integration and DC Microgrid 1(1,0)"* has been developed in 2016 for post graduate students.

viii) Revised 8 courses in 2015 under curriculum review process lead by ADRC, AIT.

ix) Prepared course materials for new UG curricula (BS208: Electrical Engineering and Electronics for Bioengineers 4 (3-1)) in August 2014.

x) A two credit new course material entitled **"***Integration of Renewable Energy Sources in Power System (ED72.9026)"* has been developed and offered in 2013 for post graduate students.

xi) A two credit new course material entitled **"***Smart Grid for Sustainable Development (ED72.9022)"* has been developed in 2011 for post graduate students and since then continuously offering in every inter-semester.

xii) A one credit new course material entitled **"***Integration of Renewable Energy Resources into Power System (ED72.9019)"* has been developed in 2010 for post graduate students.

xiii) I have revised/updated half of three credit course entitled **"***Power Sector Management under Deregulation (ED72.22)"* in 2011 and onwards.

4. Participation in workshops, short courses, etc. relating to improvement of teaching.

i) A Webinar on **'The Future of Education — Digital, Immersive, and Seamless,'** organized by Jicara Media Pte. Ltd., 1st September 2021.

ii) IEI Technical Webinar on **Electric Vehicles: The Future of Energy & Mobility for Sustainable Development,** 28 August 2021.

iii) Seminar on '**Blockchain 1-2-3, What Electrical Engineers Need to Know!**' organized by IEEE Thai Chapter on 12th December in Centara Grand at Central Ladprao, Bangkok.

iv) Institute wide workshops**:** ERASMUS + project proposals titled **"Practical Approach on Erasmus + Capacity Building in Higher Education** organized by the President's Office and the Sponsored and Contracted Projects Unit on 30th October 2018.

v) IEEE PES Webinar, "How to Write a Quality Technical Paper and Where to Publish Within IEEE," presented by Saifur Rahman, Advanced Research Institute at Virginia Tech, on 3rd March, 2015.

vi) Wind Power Integration Seminar, 27th April 2009, KTH, Sweden.

vii) Short-term training course on "*Best Practices in Transmission and Distribution of Power"*, 27-29, November, 2007, IIT Kanpur.

viii) Short-term QIP course on "*Power System Operation and Control"*, IIT Kanpur, August 2006.

ix) National Workshop on "Electric Power Quality" during Nov. 9-10, 2004.

x) Training workshop on "*Electric Power Distribution: Reforms, Automation and Management"*, EE Dept. IIT Kanpur, May 10-14, 2004.

III. **Student Research Supervision**

A. **Theses supervised.** Number of master and doctoral students graduated each year, on which the faculty served as committee chair or co-chair.

3.A.1 Summary of student research supervision (2008 – 2020)

	COMPLETED			IN-PROGRESS		
STUDENTS	Chair of the Committee	Co-Chair of the Committee	Member of the Committee	Chair of the Committee	Co-Chair of the Committee	Member of the Committee
Doctoral	5	2	6	5	1	3
Master's	60	4	150	2	0	10

Note: In above table, two master supervision and one co-supervision at KTH, Stockholm are also included.

B. **Doctoral students.** For each student who obtained/pursuing the doctoral degree under your supervision, provide the following:

Summary of Doctoral Research Supervisions as Chairperson:
(Name, Nationalities, Status/Year of Completion, Dissertation title)

In progress:

1. Mr. Shubham Tiwari (**Indian**, pursuing): Cooperative Energy Management for Multi Carrier Networked Microgrids Considering Uncertainties and Demand Response Program
2. Mr. N. Krishna Prakash (**Indian**, pursuing): Demand Side Management for Smart Homes
3. Mr. Firuz Ahamed Nahid (**Bangladeshi**, Co-chair, pursuing): Energy Management in Microgrid: Big Data Analytics and Customer Behavior
4. Mr. Trung Quang Nguyen (**Vietnamese**, Pursuing): Optimization of the renewable energy sources into the distribution expansion planning in term of demand response
5. Miss Panaya Sudta (**Thai**, Pursuing): Economic and Technical affectation of Prosumer Model and Disruptive Energy Technologies (**Publication:** One paper in international conference)
6. Ms. Raja Nivedha (**Indian**, Pursuing): Dynamic performance analysis of power system with low rotational inertia equipment (**Publication:** Two paper in international conference)

Completed:

7. Mr. Pornchai Chaweewat (**Thai**, Pursuing, 2021): Electricity Price Forecasting in Smart Grid Using Machine Learning (**Publication:** one in an international journal and another two paper in international conferences) **(working in public company, i.e. Provincial Electricity Authority (PEA), Thailand)**
8. Ms. Anongpun Man-Im (**Thai**, Co-chair, 2019): Multi-objective OPF using Stochastic Weight Trade-off NSPSO (**Publication:** Two papers in international conference and another one in international journal, and one book chapter) **(working in public company, i.e. Electricity Generating Authority of Thailand (EGAT))**
9. Mr. Nimal Madhu M (**Indian**, 2016): Power Flow and ATC Estimation in Modern Power Systems (**Publication:** 5 articles in journal and 5 international conference papers are published) **(working as a postdoctoral fellow in AIT)**
10. Mr. Nikhil Sasidharan (**Indian**, 2016): Renewable Powered Hybrid AC/DC Home Community Grid (**Publication:** 5 articles in journal and 5 international conference articles are published and another one journal article is revised and resubmitted submitted) **(working as an Assistant Professor in NIT Kochi, India)**
11. Mr. Vivek Mohan (**Indian**, 2016): Stochastic Optimal Energy, Reserve and Risk Management in Microgrid (**Publication:** 6 articles in journals and 7 papers in international conference are published) **(working as an Assistant Professor in NIT Trichy, India)**

12. Mr. I Made Wartana (**Indonesian**, 2012): Optimal Placement of Multiple FACTS Devices for Maximizing Loadability by PSO (**Publication**: Published two journal and four conference articles) **(working as a Professor in Institut Teknologi Nasional (ITN) Malang, Indonesia)**
13. Mr. Sasidharan Sreedharan (**Indian**, Co-chair, 2010): Development of the PSO Based Robust Controller for Maximizing Wind Energy Penetration in Power Systems (**Publication**: Three journals and five conference articles) **(working as a Professor and Head in MES, Kerala, India)**

Summary of Doctoral Research Supervisions as Member:

(Name, Nationalities, Status/Year of Completion, Dissertation title)

In progress:

1. Mr. Varakorn Kritsnakriengkrai (**Thai**, pursuing): Development of Solar Based Vapor Absorption Chiller System for Thailand
2. Ms. Maya P **(Indian,** pursuing): Block Chain Based Energy Management for Community of Smart Buildings
3. Ms. Sarnai Battulga (): Sustainable Energy Transition Pathways for Ulaanbaatar City, Mongolia: in the Context of Climate Mitigation Efforts
4. Mr. Ankit Bhatt (**Indian**, Pursuing): Machine Learning Based Health Estimation of Second Life Batteries in Micro-Grid Storage Application
5. Mr. Patiphan Thupphae (**Thai**, Pursuing): Blockchain based energy scheduling in residential solar rooftop PV system

Completed:

6. Mr. Vatee Laoharojanaphand (**Thai**, May 2022): Optimal Generation Scheduling of Co-Located Floating Solar Photovoltaic-Wind-Hydro with Virtual Energy Banking Services **(working in public company, i.e. Electricity Generating Authority of Thailand (EGAT))**
7. Mr. Sheraz (**Pakistani, TC/SET**, December 2020): Modeling and Analysis of Delay Performance for Wireless Regional Area Networks in the Joint Scenario of Self-Coexistence and Incumbent Coexistence
8. Mr. Titipong Samakpong (**Thai**, May 2020): Optimal Power Flow Incorporating Wind and Solar Power Uncertainty Cost Using Particle Swarm Optimization with Mutation **(working Provincial Electricity Authority (PEA), Thailand)**
9. Mr. Sittichoke Pookpunt (**Thai**, 2017): Optimal Placement of Wind Turbine Using a Discrete Particle Swarm Optimization with Time-Varying Acceleration Coefficients **(working as an Assistant Professor in Narsuan University, Thailand)**
10. Mr. Minn Thu Aung (**Burmese**, WEM/SET, 2016): Assessment of Climate Change Impacts on Hydrology and Hydropower Generation in Belu Chaung Basin of Myanmar
11. Ms. Jirawadee Polprasert (**Thai**, 2016): Security Constrained Optimal Power Flow Using Self-Organizing Hierarchical Particle Swarm Optimization **(working as an Assistant Professor in Narsuan University, Thailand)**
12. Mr. Saksorn Chalermchaiarbha (**Thai**, 2012): Multi-Objective Economic Dispatch by Stochastic Weight Trade-Off Particle Swarm Optimization

C. **Master students.** For each student who obtained/pursuing the master degree under your supervision, provide the following:

Master Thesis Supervisions as Chairperson:

(Name, Nationality, Graduation Year, Thesis/Research/Project titles)

In progress

1. Mr. HOANG Minh Loc (**Vietnamese**, Research study, May 2022): Assessment of HVDC Transmission potential in Vietnam for Longer Power Corridors
2. Mr. Niphit Phothisourinh (**Thai**, December 2022): Impact of Clean Energy Transition on CO_2 Emission in Thailand Power Sector
3. Mr. Sittinan Muanchaona (**Thai**, December 2022): Fault Detection and Isolation in Medium Voltage AC Microgrid: A Case Study of Praekasa Microgrid, Thailand
4. Ms. Pwint Chit Thaw (**Burmese**, Research study, May 2022): Development of Myanmar's Power Grid Code for High Penetration of VRE
5. Mr. Muhammad Huzaifa Butt (**Pakistani**, May 2022): Analyzing the EV penetration scenarios in transport sector of Pakistan and its impact on electricity demand and GHG emission
6. Ms. Setha Leapheng (**Cambodian**, Research study, December 2021): Cambodia's Power Sector Modeling with high share of Variable Renewable Energy Sources

Completed

7. Mr. Makara Greadmeta (**Thai**, May 2022): AMI Data Analysis of Residential Customer's Electricity Consumption **(working in Electricity Generating Authority of Thailand)**
8. Ms. Yin Min Khin (**Burmese**, December 2021): Impacts of Conservation Voltage Reduction (CVR) and Demand Response (DR) Programs on AIT's Electricity Demand
9. Ms. Nopparada Sutthichackr (**Thai**, December 2021): Power Asset Management by Using Statistical Analysis and Long Short-Term Memory Networks for Oil-Immersed Transformer
10. Mr. Nuttakan Likitpolchaloon (**Thai**, May 2021): Thailand Power Sector Modeling with Variable Renewable Energy Sources and Demand Response
11. Mr. Apichok Boutcomekong (**Thai**, May 2021): Estimation of EV's Daily Load Profile in Bangkok and Thailand
12. Ms. Sadiksha Neupane Sharma (**Nepalese**, May 2021): Optimal Charging Strategies for the Electric Vehicles in a Parking Lot Integrated with Energy Storage and Solar PV Systems
13. Ms. Wanwisa Peanpitak (**Thai**, May 2020): Potential and Financial Analysis of the Floating PV in Hydropower Dams of Thailand (**Publication**: One chapter in book titled 'Recent Trends and Innovation in Solar Energy' is published by Springer Nature India Pvt. Ltd.) **(working in Electricity Generating Authority of Thailand)**
14. Mr. Kaung Myat San (**Burmese**, May 2020): Development of Deep Learning Based Methods for Short-Term Wind Speed Forecasting for Meiktila in Myanmar
15. Mr. Sathi Manikanteswara Reddy (**Indian**, Research study, May 2019): An Electric Vehicles Battery Swapping Service
16. Mr. Malisetty Revanth (**Indian**, December 2019): Determination of Optimal Demand Response Incentive in Smart Grid
17. Mr. Ugyen Tempa (**Bhutanese**, Research study, December 2019): Assessment of Solar Energy Potential using GIS and Multi Criteria Decision Making-AHP Approach: A Case Study of Bumthang Valley (**Publication**: One article published in international conference) **(working in Bhutan Power Corporation)**
18. Mr. Sonam Tobgay (**Bhutanese**, Research study, December 2019): Power Flow Tracing and Loss Allocation Methods: A Case Study of Bhutan Power System **(working in Bhutan Power Corporation)**
19. Mr. Shubham Tiwari (**Indian**, December 2019): A Decentralized Primary Frequency Response and Inertia Control of Energy Storage Units for Hybrid Renewable Energy Microgrid Systems (**Publication**: one book chapter published by John Wily) **(pursuing doctorate in AIT)**

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71. Mr. Priyanko Guha Thakurta (**KTH Sweden**, **Indian**, 2009): An Approach for Optimal Placement of SVC to Minimize Load Curtailment (**Publication**: One paper in international journal (Thomson Reuters IF= 1.084)) **(working as Postdoctoral Fellow in Energy Institute, UCD, Dublin, Ireland)**
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121. Mr. Tran Truong Han (**Vietnamese**, 2012): Technical and Financial Impact Assessment of a Wind Farm: A Case Study of a Phong Project, Vietnam
122. Mr. Jakkrapun Tessiri (**Thai**, 2012): A Study on Small Scale Applications of Biogas
123. Ms. Shahina Perveen (**Bangladeshi**, 2012, Research study): Comparative Study of Index Decomposition Analysis Approaches for CO2 Emission Changes: A Case Study in South-East Asian Countries
124. Ms. Chonlapat Leewarinpanich (**Thai**, 2011/12): Monthly Electricity Demand Forecast for Provincial Electricity Authority Using Autoregressive Integrated Moving Average (ARIMA) and Artificial Neural Network (ANN): A Case Study of Chiangmai
125. Mr. Tharakorn Chanlapa (**Thai**, 2011/12): An Assessment of Micro Hydropower for Rural Electrification: A Case Study of Maesa Basin, Thailand
126. Ms. Pun Phullsub (**Thai**, 2011/12): Electricity Consumption during Flooding in Thailand: Case Study in Bangkok, Nonthaburi and Samut Prakan
127. Mr. Peerakit Theerasopon (**Thai**, 2011/12): GHG Mitigation Potential of Clean Coal Technologies and Carbon Capture and Sequestration in Thailand
128. Ms. Klairung Kositthanasaran (**Thai**, 2011/12): Financial Risk Analysis of Biomass Power Plant: A Case study of Sungoen Rice Husk Power Plant in Nakhonratchasima
129. Mr. Warodom Khamphanchai (**Thai**, 2011): A Multi-Agent based Power System Restoration Approach in Distributed Smart Grid
130. Mr. Watchara Jaroenpan (**Thai**, 2011): Multi-Areas Economic Dispatch by Particle Swarm Optimization with Time-Varying Acceleration Coefficients
131. Mr. Pasapong Gamonwet (**Thai**, 2011): Electricity Retail Price in Competitive Market using the Risk Adjusted Capital asset pricing model (CAPM): A Case of Thailand
132. Ms. Pensupa Sattawatananon (**Thai**, 2011): Risk Analysis in Financial Evaluation of Electricity Transmission System Extension Project: A Case Study of Samui Island, Thailand
133. Mr. Hoang Thanh Hai (**Vietnamese**, 2011): Feeder Automation Planning for Hanoi Power Distribution System
134. Mr. Kritsnai Jantawongsri (**Thai**, 2011): Optimal DG Placement in Island Microgrid System by PSO with Time-Varying Acceleration Coefficients
135. Mr. Phoukhong Sinyasone (**Laotian**, 2011): Optimal Capacitor Placement for Voltage Improvement and Loss Reduction in Power Distribution Networks in Lao PDR
136. Ms. Vipasinee Kesornpikul (**Thai**, 2011): Comparison of Harmonic Behavior of Compact Fluorescent Lamp in Thailand
137. Mr. Paveen Suwannawat (**Thai**, 2011): Optimal Scheduling of Combined Heat and Power Units in a Household Islanding Microgrid System

138. Mr. Chakkapong Somsri (**Thai**, 2011): Optimal Distribution Substation Placement, Size and
139. Installation Period by Improved-Binary Particle Swarm Optimization
140. Ms. Su Yin Min (**Burmese**, 2010, Research study): Optimal TCSC Placement for Minimization of Transmission Losses
141. Mr. Bhakbhum Kaewkamthong (**Thai**, 2010, Research study): Fault Identification and Locating on PEA Distribution System
142. Mr. Phan The Hieu (**Vietnamese**, 2010): Distribution Expansion Planning: A Case of Travinh City, Vietnam
143. Mr. Thad Aosombatkun (**Thai**, 2010): An Analysis of Electricity Demand and Pollutant Emissions Using Cointegration and ARIMA Modeling: A Case Study of Thailand
144. Ms. Wikanda Pensupa (**Thai**, 2010): Assessment of Clean Development Mechanism (CDM) Projects for Net GHGs Mitigation in Thailand
145. Mr. Paradorn Sriprasat (**Thai**, 2010): Distribution System Planning Considering Grid Connected Rooftop PV Systems: A Case of Chiang Mai City, Thailand
146. Mr. Sitthigorn Promthaworn (**Thai**, 2010): Reliability Improvement by the Microgrid System: A Case of Mae Hong Son, Thailand
147. Mr. Bancha Rangsakorn (**Thai**, 2010): Multi-Objective Distributed Generation Optimal Placement in Distribution System using Nondominated Sorting Particle Swarm Optimization
148. Mr. Yusak Tanoto (**Indonesian**, 2010): Long Term Peak Load Forecasting Using Artificial Neural Networks: The Case of Java-Madura-Bali Interconnection, Indonesia
149. Mr. Nuttawich Khamsawasd (**Thai**, 2010): Optimal Bidding Strategy in LMP-Based Electricity Market Considering Demand Elasticity by Particle Swarm Optimization with Time-Varying Acceleration Coefficients
150. Mr. Apinat Saksinchai (**Thai**, 2010): Multi-objective Bidding Strategy for Generation Company using Non-Dominated Sorting Particle Swarm Optimization
151. Ms. Cherry Myo Lwin (**Burmese**, 2010): Greenhouse Gas Mitigation by Hydropower Trading from Myanmar to Thailand
152. Ms. Seema Thakur (**Nepalese**, 2010): Optimal Generation Scheduling of Cascaded Hydro-Thermal and Wind Power Generation by Particle Swarm Optimization
153. Ms. Yada Rungreang (**Thai**, 2010): Financial Transmission Right Bidding Strategy in Competitive Power Market Using Particle Swarm Optimization
154. Mr. Nitipong Thipwiang (**Thai**, 2010): Wind Power Bidding Strategy in Short-Term Power Market Based on Particle Swarm Optimization
155. Mr. Mom Kirivathanak (**Thai**, 2010): Optimal DG Placement in a Nodal Price Based Electricity Market: The Case of Cambodia
156. Mr. Dinesh Rangana Gurusinghe (**Sri Lankan**, 2010): Saddle Node Bifurcation and Voltage Stability Analysis by Particle Swarm Optimization
157. Ms. Arisa Sumthong (**Thai**, 2010): Long-term Co2 Emission Reductions Target and Scenario for the Industrial Sector of Thailand
158. Mr. Agapol Pukprayura (**Thai**, 2010): Optimal Under-Voltage Load Shedding for Northeastern EGAT System
159. Mr. Purna Bdr Rai (**Bhutanese**, 2010): Total Transfer Capability Enhancement using FACTS Devices: A Case Study of Bhutan Power System
160. Mr. Arshad Mahmood (**Pakistani**, 2010, Research study): Energy Consumption and Economic Growth in Pakistan: A Causality Analysis
161. Mr. Ngo Dang Chien (**Vietnamese**, 2010): Integrated Resources Planning Considering Demand Side Management: A Case Study of Vietnam
162. Mr. Natthakich Assanee (**Thai**, 2010, Research study): The Transition to a Hydrogen Economy in Thailand
163. Ms. Tran Thi Kieu Ngoc (**Vietnamese**, 2010, Research study): Analysis of a Micro Combined Heat Power as a Clean Development Mechanism Project in Residential Area, Hanoi, Vietnam

Member of Special Study Committee:

1. Ms. Chanatta Chaipakdee (**Thai**, May 2019): An AMI system designed for implementing in MEA areas
2. Mr. Sittinan Muanchaona (**Thai**, May 2019): Technical Issues Concerning in Microgrid Technology
3. Ms. Phusanisa Jaichaiyaphum (**Thai**, May 2019):
4. Mr. Puminut Rugthong (**Thai**, May 2019): A Study on Ethanol Production from Sujarcane Bagasse

IV. Research

A. Publications

Publications must be listed with complete citations in the categories indicated below. Include all names of authors in the order in which they appear. List the number of the first page and last page of the paper. If papers are submitted or accepted for publication, copies of the letter of receipt or acceptance must be provided. Manuscripts in preparation should not be listed. Papers of a principally pedagogical nature must be listed in Section II, C.

1. Books and Monographs:
   - **i)** Hassan Qazi Wazhat, Jai Govind Singh, Mehrdad Ghandhari. *Development of Sensitivity Based Indices for Optimal Placement of UPFC to Minimize Load Curtailment Requirements*. XR-EE-ES-2009:006. Master Thesis, KTH, School of Electrical Engineering (EES), Electric Power Systems, Stockholm, Sweden.
   - **ii)** Umair Mahmud Sheikh, Hector Latorre, Jai Govind Singh, Mehrdad Ghandhari. *Analysis of Power System Stability by Using Optimally Located SVC and STATCOM*. XR-EE-ES 2009:010. Master Thesis, KTH, School of Electrical Engineering (EES), Electric Power Systems, Stockholm, Sweden.
   - **iii)** Priyanko Guha Thakurta, Jai Govind Singh, Lennart Soder. *An Approach for Optimal Placement of SVC to Minimize Load Curtailment*. Master Thesis, KTH, School of Electrical Engineering (EES), Electric Power Systems, Stockholm, Sweden.

2. Book Chapters:

   i) Wanwisa Peanpitak and **Jai Govind Singh** (2020). *Potential and Financial Analysis of the Floating PV in Hydropower Dams of Thailand*. Springer book on 'Fundamentals and Innovations in Solar Energy,' **Springer Singapore**. DOI: 10.1007/978-981-33-6456-1

   ii) Shubham Tiwari, **Jai Govind Singh**, Weerakorn Ongsakul (2020). *A Numerical Approach for Estimating Emulated Inertia with Decentralized Frequency Control of Energy Storage Units for Hybrid Renewable Energy Microgrid System*. A book on 'Microgrid Technologies' published by **John Wiley & Sons, Inc., and Scrivener Publishing LLC.**

   iii) Madhu M., N., Singh, J. G., Mohan, V., & Ongsakul, W. (2021). *Transmission Risk Optimization in Interconnected Systems: Risk-Adjusted Available Transfer Capability*. In Vasant, P., Weber, G., & Punurai, W. (Ed.), Research Advancements in Smart Technology, Optimization, and Renewable Energy (pp. 183-199). IGI Global. http://doi:10.4018/978-1-7998-3970-5.ch010

   iv) Anongpun Man-Im, Weerakorn Ongsakul, **Jai Govind Singh** (2018). *Multi-objective Optimal Power Flow of Wind-Thermal Considering Cosr and Emission by Stochastic Weight Trade-off Chaotic Mutation Based NSPSO*. Springer Book on "Unconventional Modeling, Simulation and Optimization of Geo Science and Petroleum Engineering".

3. Refereed journal articles: international, regional, national. For each article, indicate the publisher of the journal and the number of SCOPUS citations.

3.A Summary of journal articles published

Published		
Refereed International Journals	Refereed Regional Journals	Refereed National Journals
(32)		

In Progress		
Refereed International Journals	Refereed Regional Journals	Refereed National Journals
5 manuscripts are communicated 3 manuscripts under preparation		

3**.B** Articles in Refereed **International Journals**

i) Bhatt, A., Ongsakul, W., Nimal Madhu, M., Singh, J.G. (2022): Sliding window approach with first-order differencing for very short-term solar irradiance forecasting using deep learning models. ***Sustainable Energy Technologies and Assessments***, Elsevier, 50, March 2022. (Clarivate Analytics IF=5.353)

ii) Md. Ariful Islam, Jai Govind Singh, Israt Jahan, M. S. Hossain Lipu, Taskin Jamal, Rajvikram Madurai Elavarasan, and Lucian Mihet-Popa (2021). Modeling and Performance Evaluation of ANFIS Controller-Based Bidirectional Power Management Scheme in Plug-In Electric Vehicles Integrated with Electric Grid. ***IEEE Access***, Vol. 9, pp. 166762-166780, 2021, doi: 10.1109/ACCESS.2021.3135190. (Clarivate Analytics IF=3.367)

iii) Bhatt, A., Ongsakul, W., Madhu Manjiparambil, N., Singh, J.G. (2021). Machine learning-based approach for useful capacity prediction of second-life batteries employing appropriate input selection. ***International Journal of Energy Research***, 2021, 45(15), pp. 21023–21049. (Thomson Reuters IF=5.164)

iv) S. M. Golam Mostafa, **Jai Govind Singh** and H.M. Enamul Haque (2020). An Extensive Literature Review and New Proposal on Optimal Capacitor Placement in Distribution Systems. ***Journal of Engineering Advancements***, 01(04) 2020, pp 150-169.

v) Chaweewat, P., Singh, J.G. (2020). An electricity price interval forecasting by using residual neural network. ***International Transactions on Electrical Energy Systems***, 2020, 30(9), e12506. (Thomson Reuters IF=1.692)

vi) Md. Ariful Islam and Jai Govind Singh (2020). Duck Curve Problem Formulation and Solving Strategies by Utilizing PVr, PEVs, Load Shifting and ANFIS for Greening Bangladesh. ***International Energy Journal*** *20* Special Issue 3A, 453 – 470. (SCOPUS Indexed)

vii) Anongpun Man-Im, Weerakorn Ongsakul, **Jai Govind Singh**, Madhu M. N. (2019). Multi-objective optimal power flow considering wind power cost functions using enhanced PSO with chaotic mutation and stochastic weights. ***Electrical Engineering,*** 101(3), pp. 699–718, Springer Verlag. (Thomson Reuters IF=1.836)

viii) Pham Tuan Ngoc and **Jai Govind Singh** (2017). Short Circuit Current Level Reduction in Power System by Optimal Placement of Fault Current Limiter. ***International Transactions on Electrical Energy Systems***, 27(12). *https://doi.org/10.1002/etep.2457* (Thomson Reuters IF=1.692)

ix) Anongpun Man-Im, Weerakorn Ongsakul, **Jai Govind Singh**, Chanwit Boonchuay (2017). Multi-objective Economic Dispatch Considering Wind Power Penetration Using Stochastic Weight Trade-off Chaotic NSPSO. ***Electric Power Component and Systems,*** 45(14), pp. 1525–1542. (Thomson Reuters IF=1.071)

x) Vivek Mohan, Reshma Suresh, Jai Govind Singh, Weerakorn Ongsakul, Nimal Madhu M (2017). Microgrid Energy Management Combining Sensitivities, Interval and Probabilistic Uncertainties of Renewable Generation and Loads. ***IEEE Journal on Emerging and Selected Topics in Circuits and Systems***, 7(2), pp. 262 - 270. (Thomson Reuters IF=3.916)

xi) Nikhil Sasidharan, **Jai Govind Singh** (2017). A Novel Single Stage Single Phase Reconfigurable Inverter Topology for a Solar Powered Hybrid AC/DC Home in Smart Grid. ***IEEE Transactions on Industrial Electronics***, 64(4), pp 2820-2828. (Thomson Reuters IF=8.236)

xii) Nikhil Sasidharan, **Jai Govind Singh** (2017). A Resilient DC Community Grid with Real Time Ancillary Services Management. **Sustainable Cities and Society**, 28, pp. 367–386. (Thomson Reuters IF=7.587)

xiii) Vivek Mohan, **Jai Govind Singh**, and Weerakorn Ongsakul (2017). Sortino Ratio Based Portfolio Optimization Considering PHEVs and Renewable Energy in Microgrid Power Market. ***IEEE Transactions on Sustainable Energy,*** 8(1), pp. 219-229. (Thomson Reuters IF=7.917)

xiv) I Made Wartana, Ni Putu Agustini, Jai Govind Singh (2017). Optimal Integration of the Renewable Energy to the Grid by Considering Small Signal Stability Constraint. ***International Journal of Electrical and Computer Engineering***, 7(5), pp. 2329-2337. (SCOPUS, SJR=0.277, SNIP=0.833, CiteScore=2.7)

xv) Subas Ratna Tuladhar, **Jai Govind Singh**, Weerakorn Ongsakul (2016). Multi-Objective Approach for Distribution Network Reconfiguration with Optimal DG Power Factor using NSPSO. ***IET Generation, Transmission & Distribution***, 10(12), pp. 2842 - 2851. (Thomson Reuters IF=2.862)

xvi) **Jai Govind Singh**, Hassan Wajahat Qazi, and Mehrdad Ghandhari (2016). Load Curtailment Minimization by Optimal Placement of Unified Power Flow Controller. ***International Transactions on Electrical Energy Systems***. 26(10), pp. 2272–2284.*doi:10.1002/etep.2209.* (Thomson Reuters IF= 1.692)

xvii) Vivek Mohan, **Jai Govind Singh**, Weerakorn Ongsakul and Reshma Suresh M P (2016). Economic and Network Feasible Online Power Management for Renewable Energy Integrated Smart Microgrid with Improved DER Dynamics. ***Sustainable Energy, Grids and Networks***, 7(1), pp. 13-24. (Thomson Reuters IF= 3.899)

xviii) Vivek Mohan, **Jai Govind Singh**, Weerakorn Ongsakul, Reshma Suresh M P (2016). Performance Enhancement of Online Energy Scheduling in a Radial Utility Distribution Microgrid**.** ***International Journal of Electric Power and Energy Systems,*** 79, pp. 98–107. (Thomson Reuters IF =4.63)

xix) Nimal Madhu M, Nikhil Sasidharan and **Jai Govind Singh** (2016). A Droop Control Based DC Equivalent Power Flow Method for Low and Medium Voltage Distribution Systems. ***Electric Power System Research,*** 134, pp. 56–65. (Thomson Reuters IF=3.414)

xx) Sachin Muralee Krishna, Nimal Madhu M, Vivek Mohan, Reshma Suresh M P and **Jai Govind Singh** (2015). A Generalized Approach for Enhanced Solar Energy Harvesting Using Stochastic Estimation of Optimum Tilt Angles: A Case Study of Bangkok City. ***GREEN - a systemic approach to energy, DE GRUYTER,*** 5(1-6), pp. 95-107**.** (SCOPUS, SNIP=0.939, SJR=0.402)

xxi) Vivek Mohan, **Jai Govind Singh**, Weerakorn Ongsakul (2015). An Efficient Two Stage Stochastic Optimal Energy and Reserve Management in a Microgrid**.** ***Applied Energy,*** 160, pp. 28–38**.** (Thomson Reuters IF=9.746)

xxii) Nikhil Sasidharan, Nimal Madhu M, **Jai Govind Singh** and Weerakorn Ongsakul (2015). An Approach for Efficient Hybrid AC/DC Solar Powered Homegrid System based on Load Characteristics of Home Appliances. ***Energy and Buildings*****,** 108, pp. 23–35. (Thomson Reuters IF=5.879)

xxiii) Somticha Panich and **Jai Govind Singh** (2015). Impact of Plug-in Electric Vehicles on Voltage Unbalance in Distribution Systems. ***International Journal of Engineering, Science and Technology***, 7(3), pp. 76-93.

xxiv) Nimal Madhu M, S Nikhil, Anand M.P., **J. G. Singh** (2015). Distributed AC power flow method for AC and AC-DC hybrid autonomous microgrids with droop control. ***International Journal of Engineering, Science and Technology***, 7(3), pp. 58-64.

xxv) Jai Govind Singh, Priyanko Guha Thakurta and Lennart Soder (2014). Load Curtailment Minimization by Optimal Placement of SVC**.** ***International Transactions on Electrical Energy Systems***, doi: 10.1002/etep.1990. (Thomson Reuters IF= 1.692)

xxvi) I Made Wartana, **Jai Govind Singh**, Weerakorn Ongsakul, and Sasidharan Sreedharan (2013). Optimal Placement of FACTS Controllers for Maximizing System Loadability by PSO. ***Int. J. of Power and Energy Conversion***, 4(1), pp. 9 – 33. (Scopus)

xxvii) Sachin K. Jain, S. N. Singh, and **J. G. Singh** (2013). An Adaptive Time-Efficient Technique for Harmonics Estimation of Non-stationary Signals. ***IEEE Transactions on Industrial Electronics***, 60(8), pp. 3295-3303. (Thomson Reuters IF=8.236)

xxviii) Sasidharan Sreedharan, Weerakorn Ongsakul, **Jai Govind Singh,** Mahapatra S. S. (2012). Development of PSO based Robust Controller for Maximizing Wind Penetration. ***International Journal of Renewable Energy Technology***, 3(1), pp. 58-78.

xxix) Sasidharan Sreedharan, Weerakorn Ongsakul, and **J. G. Singh** (2010). Maximization of Instantaneous Penetration using Particle Swarm Optimization. ***International Journal of Engineering, Science and Technology***, 2(5), pp. 39-50.

xxx) J G Singh, S N Singh and S C Srivastava (2009). Optimal Placement of UPFC based on System Loading Distribution Factors. ***Electric Power Components and Systems***, 37(4), pp. 441-463. (Thomson Reuters IF=1.071)

xxxi) J G Singh, P Tripathy, S N Singh, S C Srivastava (2009). Development of a Fuzzy Rule Based Generalized Unified Power Flow Controller. ***International Transactions on Electrical Energy Systems***, 19(6), pp. 702–717. doi: 10.1002/etep.250 (Thomson Reuters IF=2.86)

xxxii) J G Singh, S N Singh and S C Srivastava (2007). An Approach for Optimal Placement of Static VAr Compensators based on Reactive Power Spot Price, ***IEEE Transactions on Power Systems***, 22(4), pp. 2021-2029. (Thomson Reuters IF=6.663)

xxxiii) J G Singh, S N Singh and S C Srivastava (2006). A Sensitivity Based Approach for Optimal Location of Multi-Converter Unified Power Flow Controller Considering Its Impact on Generation and Wheeling Costs. ***International Journal of Energy Technology and Policy***, 4(3), pp. 394 - 409. **(Scopus)**

xxxiv) J G Singh, S N Singh and V Pant (2004). Modelling of Generalized Unified Power Flow Controller for Suitable Location and Power Flow Controller. *Iranian Journal of Electrical and Computer Engineering*, 3(2), pp. 103-110.

4. Papers in Refereed Conference Proceedings

i) Makara Greadmeta and Jai Govind Singh (2021). Detection and Minimization of Unbalanced Load by Using Smart Meter Data. **PEACON and INNOVATION**, 2021.

ii) Sittinan Muanchaona, Piyapong Prachuab, Jai Govind Singh (2021). A Review of Applied Methods in Microgrid Protection. ***MESfIA International Conference on Master Energy Supply for Isolated Areas***, 31st August – 1st September 2021, Asian Institute of Technology, Thailand.

iii) Shubham Tiwari, Weerakorn Ongsakul, Jai Govind Singh (2020). Design and Simulation of an Islanded Hybrid Microgrid for Remote Off-Grid Communities. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, Department of Energy, Environment and Climate Change, School of Environment Resources and Development, Asian Institute of Technology, Pathum Thani, Thailand, 20-22 October 2020.

iv) H Vemuri, J G Singh (2020). Smoothening the Load Profile by using a Charging Control Strategy of Plug-In Electric Vehicles. ***2020 IEEE Students Conference on Engineering & Systems* (SCES)**, MNNIT Allahabad, India, 2020, 1-6.

v) K Somalaraju, J G Singh (2020). Enhancement of Power Generation from Electromagnetic Scavenging Tile. ***2020 International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control (PARC)*** GLA University, Mathura, UP, India. Feb 28-29, 2020.

vi) Shubham Tiwari, Arjun C Unni, R Rajanivedha, J G Singh, W Ongsakul (2019). Harmonic Analysis of Separately Excited DC Motor Drive. ***2019 Innovations in Power and Advanced Computing Technologies (i-PACT),*** India, 1, 1-7.

vii) Rachawadee Puangsukra, J G Singh, W Ongsakul, FM Gonzalez-Longatt (2018). Multi-Objective Optimization for Enhancing System Coordination Restoration by Placement of Fault Current Limiters on an Active Distribution System with System Reliability Considerations. ***2018 International Conference and Utility Exhibition on Green Energy for Sustainable Development*** (ICUE),

viii) Menaka Karki and **Jai Govind Singh** (2018). An Approach to Enhance the Life of Transformer and the Battery of Gridable Vehicles. **5th IEEE Uttar Pradesh Section International Conference**, 2-4 Nov 2018 MMMUT Gorakhpur, UP, India.

ix) Mukkamalla Srikanth Reddy, **Jai Govind Singh** (2018). Optimal Scheduling of Customers' Demand based upon Power Availability and its Price in Smart Grid. **5th IEEE Uttar Pradesh Section International Conference**, 2-4 Nov 2018 MMMUT Gorakhpur, UP, India.

x) S.M.G. Mostafa and **Jai Govind Singh** (2018). A Probabilistic Approach for Power Loss Minimization in Distribution Systems. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 24-26 October 2018, Phuket, Thailand.

xi) Md. Ariful Islam, Israt Jahan, Md. Jakaria Rahimi, and **Jai Govind Singh** (2018). Performance Analysis of LTE in Rich Multipath and Rural Environments for Wireless Communication in Smart Grid**.** ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 24-26 October 2018, Phuket, Thailand.

xii) Shubham Tiwari, Ankit Bhatt, Arjun C. Unni, **Jai Govind Singh**, and Weerakorn Ongsakul (2018). Control of DC Motor using Genetic Algorithm based PID Controller. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 24-26 October 2018, Phuket, Thailand.

xiii) Panaya Sudta, Nathakornphong Veerachayapornkul, Weerakorn Ongsakul, Nikhil Sasidharan, and **Jai Govind Singh** (2018). Optimal Placement and Sizing of DG Based on Single Phase Wind Turbine Generator in Distribution System. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 24-26 October 2018, Phuket, Thailand.

xiv) Nikhil Sasidharan, **Jai Govind Singh,** Weerakorn Ongsakul (2018). Static ZIP Load Modelling of Microwave Ovens and its Impact on Distribution System.

International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE), 24-26 October 2018, Phuket, Thailand.

xv) Raja Nivedha Ramakrishnan Aruswamy, Jai Govind Singh, Weerakorn Ongsakul (2018). PSO based Unit Commitment of a Hybrid Microgrid System. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 24-26 October 2018, Phuket, Thailand.

xvi) Nimal Madhu, Vivek Mohan and Jai Govind Singh (2018). Risk Adjusted Co-optimization of ATC in High-Low Voltage Interconnected Power System. **2018 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES).** IIT Madras, Chennai from 18 – 21, December 2018.

xvii) Raja Nivedha Ramakrishnan Aruswamy, Jai Govind Singh, Weerakorn Ongsakul (2018). PSO based Economic Dispatch of a Hybrid Microgrid System. ***4th International Conference on Power, Signals, Controls and Computation (EPSCICON* 2018),** 6-10th January 2018, Vidya Academy of Science & Technology, Thrissur, Kerala, India.

xviii) Pornchai Chaweewat, Jai Govind Singh (2017). Effects of high penetration of solar rooftop PV on short-term electricity pricing forecasting by using ANN-ABC hybrid model; case study of South Australia. ***1st International Conference on Large-Scale Grid Integration of Renewable Energy in India,*** 6 - 8 September, 2017, New Delhi, India.

xix) Nachapol Wongwantanee, **Jai Govind Singh** and Bharat Singh Rajpurohit (2016). Load Curtailment Minimization in Intentional Islanded Networks and its Restoration Strategy Considering Voltage Stability Issues. ***PEA Conference***, 19-20 December 2016, Thailand.

xx) Happy Aprillia, Jai Govind Singh, Ontoseno Penangsang, Adi Soeprijanto (2016). Optimal Placement of Capacitor on Three Phase Radial Distribution System Using Direct Search Algorithm. ***IEEE Region 10 Humanitarian Technology Conference (R10-HTC-2016)***, 21-23 December 2016, Agra, India.

xxi) Jai Govind Singh, S N Singh, S C Srivastava (2016). Congestion Management by using FACTS Controller in Power System. ***IEEE Region 10 Humanitarian Technology Conference (R10-HTC-2016)***, 21-23 December 2016, Agra, India.

xxii) Pornchai Chaweewat, Jai Govind Singh, Weerakorn Ongsakul, Anurag K. Srivastrava (2016). Economic and Environmental Impact Assessment with Network Reconfiguration in Microgrid by using Artificial Bee Colony. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 14-16 September 2016, Bangkok, Thailand.

xxiii) S. M. G. Mostafa, Jai Govind Singh, H. Masrur, Md. Shahid Ullah (2016). A Prospective Model of Bangladesh Electricity Market. ***International Conference on Innovations in Science, Engineering and Technology (ICISET 2016)***, 28-29 October 2016, IIUC, Kumira, Chittagong, Bangladesh.

xxiv) Tristan G. Magallones Jr., Jai Govind Singh and Watcharakorn Pinthurat (2016). Small Signal Stability and Transient Stability Analysis on the Philippine-Sabah Power Interconnection. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 14-16 September 2016, Bangkok, Thailand.

xxv) Watcharakorn Pinthurat, Jai Govind Singh and Tristan G. Magallones Jr. (2016). Modeling and Performance Assessment of the Thai National Power Grid Considering Wind Farms Integration. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 14-16 September 2016, Bangkok, Thailand.

xxvi) Tristan G. Magallones Jr., **Jai Govind Singh** and Watcharakorn Pinthurat (2016). Power Flow and Small Signal Stability Analysis on the Interconnected Three Isolated Philippine Power Grid. ***International Conference on Recent Trends in***

Engineering and Material Sciences, ***Elsevier Perspective in Science,*** 17-19 March, Jaipur, India.

xxvii) Watcharakorn Pinthurat, **Jai Govind Singh** and Tristan G. Magallones Jr. (2016). Assessment of Fault Ride-Through Capability in Thailand Power Grid Interconnection. ***International Conference on Recent Trends in Engineering and Material Sciences***, ***Elsevier Perspective in Science,*** 17-19 March, Jaipur, India.

xxviii) Vivek Mohan, Nimal Madhu, Jai Govind Singh, Reshma Suresh M P, Arjun C Unni. (2016). Optimal prioritization of reactive power ancillary service utilizing electric vehicles in an autonomous microgrid. ***International Conference on Recent Trends in Engineering and Material Sciences***, ***Elsevier Perspective in Science,*** 17-19 March, Jaipur, India.

xxix) Nimal Madhu, Vivek Mohan, Jai Govind Singh, Reshma Suresh M P, Sreehari G Nair. (2016). Interval effects of different load models on microgrid optimization. ***International Conference on Recent Trends in Engineering and Material Sciences***, ***Elsevier Perspective in Science,*** 17-19 March, Jaipur, India.

xxx) Nimal Madhu M, Nikhil Sasidharan, **Jai Govind Singh** (2015). Droop Control Incorporated Power Flow Method for Distribution and Microgrid Systems. ***IEEE PES Innovative Smart Grid Technologies in Asia 2015, Bangkok International Conference***.

xxxi) Anongpun Man-Im, Weerakorn Ongsakul, **Jai Govind Singh**, Chanwit Boonchuay (2015). Multi-objective Optimal Power Flow Using Stochastic Weight Trade-off Chaotic NSPSO. ***IEEE PES Innovative Smart Grid Technologies in Asia 2015, Bangkok International Conference***.

xxxii) Vivek Mohan, Reshma Suresh M P, **Jai Govind Singh**, Weerakorn Ongsakul and Boddeti Kalyan Kumar (2015). Online Optimal Power Management Considering Electric Vehicles, Load Curtailment and Grid Trade in a Microgrid Energy Market. ***IEEE PES Innovative Smart Grid Technologies in Asia 2015, Bangkok International Conference***.

xxxiii) Sasidharan Sreedharan, Reza Ghorbani, Saeed Sepasi, Weerakorn Ongsakul and **Jai Govind Singh** (2015). Simultaneous Optimization of Renewable Power at Transmission and Distribution Grid. **International Conference on SMART GRID Technologies, August 6-8, 2015, Amrita School of Engineering, Coimbatore, India**.

xxxiv) Vivek Mohan, **Jai Govind Singh**, Weerakorn Ongsakul, Nikhil Sasidharan (2015). Stochastic Effects of Renewable Energy and Loads on Optimizing Microgrid Market Benefits. ***International Conference on SMART GRID Technologies,*** August 6-8, 2015, Amrita School of Engineering, Coimbatore, India.

xxxv) Nikhil Sasidharan, Nimal Madhu M, **Jai govind Singh**, Weerakorn Ongaskul (2015). Real Time Active Power Ancillary Service using DC Community Grid with Electric vehicles and Demand Response. ***International Conference on SMART GRID Technologies,*** August 6-8, 2015, Amrita School of Engineering, Coimbatore, India.

xxxvi) Anand M.P, Weerakorn Ongsakul, **Jai Govind Singh**, Sajjad Golshannavaz (2015). Economic operational planning of a Smart distribution network considering demand response, Electric vehicles and Network reconfiguration. ***PowerTech Eindhoven 2015 conference,*** **29 June - 2 July 2015, Netherlands.**

xxxvii) Vivek Mohan, **Jai Govind Singh**, Weerakorn Ongsakul (2015). Online Benefit Optimization in a Liberalized/Free Microgrid Market Model**.** ***IEEE International Conference TAP Energy,*** 24-26th June 2015, Amrita Vishwa Vidya Peetham, Amritapuri, Kerala, India.

xxxviii) Anand M.P., Weerakorn Ongsakul, **Jai Govind Singh** and Sudhesh K.M. (2015). Optimal Allocation and Sizing of Distributed Generators in Autonomous Microgrids

based on LSF and PSO. ***International Conference on Energy, Economics and Environment (1st UPCON-ICEEE2015)***, 27-28 March, 2015, Greater Noida, India.

xxxix) Anand M.P., Weerakorn Ongsakul, **Jai Govind Singh Singh** and Sudhesh K.M. (2015). Impact of Economic Dispatch in a Smart Distribution Network considering Demand Response and Power Market. ***International Conference on Energy, Economics and Environment (1st UPCON-ICEEE2015)***, 27-28 March, 2015, Greater Noida, India.

xl) Nikhil Sasidharan and **J. G. Singh** and Sudhin P. K. (2015). Hybrid AC/DC Solar Powered Net Zero Energy Home. ***2015 IEEE International Conference on Electrical, Computer and Communication Technologies (IEEE ICECCT 2015),*** SVS College of Engineering, Coimbatore, Tamil Nadu, India, 05 - 07th March 2015.

xli) Taskin Jamal, Weerakorn Ongsakul, Jai Govind Singh, Sayedus Salehin, S.M. Ferdous (2014). Potential Rooftop Distribution Mapping using Geographic Information Systems (GIS) for Solar PV Installation: A Case Study for Dhaka, Bangladesh. ***3rd International Conference on the Developments in Renewable Energy Technology (ICDRET)***, Dhaka, Bangladesh, May 29-31, 2014.

xlii) Nachapol Wongwantanee, **Jai Govind Singh** and Bharat Singh Rajpurohit (2014). Generation Cost and Loss Power Minimization in Intentional Islanded Networks Based on BPSO. ***6th IEEE Power India International Conference***, 5-7 December 2014, New Delhi, India.

xliii) Grewal, G.S.; Rajpurohit, B.S.; **Singh, J.G.** (2014). Energy management in Steel rolling plant. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 19-21 March 2014, Pattaya, Thailand.

xliv) Man-Im, A; Ongsakul, W.; **Singh, J.G.** Boonchuay, C. (2014). Multi-objective economic dispatch considering wind generation uncertainty using non-dominated sorting particle swarm optimization. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 19-21 March 2014, Pattaya, Thailand.

xlv) Tuladhar, S.R.; **Singh, J.G.**; Ongsakul, W. (2014). A multi-objective network reconfiguration of distribution network with solar and wind distributed generation using NSPSO. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 19-21 March 2014, Pattaya, Thailand.

xlvi) Mohan, V.; Madhu, N.; Ongsakul, W.; **Singh, J.G.,** Reshma Suresh, M.P. (2014). Design of strategic information in the deregulated Indian power market: An agent-based approach. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 19-21 March 2014, Pattaya, Thailand.

xlvii) Pisanupoj, S.; Ongsakul, W.; **Singh, J.G.** (2014). Potential of smart grid in Thailand: A development of WADE smart grid model. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 19-21 March 2014, Pattaya, Thailand.

xlviii) Chaweewat, P.; **Singh, J.G.**; Ongsakul, W.; Srivastava, A.K. (2014). Synchronization control and droop control of microgrid operation. ***International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)***, 19-21 March 2014, Pattaya, Thailand.

xlix) I. M. Wartana, **J. G. Singh**, W. Ongsakul, and N. P. Agustini (2012). Optimal Placement of A Series FACTS Controller in Java-Bali 24-bus Indonesian System for Maximizing System Loadability by Evolutionary Optimization Technique. ***Third International Conference on Intelligent System, Modelling and Simulation (ISMS2012)***, Kinabalu-Malaysia, 2012.

l) Maya B, Sasidharan Sreedharan, **J G Singh** (2012). An Integrated Approach for the Voltage Stability Enhancement of Large Wind Integrated Power Systems. ***IEEE PES International Conference, Epsicon*** 2012, India.

li) Sasidharan Sreedharan, Weerakorn Ongsakul, **Jai Govind Singh**, I Made Wartana and Kittavit Buayai (2011). PSO Based Tuning of FACTS Controllers for Maximizing the Wind Energy Penetration in Power Systems. ***IEEE-PES, ISGT International Conference,*** Kollam, Kerala India, 2011.

lii) Sasidharan Sreedharan, Weerakorn Ongsakul, **J G Singh** and I Made Wartana (2011). Development of PSO based Control algorithms for maximum wind penetration. ***IEEE PES General Meeting***, Detroit, Michigan, USA, 26–29 July, 2011.

liii) D. X. Duc, **Jai Govind Singh**, Weerakorn Ongsakul (2011). Water Valuation in Vietnamese Electricity Generation Market. ***International Conference and Utility Exhibition 2011 on Power and Energy Systems: Issues and Prospects for Asia (ICUE 2011)***, 28-30 September, 2011, Pattaya, Thailand.

liv) I Made Wartana, **Jai Govind Singh,** Weerakorn Ongsakul, Kittavit Buayai, and Sasidharan Sreedharan (2011). Optimal Placement of UPFC for Maximizing System Loadability and Minimize Active Power Losses by NSGA-II. ***International Conference and Utility Exhibition 2011 on Power and Energy Systems: Issues and Prospects for Asia (ICUE 2011)***, 28-30 September, 2011, Pattaya, Thailand.

lv) J. G. Singh, S. N. Singh, S. C. Srivastava, and Lennart Söder (2010). Power System Security Enhancement by Optimal Placement of UPFC. ***The Fourth IASTED Asian Conference on Power and Energy Systems, AsiaPES 2010***.

lvi) J. G. Singh, S. N. Singh, S. C. Srivastava (2007). Reactive Power Spot Price Based Optimal SVC Placement Considering Opportunity Cost. ***International Conference on Power System*** *2007, CPRI, Bangalore*, India, 12-14 December 2007.

lvii) J. G. Singh, S. N. Singh, S. C. Srivastava (2007). Enhancement of Power System Security through Optimal Placement of TCSC and UPFC. ***IEEE PES General Meeting***, Florida, USA, 24-28 Jun 2007.

lviii) J. G. Singh, S. N. Singh, S. C. Srivastava (2006). Placement of FACTS Controllers for Enhancement of Power System Loadability. ***PES, 2006 IEEE Power India Conference***, New Delhi, April 10-12, pp. 89-96.

lix) J. G. Singh, S. N. Singh, S. C. Srivastava (2006). Optimal Placement of TCPAR for Enhancement of Power System Loadability. ***National conference on Technical Challenge in Power Systems,*** KNIT Sultanpur, India, 24-25 March 2006, pp. 207-211.

lx) J. G. Singh, S. N. Singh, S. C. Srivastava (2006). Optimal Placement of TCSC for Enhancement of Power System Loadability. ***National conference on Modern Aspects of FACTS and its application***, MMMEC Gorakhpur, India, 17-18 February 2006, pp. 89-96.

lxi) O. P. Dwivedi, **J. G. Singh** and S. N. Singh (2004). Simulation and Analysis of Multi-converter Unified Power Flow Controller Using SIMULINK. ***National Power System Conference***, IIT, Madras, India, 27-30 December, 2004, pp. 1048-1054.

lxii) O. P. Dwivedi, **J. G. Singh** and S. N. Singh (2004). Power Flow Control Using Multi-Converter FACTS Controller. ***International Conference on Power System***, IE, Tribhuvan University, Nepal and IIT Mumbai, India Kathmandu, Nepal, 3-5 November, 2004, pp. 711-718.

lxiii) J. G. Singh, S. N. Singh (2003). Optimal Power Flow Control Using Generalized Unified Power Flow Controller. ***National conference on Modern Aspects of FACTS and its application***, Coimbatore, India, 29 & 30 August 2003, pp. 89-96.

5. Papers in Workshops:
   i) J. G. Singh and S. N. Singh. Enhancing Power Systems' Security Using FACTS Controllers, ***National Seminar on Voltage Stability*** *(SVC'06)*, at Arulmigu Kalasalingam College of Engineering, Tamil Nadu, October 13-14, 2006.

6. Development Project Reports

   S. Kumar, P. Abdul Salam, C.O.P. Marpaung, J.G. Singh and B. Sireesha: AIT-EHMF Collaborative Project Report on *Micro-Hydro Generation System*. It was submitted to EBARA foundation in November 2012.

7. Non-refereed Publications

   i) Smart Grid: A Vision of Future Energy by Jai Govind Singh and Weerakorn Ongsakul, Technology Magazine, AIT Consulting, 2014.
   ii) Hybrid AC/DC Net Zero Electric Energy Status Solar Home by Nikhil Sasidharan and Jai Govind Singh, Chulachomklao Royal Military Academy (CRMA), 2014, pp. 128-129.
   iii) An eight minutes interview on 'Distributed Power Grids: A Future Energy Systems of Asia' at link http://energy.ait.asia/news-a-events/38-news/341--dr-jai-govind-singhinterview-at-asian-utility-week.

8. Invited Lectures and Keynote Addresses

   Invited keynote address/speeches:

   i) A keynote speech on 'Thailand Power Development considering VRE Integration' in 'International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control (PARC 2020), 21-22 January 2022, Department of Electrical Engineering, GLA University, Mathura, India.
   ii) A keynote speech on 'Estimation of EV's electricity load profile in Bangkok and Thailand' in 'International Conference on Recent Developments in Control, Automation & Power Engineering (RDCAPE-2021)', 7-8th October 2021, organized by Amity University, Noida, India.
   iii) A keynote speech on '**Generation and Integration of Renewable Energy**' in an *'International Conference on Recent Trends in Signals, Systems and Information'* 27-28th May 2021, Nehru college of Engineering & Research Centre Thiruvilwamala, Thrissur (Dt), Pampady, Kerala, India.
   iv) A keynote speech on '**Smart Grid and Variable Renewable Energy Integration**' in '3rd International Conference on Smart Grids, Structures and Materials 2021,' 19-20th April- 2021, Department of EEE, KLEF Deemed to be University, Guntur, Andhra Pradesh India.
   v) A keynote speech on '**Optimal Speed Determination of Electric Vehicles at Different SOC Level**' in 'International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control (PARC 2020), 28-29 February 2020, Department of Electrical Engineering, GLA University, Mathura, India.
   vi) A keynote speech on '**An Approach to Minimize the Range Anxiety of Electric Vehicles at Different SoC level of the Battery**' in 'International Conference on Smart Energy Systems and Electric Vehicles (ICSESEV-2020), 8-10 February 2020, Department of Electrical and Electronics Engineering, Siddhartha Academy of General and Technical Education, Vijayawada, India.
   vii) A keynote speech on '**Smart Grid for Green Energy and Transport Sectors'** in an International Conference on "**Sustainable Development**" ICSD – 2019, February 14-15, 2019, at STES', Sinhgad College of Engineering, Vadgaon (Bk), Pune.
   viii) A keynote speech on '**Electric Vehicles and Renewable Integration in Smart Grid**' in '**International Conference on Artificial Intelligence,**

Smart Grid and Smart City Applications,' 4-5, January 2019, PSG College of Technology, Coimbatore, India.

ix) A keynote speech on '**Electric Vehicles and Future Prospective**' in '**1st International Conference on Mechanical Innovative and Emerging Trends (MIET),** Department of Mechanical Engineering, MIET, Meerut, India, 4-5, December 2018.

x) A **keynote speech** on '**Smart Grid and ICT**' in 'International Conference on Emerging Trends in Computing & Communication Technology,' organized by Department of Computer Science & Engineering, Graphic Era Hill University, Dehradun, India, 17-18th November 2017.

xi) A **keynote speech** on 'Economic and Environmental Assessment of Microgrid: A Case study of Mai Sarieng, Thailand' in 'International Conference on Control Computing Communication and Materials (ICCCCM-2016),' organized by United College of Engineering & Research, Allahabad, UP, India, 22nd October 2016.

xii) A **keynote address** on 'Scope and Challenges of Smart Grid in Renewable Energy Integration' in 'International Conference on Smart Grid Technology (INCETS'16)', organized by College of Engineering Trikaripur, Kasaragod, Kerala, India, 23rd April 2016.

xiii) A **keynote address** on 'Distributed Power Grids: A Future Energy Systems of Asia' at International Conference on SMART GRID Technologies, August 6-8, 2015, Amrita School of Engineering, Coimbatore, India.

xiv) A **keynote speech** on 'Smart Grid for Low Carbon Society' in International Conference on Energy, Economics and Environment, 27-28th March 2015, Noida, India.

xv) A **keynote speech** on 'Homegrids to the Smart Grid: A Sustainable Energy Expressway for Green Future' in 'International Conference on Recent Developments in Control, Automation & Power Engineering (RDCAPE-2015)', 12-13th March, 2015, Noida, India.

Invited expert talks/lectures:

i) An **expert talk** entitled 'Rational and Tools for short-term Wind Speed Forecasting by Using Artificial Intelligence' in a "ATAL FDP (Faculty Development Program) on Modern Trends in Manufacturing Processes and Control Techniques in Renewable Energy System" organized by Department of Mechanical Engineering in cooperation with Electrical Engineering department, NIT Delhi, India, 16-21 November 2021.

ii) An **expert talk** entitled 'Artificial Intelligence in the Renewable Power Generation' in a "ATAL FDP (Faculty Development Program) on Energy Engineering" organized by University of Lucknow, India, 18-22 October 2021.

iii) An **expert talk** entitled 'Climate Change and Future of Transport Sector' in a "ATAL FDP (Faculty Development Program) on Energy Engineering" organized by Department of Electrical Engineering, Mizoram University, India, 23-27 August 2021.

iv) An **expert talk** entitled 'Variable Renewable Energy Integration Challenges and Smart Grid Solutions' in a Webinar organized by Pashchimanchal Campus, Tribhuvan University, Nepal, 4th April 2021.

v) An **expert talk** entitled 'Future Challenges and Directions for Variable Renewable Energy Integration' in a "FDP (Faculty Development Program) on Emerging Trends in Electromechanical System and Renewable Energy" organized by Department of Mechanical Engineering in cooperation with

Electrical Engineering Department, National Institute of Technology Delhi, India, 10-14, March 2021.

vi) An **expert talk** entitled 'Introduction to Smart Grid' in an AICTE sponsored Short Term Training Program (STTP) on "Smart Computing Technologies and Applications" hosted by MES College of Engineering, Kuttippuram, Kerala, India, 14-19th December 2020.

vii) An **expert talk** entitled 'Smart Grid for Variable Renewable Energy Integration' in an ATAL-FDP (Faculty Development Program) on "Renewable Energy Sources: Challenges, Opportunities and Applications" organized by Department of Electrical Engineering National Institute of Technology Agartala, Tripura, India, 23-27 November 2020.

viii) An **expert talk** entitled 'Generation and Transmission Investment Practices in Open Market' in a Short-Term Training Program on '**Recent Trends and Challenges in Power Market with Smart Grid Technology'** at EEE Department, V R Siddhartha Engineering College, Vijayawada, India, 5th November 2020.

ix) An **expert talk** entitled 'Financial and Physical Power Trading Mechanism in Open Market' in a Short-Term Training Program on '**Recent Trends and Challenges in Power Market with Smart Grid Technology'** at EEE Department, V R Siddhartha Engineering College, Vijayawada, India, 2nd November 2020.

x) An **expert talk** entitled 'Power System Restructuring Process & Economics' in a Short-Term Training Program (under Faculty Development Program) on **Recent Trends in Power System (RTPS-2020)** at Department of Electrical Engineering, GLA University Mathura, India, 13th October 2020.

xi) An **UG lecture** on 'Recent Trends in Electromagnetic Filed and Energy to Industrial Applications', organized by School of Electrical Engineering, Dept. of Energy & Power Electronics, VIT, Vellore, Tamilnadu, India, 28th January 2020.

xii) Full **training course lectures** on **"Smart Grid Commercial, Technical and Market Drivers"** in a training program organized by AIT Extension for personnel from **Power Utilities of Bangladesh**, 17-28 January 2020.

xiii) A **seminar** on 'Electric Vehicles and its Performance Improvement', organized by Electrical and Electronics Engineering, K.L. University, Vaddeswaram, Vijayawada, India, 11th January 2020.

xiv) An **expert talk** on 'Impacts of Electric Vehicles on Power Grid Infrastructure', in a short-term course on '***Power Converters for e-Mobility***' organized by Department of Electrical & Electronics Engineering, PSG College of Technology, Coimbatore, 6-10 January 2020.

xv) An **UG lecture** on 'Electric and Magnetic Field Concepts used in Electric Vehicles', organized by School of Electrical Engineering, Dept. of Energy & Power Electronics, VIT, Vellore, Tamilnadu, India, 1st March 2019.

xvi) A **lecture** on 'Smart Grid and Renewable Energy Integration', organized by School of Electrical Engineering, Dept. of Energy & Power Electronics, VIT, Vellore, Tamilnadu, India, 18th July 2018.

xvii) An **expert talk** on 'Load Management in Smart Grid' in 'Malaviya Research Conclave 2018 (MRC-2018)', organized by MMMUT Gorakhpur, UP, India, 6–8 July 2018.

xviii) An **expert talk** on 'Research Methodology: A Case of AIT's Practice' in 'Malaviya Research Conclave 2017 (MRC-2018)', organized by MMMUT Gorakhpur, UP, India, 6–8 July 2018.

xix) An **expert talk** on 'Scope and Challenges of Smart Grid in Renewable Energy Integration' in 'Malaviya Research Conclave 2017 (MRC-2017)', organized by MMMUT Gorakhpur, UP, India during 9–11 July 2017.

xx) Two and half day invited lectures on '**Smart Grid**' in a training program organized by AITE for personnel from Bangladesh Power Utility from 13th to 15th November 2017.

xxi) One day lectures on '**Gas Insulated Substations, Substation Automation and SCADA'** in a training program organized by AITE for personnel from **Power Grid Company of Bangladesh Ltd. (PGCB)** 21st September 2017.

xxii) An **expert talk** on 'Distributed Power Grids: A Future Energy Systems' at Asian Utility Week 2015, 9-10 June, Bangkok, Thailand.

xxiii) An **expert talk** on '**ICT for Smart Grid**' in ICUE2014 Pre-Conference Training Workshop on Smart Grid and Renewable Energy, 18th March 2014.

xxiv) I have been invited to deliver several lectures on various power system topics in different trainings program organized by AIT Extension.

xxv) An electricity seminar on "An Electrical Infrastructure for Sustainable Development in THAILAND", FRENCH THAI ELECTRICITY FORUM, 2012, organized by The Trade Commission of French Embassy, Thailand.

xxvi) Sequential M. Tech. Program of Uttar Pradesh Technical University, Lucknow, UP, India, on "Economic operation and control of power systems".

9. Total number of citations to the faculty member's published work, as shown by SCOPUS.

SCOPUS			Researchgate			Google Scholar		
Citations	h-index	i10-index	Citations	h-index	RG Score	Citations	h-index	i10-index
678	13	17	903	14	23.71	1068	17	27

(Scopus link: http://www.scopus.com/authid/detail.url?authorId=37462123800&origin=cto)
(Researchgate link: https://www.researchgate.net/profile/Jai_Govind_Singh)
(Google scholar link: http://scholar.google.co.th/citations?user=yeX22UYAAAAJ&hl=en)

B. Research grants and sponsored projects

1. List of research grants and sponsored projects. For each grant and project specify the project duration, overhead and faculty time income to the institute.

For each grant and project specify the project duration, overhead and faculty time income to the institute.

Sl. No.	Project/grants details
1	**Project title:** USAID Southeast Asia EDGE Hub **Objective:** To help Tetra Tech deliver technical support services to USAID missions in Southeast Asia, AIT shall provide technical assistance regarding adult learning, training, capacity building, and other learning opportunities. These shall be either online/distance or classroom-based courses that are pertinent to Asia EDGE's four key areas. **Duration:** 2020-2023 **Sponsor:** TetraTech / USAID **Budget:** US$ 1,28,270 **Researchers involved:** Dr. J G Singh (PI), Dr. P Abdul Salam (Co-PI), Prof. Shobhakar Dhakal (Co-PI)

	Expected Outputs: Provide demand-driven training, executive training, capacity building related to rural and off-grid electrification, energy storage, smart grid technologies, regional energy market, and stability analysis of grid integration. Support and facilitate technical workshops and sub-regional collaboration events or other services upon the request of Tetra Tech. **Expected Impacts:** USAID will support the Asia EDGE initiative to accelerate the growth of the region's energy markets in four key areas: 1) Utility Modernization, 2) Increased Deployment of Advanced Energy Systems, 3) Transparent, Best Value Procurement, and 4) Regional Energy Trade and Integration **Publications from the project:** N/A
2	**Project title:** International Conference (ICUE 2020) **Objective:** Organize biannual ICUE conference **Duration:** 2019 –2021 **Sponsor:** Registration revenues, sponsorships and grants **Budget:** 2,075,560 THB **Researchers involved:** Dr. J G Singh (Organizing member) along with all SE Program Faculty **Expected Outputs:** This ICUE conference is a venue to exchange research ideas, experiences, technical, social, financial, economic and policy issues covering energy, environment and climate change (EECC). **Expected Impacts:** Here, EECC professionals, policy makers, researchers, members of the academe, engineers, etc., will have a platform to showcase research findings, technological innovations, transformative emerging technologies, and even to discuss burning global, regional and national issues in EECC for development, policies and programme. **Publications from the project:** Conference proceedings in IEEE Xplore
3	**Project title:** Mastering Energy Supply focusing on Isolated Areas **Objective:** The aim of the project is to provide high quality postgraduate education on energy supply systems for engineers and graduates from science departments, aiming to have activities or to be employed in projects in countries with many isolated areas and insular systems. **Duration:** 2019-2021 **Sponsor:** ERASMUS+ **Budget:** 3,404,263 THB **Researchers involved:** Dr. J G Singh (Co-PI), Prof. Shobhakar Dhakal (PI), Prof. S Kumar (Co-PI) **Expected Outputs:** Master Degree program with focus in Energy Supply in Isolated Areas **Expected Impacts:** The more skilled the technicians and engineers are, the lower the danger of prolonged power shortage is and finally will decrease the energy cost on islands and will also improve the economic activity on the isolated areas. **Publications from the project:** N/A
4	**Project title:** Design and Development of Smart Grid Test Bed for Experimental Verification of Synchrophasor based Algorithms for Wide Area Monitoring, Protection and Control (WAMPAC) for Power Grids with Large Penetration of Renewable Energy Resources **Objective:** 1) To intensify interaction and scientific cooperation between Indian and ASEAN scientists / institutions; 2) To connect existing but separately funded research projects in India and ASEAN MS; and 3) To enhance academic training and development of young scholars **Duration:** 2018-2021 **Sponsor:** Department of Science and Technology (DST), India **Budget:** 23,94,000 INR

	Researchers involved: Dr. J G Singh (PI from AIT Thailand), Dr. L. Ashok Kumar (PI from PSG College of Technology, Coimbatore, India), Dr. I Made Wartana (PI from ITN Malang, Indonesia) **Expected Outputs:** As deliverables from this project, algorithms for three components will be developed and verified for Power Grids with large penetration of Distributed Renewable Energy Sources. **Expected Impacts:** Mutual collaborations, publications, conference activities, etc. **Publications from the project:** N/A
5	**Project title:** Bangchak Initiative and Innovation Center at AIT **Objective:** To inculcate entrepreneurship and creation of enterprises on knowledge based innovation specially focused to Green technology. **Duration:** 25th July 2017 to 24th July 2022 **Sponsor:** Bangchak Petroleum Company, Thailand **Budget:** 50,000,000 THB **Researchers involved:** Dr. J G Singh (Co-PI), Prof. Weerakorn Ongsakul (PI), Dr. P Abdul Salam (Co-PI), Prof. Rajendra P Shrestha (Co-PI), Prof. Thammarat Koottatep (Co-PI), Prof. Anil Kumar Anal (Co-PI) **Expected Outputs:** A center that brings together resources among AIT's programs and centers for development of: • Prototype of green technologies working prototype of Environmental remediation, waste/water treatment, Energy conservation, sustainable energy generation technologies, etc. • Proof of concept of green technology, devices and system Certification of the green technology equipment, consultancy for green technologies, etc. • Integration of AIT's capabilities by using the existing resources of AIT towards a sustainable living campus. • Innovative technological solutions to capacity building and community development. • Innovative ideas which will improve the quality of life of common people. **Expected Impacts:** Capacity building through Incubator programs (technology/marketing/packaging/finance, ideas etc). Visibility of AIT innovative hub to all stakeholders. **Publications from the project:** N/A
6	**Project title:** Analysis of Grid Codes and Regulations to Support Transmission Stability and Reliability, Regional Power Trade and VRE Integration in Southeast Asia **Objective:** The primary objective of USAID Clean Power Asia is to work with Lower Mekong (LM) countries and other Association of Southeast Asian Nations (ASEAN) developing member states to encourage power sector investments in environmentally friendly, clean energy sources, specifically focusing on scaling up investment in grid-connected renewable power. **Duration:** 1st Feb – December 2021 **Sponsor:** Abt Associates under USAID Clean Power Asia program **Budget:** US$ 18, 705 **Researchers involved:** Dr. J G Singh (PI), Dr. Sasidharan Sreedharan (MES, India) **Expected Outputs:** Two reports on grid codes for harmonization **Expected Impacts:** To promote interconnections and power trade in the Lower Mekong and in Southeast Asia. **Publications from the project:** N/A
7	**Project title:** International Conference (ICUE 2018) **Objective:** Organize biannual ICUE conference **Duration:** October 2018 – March 2019 **Sponsor:** Registration revenues, sponsorships and grants **Budget:** 1,909,080 THB

	Researchers involved: Dr. J G Singh (Director) and all SE Program Faculty as an organizing members **Expected Outputs:** This ICUE conference is a venue to exchange research ideas, experiences, technical, social, financial, economic and policy issues covering greening energy utilization. **Expected Impacts:** Here, energy professionals, policy makers, researchers, members of the academe, engineers, members of the energy supply sector, etc., will have a platform to showcase research findings, technological innovations, transformative emerging technologies, and even to discuss burning global, regional and national issues in energy utilization for development and environment policies and programme. **Publications from the project:** Conference proceedings in IEEE Xplore
8	**Project title:** A Project for Sunny Bangchak to Improve the Efficiency of Solar Photovoltaic System **Objective:** To identify the proper cooling system for solar PV system installed in Bangchak's solar farm **Duration:** 29 Feb – 30 June 2016 **Sponsor:** Bangchak Solar Energy Company Limited (Sunny Bangchak) **Budget:** 130,625 THB **Researchers involved:** Dr. J G Singh (Co-PI), Prof. Weerakorn Ongsakul (PI) **Expected Outputs:** A suitable cooling system for solar PV panel. **Expected Impacts:** This cooling system will improve the panel's energy efficiency **Publications from the project:** N/A
9	**Project title:** Smart Solar Home Demonstration Project **Objective:** To install and test the various parameters of solar PV panel **Duration:** Sept 1, 2014 – Aug 30, 2015 **Sponsor:** Industrial Technology Assistance Program (iTap), National Science and Technology Development Agency (NSTDA), Thailand **Budget:** 3kW solar panel equipment equivalent 500,000 THB **Researchers involved:** Dr. J G Singh (Co-PI), Prof. Weerakorn Ongsakul (PI) **Expected Outputs:** 3 kW solar PV installation and testing the performance parameters for its suitability in Thailand **Expected Impacts:** It's performance was acceptable and generated power injected to grid **Publications from the project:** N/A
10	**Project title:** Service Providing for Local Arrangement and Meeting Support Services to IEEE PES ISGT 2015 **Objective:** To assist Organizing committee to handle the paper submissions, their review process and communication to authors **Duration:** Sept 1, 2014 – May 31, 2016 **Sponsor:** IEEE PES Thailand Chapter **Budget:** 799, 817 THB **Researchers involved:** Dr. J G Singh (Co-PI), Prof. Weerakorn Ongsakul (PI) **Expected Outputs:** All submitted papers were peer reviewed and ensured the quality **Expected Impacts:** It helped us to better understand IEEE conference organization and paper review processing
11	**Project title:** ICUE 2016 Cogeneration, Small Power Plants and District **Objective:** Organize biannual ICUE conference **Duration:** Feb 1, 2016 to June 30, 2017 **Sponsor:** Registration revenues, sponsorships and grants **Budget:** 1,670,000 THB **Researchers involved:** Dr. J G Singh (Co-PI) along with all SE Program Faculty **Expected Outputs:** This ICUE conference is a venue to exchange research ideas, experiences, technical, social, financial, economic and policy issues covering small power plants and districts.

	Expected Impacts: Here, energy professionals, policy makers, researchers, members of the academe, engineers, members of the energy supply sector, etc., will have a platform to showcase research findings, technological innovations, transformative emerging technologies, and even to discuss burning global, regional and national issues in small power plants and districts for development and environment policies and programme. **Publications from the project:** Conference proceedings in IEEE Xplore
12	**Project title:** Renewable Powered micro-/mini-grid generation **Objective:** To prepare 4 peer reviewed issues papers on success/failure factors for micro/mini-grid generations in Thailand, Philippine, Indonesia, and India **Duration:** December 2012 – December 2014 **Sponsor:** IRENA, Abu Dhabi **Budget:** 241,939 THB **Researchers involved:** Dr. J G Singh (PI), Dr. P Abdul Salam (Co-PI) **Expected Outputs:** 4 different peer reviewed issues papers **Expected Impacts:** Help to understand that various factors responsible for either success or failure of different micro/mini-grid system in these four countries **Publications from the project:** 4 different issues papers were prepared and submitted to IRENA for their perusal
13	**Project title:** Capacity development of the Assam power utilities **Objective:** The objective of this program was to provide an exposure to technology, operations and maintenance, and overall management aspects of transmission and distribution loss reduction in a middle income Asian country. **Duration:** October 2012 – December 2013 **Sponsor:** South Energy Department ADB **Budget:** 294,900 THB **Researchers involved:** Dr. J G Singh (PI) **Expected Outputs:** This was a technical assistance capacity development program which aims to assist the Assam State Electricity Board (ASEB), the Assam Power Generation Corporation Limited (APGCL), the Assam Electricity Grid Corporation Limited (AEGCL), and the Assam Power Distribution Company Limited (APDCL) in (i) introducing new business processes, (ii) strengthening their human resources and financial management capabilities, and (iii) mainstreaming rural electrification. This program was conducted in terms of class room discussion in morning session followed by site visits in afternoon session for selected senior staffs from above mentioned power utilities. **Expected Impacts:** 36 personnel trained from above utilities
14	**Project title:** Gender inclusive Capacity development **Objective:** This was a training program for power distribution planning and operations engineers from one of the three electricity distribution utilities in the state of Madhya Pradesh, India. Participants including engineers and the senior officers from the utility have got knowledge and info about power loss reduction as well as enhancing the performances of the utility like increasing the revenue and maintaining the required service standards by using appropriate methods and technologies. **Duration:** July 2012 - February 2013 **Sponsor:** South Energy Department ADB **Budget:** 244,285 THB **Researchers involved:** Dr. J G Singh (PI) **Expected Outputs:** They have learned all about to increase the performances of the power distribution utility, in terms of loss reduction, metering, billing, revenue collection and enhances the reliability index of the services by adopting proper approaches as well as available technologies.

	Expected Impacts: Eight (8) graduate (or equivalent) electrical engineers with experience in power distribution planning & operations and, three (3) senior officers from the utility industry were trained on above subject matter.
15	**Project title:** Energy Publications project **Objective:** To manage RERIC journal's activities **Duration:** January 2013 – December 2017 **Sponsor:** Subscription, registration etc. **Budget:** 4,185,824 THB **Researchers involved:** Dr. J G Singh (Co-PI), Dr. P Abdul Salam (Co-PI), Dr. Shobhakar Dhakal (Co-PI), Dr. Weerakorn Ongsakul (Co-PI), Prof. S Kumar (Co-PI) **Expected Outputs:** Accepting paper submissions, peer review processing and final publication of selected papers **Expected Impacts:** Each year 12-20 peer reviewed articles published in this journal. **Publications from the project:** N/A
16	**Project title:** AIT GCI Support Electrical Energy **Objective:** To conduct the electrical energy mapping of Energy Building **Duration:** March 2014 – December 2014 **Sponsor:** ADEME/ France **Budget:** 100, 000 THB **Researchers involved:** Dr. J G Singh (PI) **Expected Outputs:** To display the real time Power and Energy consumption details. **Expected Impacts:** To create awareness among the members of Energy Department regarding the wastage of Energy. And, to identify the options towards converting Energy building into a Zero-Energy Building. **Publications from the project:** N/A
17	**Project title:** ICUE 2014 **Objective:** Organize biannual ICUE conference **Duration:** January 2013 – December 2014 **Sponsor:** Registration revenues, sponsorships and grants **Budget:** 2,210,999 THB **Researchers involved:** Dr. J G Singh (Co-PI) along with all SE Program Faculty **Expected Outputs:** This ICUE conference is a venue to exchange research ideas, experiences, technical, social, financial, economic and policy issues covering energy and power utilizations. **Expected Impacts:** Here, energy professionals, policy makers, researchers, members of the academe, engineers, members of the energy supply sector, etc., will have a platform to showcase research findings, technological innovations, transformative emerging technologies, and even to discuss burning global, regional and national issues in energy and power utilizations for development and environment policies and programme. **Publications from the project:** Conference proceedings in IEEE Xplore
18	**Project title:** PEA-AIT Scholarship 2011 **Objective:** To recruit students from PEA under this collaboration **Duration:** 2011 - 2015 **Sponsor:** Provincial Electricity Authority (PEA), Thailand **Budget:** 3,548,533 THB **Researchers involved:** Dr. J G Singh (Co-PI), Dr. Weerakorn Ongsakul (PI), Dr. P Abdul Salam (Co-PI), Prof. S Kumar (Co-PI), Dr. Charles O.P. Marpaung (Co-PI) **Expected Outputs:** To impart required skills to PEA staffs and prepare them to meet the future needs **Expected Impacts:** 40 Master and doctoral graduates **Publications from the project:** N/A
19	**Project title:** Micro-Hydro Solar PV Hybrid System

	Objective: The project aimed to design, develop and install a variable speed micro hydro generating system using a mixed flow type Pump as Turbine (Model EBARA 200SZ) with a modified impeller vanes coupled with permanent magnet synchronous generator and to evaluate its performance at very low heads from 2m to 4.8m. **Duration:** February 2010 - April 2012 **Sponsor:** EBARA, Japan **Budget:** 1,786,222 THB **Researchers involved:** Dr. J G Singh (Co-PI), Prof. S Kumar (PI), Dr. P Abdul Salam (Co-PI), Dr. Charles O.P. Marpaung (Co-PI) **Expected Outputs:** The generated power was regulated by a power conditioner and electrical load controller for efficient supply directly to isolated loads. **Expected Impacts:** The attractiveness of this research is its approach toward demonstrating new technology by the installation of a micro hydro system for power generation and its evaluation at very lower heads using PAT **Publications from the project:** Development report

V. Service/Outreach

A. Professional Service

1. Leadership in policy and program development in professional organizations.
    i) Senior Member of ***IEEE*** (***Institution of Electrical and Electronics Engineers***
    ii) Fellow of **The Institute of Engineers, India**

2. Participation in organizational responses to policy, practice, or structural issues, which affect the field.

i) Member of Advisory Committee of '3rd International Conference on Smart Grids, Structures and Materials 2021,' 9-10th April 2021, organized by Department of EEE, KLEF Deemed to be University, Guntur, Andhra Pradesh India.

ii) Track Chair of 'International Conference on Control, Automation, Power and Signal Processing (CAPS-2021)' during 10-12 December 2021 at PDPM IIITDM Jabalpur (An Institute of National Importance), India.

iii) Panelist Member of International Conference on 'Recent Challenges and Opportunity in Engineering" during March 13-14, 2021 at EED, College of Technology & Engineering, Maharana Pratap University of Agriculture & Technology Udaipur-313001(Rajasthan), India.

iv) Member of Advisory Board of 'International Conference on Electrical and Electronics Engineering (ICEEE 2020),' 14-15 February, 2020 at MMMUT Gorakhpur (UP), India.

v) Member of Technical Program Committee of 'International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control (PARC 2020),' 28-29 February, 2020 at GLA University, Mathura, India.

vi) Member of Technical/Advisory Program Committee of '4th International Conference on Information Systems & Computer Networks,' 21-22 November, 2019 at GLA University, Mathura, India.

vii) General co-chair of "5th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering UPCON 2018" is jointly organized by Madan Mohan Malaviya University of Technology (MMMUT), Gorakhpur (UP) India & University of Ryukyus, Okinawa, Japan from 2-4 November 2018 in MMMUT, Gorakhpur (UP) India.

viii) Member of International Advisory Committee of 'International Conference on Artificial Intelligence, Smart Grid and Smart City Applications,' 3-5 January, 2019 at PSG College of Technology, Coimbatore, Tamil Nadu, India

ix) Member of Organizing Committee of '4th IEEE Uttar Pradesh Section International Conference on Electrical, Computer & Electronics' 26-28 October, 2017 at GLA University Mathura, India.

x) ADB through its energy for All Initiative is invited to the Bali Clean Energy Forum on 11-12 February 2016 and related Global Knowledge Partnership Group Workout meeting on 13 February 2016 to be held in Nusa Dua, Bali, Indonesia.

xi) ADB invited and I attended 'Global Knowledge Partnership Group Workout for Center of Excellence on Clean Energy Indonesia and beyond' in Jakarta during 16-18 December 2015.

xii) I have attended AIT Retreat meeting held during May 16-18, 2015.

xiii) I have been invited from Murdoch University, South St, Murdoch, Western AUSTRALIA (January 2014) to provide feedback and suggestion to assist in the development of the curriculum frameworks, to provide advice in how best to offer the programs/degrees developed, as well as in related reports and academic papers/publications.

xiv) I have been invited to participate and deliver an electricity seminar on "An Electrical Infrastructure for Sustainable Development in THAILAND", FRENCH-THAI ELECTRICITY FORUM, 2012, organized by The Trade Commission of French Embassy, Thailand.

xv) I have been invited to participate in a panel discussion on Renewable Energy activities of International Renewable Energy Agency (IRENA), Abu Dhabi, **UAE** in a workshop of 'Indo-ASEAN cooperation in Renewable Energy' organized by India in New Delhi from 5-6th November 2012. Moreover, this workshop's outcomes were presented to ASEAN–India Ministerial Meeting on Renewable Energy on 7th November for cooperation on renewable energy.

xvi) I have delivered several talks to personnel of power utilities of India, Pakistan, Bangladesh, and African countries.

3. Organization of training courses, conferences, seminars, and workshops.

i) Member of the Organizing Committee of "**MESFIA International Conference (ICUE 2021)**", 31st August -1st September 2021, AIT, Thailand.

ii) Coordinated and delivered a talk in **Webinar on 'Ensuring Quality and Reliability of Electricity with best practices in Distribution Network'** on 14th July 2020, AIT Extension, Thailand. Around 100 participants attended from the globe but mostly from Bangladesh Power Utilities.

iii) Member of the technical organizing committee of the "International Conference and Utility Exhibition on: Energy, Environment and Climate Change (ICUE 2020)", 20-22 October 2020, AIT, Thailand.

iv) Director of the "**International Conference and Utility Exhibition on: Green Energy for Sustainable Development (ICUE 2018)**", 24-26 October 2018, Phuket, Thailand.

v) Organized a training program on '**Pre-Conference Training Workshop on Smart Grid and Renewable Energy**' on 18th March 2014, Pattaya, Thailand.

vi) Organized a training program on '**Capacity Development Program on New Trends in Power Transmission Planning, Operation and Maintenance in Assam, India**' during 3 - 7th December 2012, AIT, Bangkok, Thailand sponsored by Energy Division, South Asia Department, ADB.

vii) Organized a training program on '**New Trends in Power Distribution Planning and Loss Reduction Strategies for Rural Areas of Assam**' during 26 - 30th

November 2012, AIT, Bangkok, Thailand sponsored by Energy Division, South Asia Department, ADB.

viii) Organized a training program on '**Power Distribution Planning and Loss Reduction Strategies for Rural Areas of Madhya Pradesh, India**' during 20 - 24th August 2012, AIT, Bangkok, Thailand sponsored by Energy Division, South Asia Department, ADB.

ix) Member of the technical organizing committee of the "International Conference and Utility Exhibition on: Green Energy for Sustainable Development (ICUE 2014)", 19-21 March, 2014, Pattaya, Thailand.

x) Member of the technical organizing committee of the "2nd AIT-PEA International Conference and Utility Exhibition on Power and Energy Systems: Issues and Prospects for Asia (ICUE 2011)", 28-30 September 2011, Pattaya city, Thailand.

xi) Member of the technical organizing committee of the "International Conference on Sustainable Energy Development: Issues and Strategy", 2-4 June 2010, Chiang Mai, Thailand.

4. Editing or serving on advisory boards of journals

i) Reviewer of several international journals, e.g.

a) Institute of Electrical and Electronic Engineers (IEEE)
b) Institution of Engineering and Technology (IET)
c) Electric Power Component and Systems (EPCS)
d) Taylor and Francis
e) Wily
f) Elsevier
g) Springer
h) Inderscience

5. Government or international organization panels, expert witness, reports to government or international agencies

i) A report on 'Desk Study on Technical Gaps of Country-Specific Grid Codes and Regulations and Recommendations for a Common ASEAN Wide-Grid Code' is submitted and published by **U.S. Agency for International Development Regional Development Mission for Asia**, June 2021.

ii) I have been invited and attended as an expert of Focus Group on 'Developing the full analytic potential from your Smart Grid program to accelerate innovation and operational excellence' lead by **SAS Software (Thailand)** in Asian Utility Week 2015, 9-10 June, Bangkok.

iii) A peer reviewed study report on **'**Rural electrification using renewable-powered micro/mini grid system: A scenario of Thailand' and prepared by Jai Govind Singh and, P. Abdul Salam was submitted to **IRENA, Abu Dhabi** in 2014.

iv) A peer reviewed study report on 'Micro-grids in rural areas: Case Study of Indonesia' and prepared by Maxensius Tri Sambodo, Jai Govind Singh and, P. Abdul Salam was submitted to **IRENA, Abu Dhabi** in 2014.

v) A peer reviewed study report on 'Expanding Energy Access through Renewable Energy based Mini/Micro Grids Lessons from India' and prepared by Rohit Kansal, Jai Govind Singh and, P. Abdul Salam was submitted to **IRENA, Abu Dhabi** in 2014.

vi) A peer reviewed study report on 'Renewable-powered micro/mini-grid systems: Philippine Experience' and prepared by Rene Barruela, Jai Govind Singh and, P. Abdul Salam was submitted to **IRENA, Abu Dhabi** in 2014.

vii) I was involved in a panel discussion on **Renewable Energy activities of International Renewable Energy Agency (IRENA), Abu Dhabi, UAE** in a workshop of 'Indo-ASEAN cooperation in Renewable Energy' organized by India

in New Delhi from 5-6th November 2012. Moreover, this workshop's outcomes were presented to ASEAN–India Ministerial Meeting on Renewable Energy on 7th November for cooperation on renewable energy.

viii) Participated in a Field trip organized by 'International Renewable Energy Agency, Abu Dhabi' in India during November, 2012. The objective of field trip was to study the 'renewable-powered micro/mini grid system' for rural electrification and formulate issues papers for the developing countries.

6. Participation in development projects

i) I am involved in a project "3 kW solar PV installation and testing" at AIT in partnership of NSTDA and IHEM Thailand.

ii) I worked in implementation of online electrical energy footprint monitoring in in Energy buildings under project 'AIT GCI SUPPORT ELECTRICAL ENERGY'.

iii) I was involved in a project "Micro Hydro and PV Hybrid Generation System" implementation at AIT in partnership of EBARA foundation, Japan.

B. Significant Institute Committee Service (Indicate the period of service)

1. Department/Program

i) Chair of recruitment panel for Program Officer in RERIC/SE/EECC (2021).

ii) Chair of recruitment panel for Program Officer in CCSD/EECC (2021).

iii) Head of Department of Energy, Environment and Climate Change, AIT (January 2021 – December 2022)

iv) Member of recruitment panel for Lab Technician in Energy (August 2019).

v) Member of recruitment panel for Program Officer in EECC (2019).

vi) Member of recruitment panel for Lab Technician in Energy (December 2018).

vii) Member of promotional committee (November – December 2018).

viii) Member of recruitment panel for Lab Supervisor in EEM (November 2017).

ix) Member of recruitment panel for Program Officer in CCSD (May – June 2017).

x) Member and Coordinator of the selection committee for the Energy FoS administrative secretary recruitment (December 2013-March 2014).

xi) Member and Coordinator of the selection committee for the Energy FoS administrative secretary recruitment (March 2014-July 2014).

xii) Member and Coordinator of the selection committee for the Energy FoS administrative lab technician recruitment (2014).

xiii) Member of the selection committee for the PEA scholarship recipients (2010-2012).

xiv) Member of the selection committee for the Energy FoS faculty recruitment (2011).

xv) Member of the selection committee for the Energy FoS Laboratory supervisor (2010).

2. School

i) SERD Faculty representative in the recruitment committee for the technician in SERD office (November 2016-December 2016).

ii) Member, Task Force for Development of Master Program on Energy and Environment, 2015.

iii) Member of the selection committee for the AARM FoS administrative secretary recruitment (November 2014-January 2015).

iv) Member, School Academic Matter Committee (SAMC), 2014-2015.

v) Member of the joint program development on Energy Business Management (EBM) with SOM, 2012.

vi) Member of SERD Under Graduate Task Force (UG Task Force) in 2010.

3. Institute

i) Member, Task Force for Development of One Year Master Program October 2020 - present.
ii) Member of Faculty Evaluation Panel (FEP) (September 2020 – August 2022)
iii) Member of Academic Development Review Committee (ADRC) (August 2019 – July 2021)
iv) Chair of AIT Library Committee (November 2018 – October 2020).
v) Member of AIT Library Committee (July 2018 – June 2020).
vi) Member, Under Graduate Program and Review Committee (UGPRC) (November 2016 – 2019)
vii) Member, Doctoral Program and Review Committee (DPRC) (September 2012 – December 2014)
viii) Member of Standing Committee on Management of Assets and Facilities (SCOMAF) constituted by AIT President with ToR to review current AIT-Sodexo scope and propose, implement and monitor new structure to manage AIT assets and facilities from July 2014.
ix) Member of Bid Evaluation Committee on Technical Maintenance Outsourcing Project constituted by AIT President with ToR to analyze and recommend suitable bid for technical maintenance, April 2014.
x) Member of Bid evaluation committee for ARUC approved project, viz., "Main Distribution Board at Substation No.14", 2013.
xi) Member of Task Force constituted by VPA for proposing revised/new electricity tariff for AIT residents, 2013.
xii) Member of Bid evaluation committee for ARUC approved project, viz., "Main Distribution Board at Substation No.14", 2013.
xiii) Member of Bid evaluation committee for ARUC approved project, viz., "Distribution Board at SV3 Area", 2013.
xiv) Member of selection committee of Energy faculty recruitment, 2011.
xv) Member of Research Infrastructure Task Force committee during 2011.

C. Administrative Service (Indicate the period of service)

1. Academic Program

i) Head of Department of Energy, Environment and Climate Change, AIT (January 2021 – December 2022)
ii) Chair of Energy Academic Program from January 2019 to December 2020.
iii) Coordinator of Energy FoS from November 2013 to December 2015.
iv) Coordinator of MBA in Energy Business program from November 2013 to December 2015.
v) Director of Regional Energy Resources Information Centre, AIT from November 2013 to December 2015.
vi) Acting FoS coordinator several times for short periods.

D. Community Service

1. Serving on program committees

i) Advisory committee member of the **International Conference on Sustainable Technology and Advanced Computing in Electrical Engineering (ICSTACE),** Organized **by Department of Electrical Engineering, Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat, India** 11th and 12th November 2021 (Offline/hybrid mode).
ii) Technical committee of the **IEEE ISGT Asia 2021, Brisbane**, Australia, during 5-8 December 2021.

iii) Track chair of the IEEE sponsored international conference CAPS-2021, 10-12 December 2021 at **PDPM IIITDM Jabalpur**, India.

iv) Member, International Advisory Board of International Conference on "Recent Challenges and Opportunity in Engineering" organized by **College of Technology and Engineering, Udaipur, Rajasthan**, India, March 13-14, 2021.

v) General co-chair (10^{th} Feb to 4^{th} November 2018), 5^{th} **IEEE** Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (**UPCON-2018**), jointly organized by MMMMUT Gorakhpur India and University of Ryukyus Okinawa, Japan, during 2–4 November, 2018 in MMMUT Gorakhpur India.

vi) Member, International Advisory Committee of International Conference on Computing, Communication and Security, December 4-5, 2015, Pamplemousses, Mauritius.

vii) Member, Advisory Committee of International Conference on Creativity & Innovations in Technology Development, 1-2nd April 2015.

viii) Member, Advisory Committee of International Conference on Energy, Economics and Environment, 27-28th March 2015.

ix) Member, International Program Committee for 2nd International Conference on Green Energy and Technology (ICGET) 5~6 September 2014, Dhaka, Bangladesh.

x) Member of SERD Under Graduate Task Force during 2010 (UG Task Force).

xi) Member of India Task Force.

xii) Member of Research Infrastructure Task Force committee during 2011.

2. Serving as external examiner for doctoral dissertations

i) Mr. Chejarla Madhu Kishor's PhD Dissertation on 'Investigations on Synchrophasor assisted Power System State Estimation'**,** Department of Electrical Engineering, **National Institute of Technology Warangal**, India, February 2022.

ii) Ms. Chandarani Kashinath Sutar's PhD thesis entitled 'Multiobjective Optimization Approach in Hybrid Distributed Generation System' from **Dr. APJ Abdul Kalam University, UP, India**, 2021.

iii) Mr. Syed Mohammad Ashraf's PhD Dissertation on 'Synchrophasor-Assisted Voltage Stability Monitoring and Control and Transient Stability Assessment of Power Systems', Department of Electrical Engineering, **Indian Institute of Technology Kanpur**, India, February 2021.

iv) Mr. Vinod M Raj's PhD Dissertation on 'Optimal DG Allocation and Network Reconfiguration in Distribution Systems with Uncertainty Using Improved Affine Arithmetic', Department of Electrical Engineering, **Indian Institute of Technology Madras**, India, January 2021.

v) Mr. Shaikh Mohammed Suhel's PhD Dissertation on 'Performance Investigation on Six-Phase Induction Motor Drive', **Sardar Vallabhbhai National Institute of Technology,** Surat, Gujrat, India, 2020.

vi) Ms. Jyothi Varanasi's PhD Dissertation on 'Forecasting of Wind and Solar Power Generations for Enhancing Their Penetrations in Smart Grid', **Delhi Technological University (DTU)**, New Delhi, India, 2020.

vii) Ms. Neethu Mohan's PhD Thesis on 'Parameter Estimation and Forecasting Methods for Emerging Power Grids Using Data-Adaptive Techniques' from Amrita School of Engineering, **Amrita Vishwa Vidyapeetham, Coimbatore, Tamil Nadu, India**, 2019.

viii) Mr Taskin Jamal's PhD Thesis on 'An Innovative Planning Approach to Improve PV Integration into Remote Electricity Networks' from **Murdoch University, Australia**, 2018/2019.

ix) Ms. R. Meenal's PhD Dissertation on 'Soft Computing Techniques for the Prediction of Global Solar Radiation,' School of Engineering and Technology, **Karunya Institute of Technology and Sciences,** Karunya Nagar, Coimbatore, Tamil Nadu, India, 2018.

x) Ms. Mandadi Kalyani's PhD Thesis on 'Measured Signal Based Identification of Inter-Area Oscillations for Generator Coherency and Controlled Islanding in Power Systems' from **Indian Institute of Technology Madras, India**, 2018.

xi) Mr. Hemang S Pandya's PhD thesis entitled 'Optimized Microgrid Demand Response Management in Smart Grid Paradigm' from **Sardar Vallabhbhai National Institute of Technology, Surat, Gujrat, India**, 2017.

xii) Mr. Satyendra Singh's PhD thesis entitled 'Optimal Power Flow Using Artificial Intelligence Techniques Incorporating FACTS Devices' from **Dr. APJ Abdul Kalam University, UP, India**, 2017.

xiii) Mr. Shabbiruddin's PhD thesis entitled 'An Exploratory Analysis of Planning and Operation for Power Distribution System' from **Sikkim Manipal University, India**, 2017.

xiv) Mr. Sachin Tiwari's PhD thesis entitled 'Series Compensation of Self Excited Induction Generator for Distributed Power Generation' from **Maulana Azad National Institute of Technology, Bhopal, MP, India**, 2016.

xv) Ms. Pallavee Bhatnagar's PhD thesis entitled 'Linear Current Controlled Maximum Power Point Tracking using DSP Controller' from **Maulana Azad National Institute of Technology, Bhopal, MP, India**, 2015.

xvi) Mr. S.B. Karajgi's PhD thesis entitled 'PV & MSW as Distributed Generation Resources: Modeling, Analysis & Benefit Quantification' from **National Institute of Technology Surathkal, Mangalore, Karnataka, India**, 2013.

xvii) Ms. Smita Srivastava's PhD thesis entitled 'Development of Improved Islanding Detection Schemes in Distributed Generation Environment' from **MANIT, Bhopal, India**, 2012.

xviii) Mr. Anwar Ahmed Ansari's PhD entitled 'Optimization of Asynchronous Machine Performance Using Fuzzy Voltage Controller' from **MANIT, Bhopal, India**, 2012.

xix) Ms. Shafali Jain's PhD thesis entitled 'Productivity and Efficiency Analysis of Electricity Generating Companies in Emerging Indian Scenario' from **MANIT, Bhopal, India**, 2012.

DATE: 14th February 2022
Day / Month / Year