Name of Faculty	Dr. THANIKANTI SUDHAKAR BABU	
Designation	Associate Professor	
Nature of Job/Appointment	Contract	
Date of Joining	27 - 01–2021	
E-mail	Sudhakarbabu_eee@cbit.ac.in	

Education Qualifications	Name of the Degree	Class
Ph. D	Doctor of Philosophy (Electrical)	Awarded
PG	M. Tech. (PED)	Distinction
UG	EEE.	First

Work Experience	
Teaching	3.5Years (Includes research experience)
Research	4.5 Years
Industry	2 Years--
Others	--

Area of Specialization	Power Electronics, Renewable Energy Resources
Professional Memberships	- Senior Member, IEEE (Membership No: 94012203) - Member IET; (Membership No: 1100478761) - Member of IEEE power Electronics Society, Membership number: 94012203 - Member of The institute of research engineers and doctors (theIRED), Membership number: SM10100052558 - Member of International Association of Engineers (IAENG), Membership number: 159698
Responsibilities held at Institution Level	--
Responsibilities held at Department Level	--
Research Guidance	Ph.D. Pursuing: 0

Awards Received	1. Received **GOLD** award for the poster presentation on Implementation and design of an autonomous residential DC nano grid at the UNITEN POSTDOC HANGOUT DAY 2019, 30th Sept 2019, Universiti Tenaga Nasional, Malaysia. 2. Received award "**Young faculty in Engineering 2018**" towards exceptional academic records, initiatives and developments in the field of Electrical Engineering by Venus International Foundation, India. 3. Received a **best research paper award** for the article title "Charge controller techniques for solar PV system" in 1st International Conference on Power Engineering, Computing and Control, PECCON-2017, 2-4 March 2017, VIT University, Chennai Campus 4. Received **research award** consecutively for the years 2014, 2015, 2016 contribution towards research publications by VIT University. 5. Selected as **best associate** of project for the month of May 2013 in cognizant technology solutions 6. **Awarded certificated** of appreciation for outstanding contribution towards Hyderabad Innovator Fair organized by CTS national wide, October 2012 7. Received **best paper award** in a national level technical contest (SVITS QUEST 2008) for presenting paper titled "Fuzzy based economic load" organized by Sri Visveswaraya institute of technology and science in the year of 2008. 8. Received **bestpaper award** in a national level student seminar (INNOVITS 2K8) for presenting paper titled "Fuzzy based economic load dispatch of thermal power plant" organized by Vagdevi institute of technology and science, Andhra Pradesh. 9. Received 2nd prize for paper presentation in the national level technical symposium (Technosance 08) organized by Osmania

University, Hyderabad.

Courses Handled at Under Graduate / Post Graduate Level.	Electric Circuits-I, Electric Circuits-II, Basic Electrical Engineering, Fundamentals of Electrical Engineering, Electrical Circuits-Lab, Renewable Energy Resources, Advanced Power semiconductor devices, Power Electronics.
No. of Papers Published	National Journals – 00 International Journals – 66 **(SCI Indexed – 56; SCI Indexed 10)** National Conference – 01 International Conference – 14
Projects Carried out	Executive Member of FIST program 2016, sanctioned fund of Rs. 115.0 Lakh (215580 USD) by Department of Science and Technology, Reference number: SR/FST/ETI-420/2016.
Patents	Filed a patent under IP Australia, titled "A Process For Reducing Execution Time For Compression Techniques", Patent number: 2021100433, on 31 March 2021.
Technology Transfer	--
Invited Speaker	1. Delivered key note address during one week faculty development program at P V P Siddhartha Institute of Technology, Vijayawada on 07th to 12th December 2020. 2. Acted as a speaker for the AICTE Sponsored One Week Short Term Training Program organized by SVCE, Tirupathi on October 2020. 3. Delivered a keynote speech during International Webinar organized by SRM Eswari Engineering College on September 2020. 4. Delivered a guest lecture as speaker for the one day National Workshop "Power Circuit Design Using PSIM Software- Hands on Training" organized by School of Electrical Engineering, VIT University, Vellore on 07 October 2017.
No. of Books/Chapter Published with details	**Thanikanti Sudhakar Babu**, Rajasekar Natarajan, "Modeling, analysis development of maximum power extraction techniques" LAP Lambert publications, 2017.
Details of Short-Term Training Programs/Faculty Development Programs/Seminars/Workshops/Other Trainings (**Attended and/or Organized**).	**WS/ Seminars/ Conferences/ STTPS/ FDPs Organized** • Organized an International webinar on EMI/EMC in Power Converters under IEEE PES student Branch of CBIT on 15 May 2021. • Organized a online seminar on " Advanced Power Converters for future Power Grids" under IEEE PES student Branch of CBIT on 10th March 2021. • Organized one day value added program on "Silicon carbide devices for high power applications" by V.Chandrasekar, Scientist E, Joint director power electronics division, CDAC Trivendrum on 28 October 2017. • Organized a one day national level workshop titled "Programming FPGA controller for solar PV applications based LabVIEW" in collaboration with Innovative invader technologies , National Instruments, Banglore at VIT University, Vellore on 27 October 2017. • Contributed as faculty organizer in the International conference on "Translational Medical and Imaging, ICTMI-2017" organized by School of Electrical Engineering, VIT University during 29 – 30 August 2017. • Contributed as faculty organizer in the International conference on " Innovations in Power and Advanced Computing Technologies (i-PACT)" organized by School of Electrical Engineering, VIT University during 21 – 22 April 2017. • Contributed as organizing committee member in conducting the "National level science contest for children" held at VIT University, Vellore on 21-22 January, 2017. **WS/ Seminars/ Conferences/ STTPS/ FDPs Attended** • Attended one day value added program on "Smart wide area monitoring protection using communication control" held on 25 March 2017 at VIT University, Vellore. • Participated in Three Day National Workshop with Hands on session in "Signal and Image Processing: Practice to Research" organized by School of Electrical Engineering, VIT University, Vellore, during 23 – 25, February 2017. • Attended Industrial Automated Training in Drive, Motion, Control and Robotics organized by Delta Electronics India from 03 February 2017 to 07 February 2017 at New Delhi.

Details of Journal Publications/ Conferences (**National and International**)

International Journals form the year 2017

[1]. Palpandian, Murugesan, David Prince Winston, Balachandran Praveen Kumar, CherukuriSanthan Kumar, Thanikanti Sudhakar Babu, and Hassan HaesAlhelou (2021) "A New Ken-Ken Puzzle Pattern Based Reconfiguration Technique for Maximum Power Extraction in Partial Shaded Solar PV Array." IEEE Access Vol.9: 65824-65837.

[2]. Thentral, TM Thamizh, K. Vijayakumar, S. Usha, R. Palanisamy, Thanikanti Sudhakar Babu, Hassan HaesAlhelou, and Amer Al-Hinai (2021) "Development of Control Techniques using Modified Fuzzy Based SAPF for Power Quality Enhancement." IEEE Access.

[3]. Sain, Chiranjit, Pabitra Kumar Biswas, Priya Ranjan Satpathy, Thanikanti Sudhakar Babu, and Hassan HaesAlhelou. (2021) "Self-Controlled PMSM Drive Employed in Light Electric Vehicle-Dynamic Strategy and Performance Optimization." IEEE Access 9: 57967-57975.

[4]. Tan, Kang Miao, Thanikanti Sudhakar Babu, Vigna K. Ramachandaramurthy, PadmanathanKasinathan, Sunil G. Solanki, and Shangari K. Raveendran (2021) "Empowering smart grid: A comprehensive review of energy storage technology and application with renewable energy integration." Journal of Energy Storage 39: 102591.

[5]. Abd Elaziz, Mohamed, Sudhakar Babu Thanikanti, Ibrahim Anwar Ibrahim, Songfeng Lu, Benedetto Nastasi, Majed A. Alotaibi, Md Alamgir Hossain, and Dalia Yousri (2021) "Enhanced Marine Predators Algorithm for identifying static and dynamic Photovoltaic models parameters." Energy Conversion and Management 236: 113971.

[6]. PandiaRajan Jeyaraj, Aravind ChellachiKathiresan, Siva Prakash Asokan, Edward Rajan Samuel Nadar, HegazyRezk, and Thanikanti Sudhakar Babu (2021) "Power System Resiliency and Wide Area Control Employing Deep Learning Algorithm". Computers, Materials & Continua Tech Science Press, 2021, vol.68, no.1, pp. 553-567.

[7]. Yousri, Dalia, SeyedaliMirjalili, JA Tenreiro Machado, Sudhakar Babu Thanikanti, and Ahmed Fathy. "Efficient fractional-order modified Harris hawks optimizer for proton exchange membrane fuel cell modeling (2021)" Engineering Applications of Artificial Intelligence 100: 104193.

[8]. Sankaran, K. Sakthidasan, N. Vasudevan, K. R. Devabalaji, Thanikanti Sudhakar Babu, Hassan HaesAlhelou, and T. Yuvaraj (2021) "A Recurrent Reward Based Learning Technique for Secure Neighbor Selection in Mobile AD-HOC Networks." IEEE Access 9: 21735-21745.

[9]. Jamaludin, MohdNasrulIzzani, Mohammad FaridunNaim Tajuddin, Jubaer Ahmed, Azralmukmin Azmi, SyahrulAshikin Azmi, Nur Hafizah Ghazali, Thanikanti Sudhakar Babu, and Hassan HaesAlhelou. "An Effective Salp Swarm Based MPPT for Photovoltaic Systems Under Dynamic and Partial Shading Conditions" (2021) IEEE Access.

[10]. Nazeri, Mohammad Nor Rafiq, Mohammad FaridunNaim Tajuddin, Thanikanti Sudhakar Babu, Azralmukmin Azmi, Maria Malvoni, and Nallapaneni Manoj Kumar (2021) "Firefly Algorithm-Based Photovoltaic Array Reconfiguration for Maximum Power Extraction during Mismatch Conditions." Sustainability 13, no. 6: 3206.

[11]. Rezk, Hegazy, Thanikanti Sudhakar Babu, Mujahed Al-Dhaifallah, and Hamdy A. Ziedan (2021) "A robust parameter estimation approach based on stochastic fractal search optimization algorithm applied to solar PV parameters." Energy Reports 7: 620-640.

[12]. Dharani, Rajavelu, MadasamyBalasubramonian, Thanikanti Sudhakar Babu, and Benedetto Nastasi (2021) "Load Shifting and Peak Clipping for Reducing Energy Consumption in an Indian University Campus." Energies 14, no. 3: 558.

[13]. Premkumar, K., M. Vishnupriya, Thanikanti Sudhakar Babu, B. V. Manikandan, T. Thamizhselvan, A. Nazar Ali, Rabiul Islam, Abbas Z. Kouzani, and Parvez Mahmud (2021) "Black Widow Optimization-Based Optimal PI-Controlled Wind Turbine Emulator." Sustainability 12, no. 24: 10357.

[14]. Balasubramanian, Karthik, Thanikanti Sudhakar Babu, Umashankar Subramaniam, N. Sudhakar, and Sam Sichilalu. (2021) "A novel review on Optimization Techniques used in Wind Farm Modelling." Renewable Energy Focus, 35, 84-96.

[15]. Soumya Ranjan Das, Prakash K. Ray, Arun Kumar Sahoo, SomulaRamasubbareddy, Thanikanti Sudhakar Babu, Nallapaneni Manoj Kumar, Hassan HaesAlhelou, PierluigiSiano, (2020) "Performance of Hybrid Filter in a Microgrid Integrated Power System Network Using Wavelet Techniques", Applied Sciences, 10, 6792.

[16]. Dalia Yousri, Thanikanti Sudhakar Babu, SeyedaliMirjalili, N.Rajasekar, Mohamed Abd Elazize (2020) "A novel objective function with artificial ecosystem-based optimization for relieving the mismatching power loss of large-scale photovoltaic array", Energy Conversion and Management, Vol 225, 113385.

[17]. Dalia Yousri, Thanikanti Sudhakar babu, Ahmed Ali. "Multi-Objective Grey Wolf Optimizer for Optimal Design of Switching Matrix for Shaded PV array Dynamic Reconfiguration", IEEE Access, 8, 159931-159946.

[18]. ChiranjitSain, Atanu Banerjee, Pabitra Kumar Biswas, Thanikanti Sudhakar Babu, Tomislav Dragicevic, "An Updated PSO Optimized Fuzzy-PI Controlled Buck Type Multi-Phase Inverter Based PMSM Drive With an Over-Current Protection Scheme" IET Electric Power Applications, 14, 12, 2331-2339.

[19]. Kathiresan, A.C.; PandiaRajan, J.; Sivaprakash, A.; Sudhakar Babu, T.; Islam, M.R. (2020) "An Adaptive Feed-Forward Phase Locked Loop for Grid Synchronization of Renewable Energy Systems under Wide Frequency Deviations", *Sustainability*, *12*, 7048.

[20]. Babu, Thanikanti Sudhakar, Krishnakumar R. Vasudevan, Vigna K. Ramachandaramurthy, Suleiman Bala Sani, SansubariChemud, and Rosli Mat Lajim. (2020) "A Comprehensive Review of Hybrid Energy Storage Systems: Converter Topologies, Control Strategies and Future Prospects." IEEE Access 8: 148702-148721.

[21]. Ajmal, Aidha Muhammad, Thanikanti Sudhakar Babu, Vigna K. Ramachandaramurthy, Dalia Yousri, and Janaka B. Ekanayake. (2020) "Static and dynamic reconfiguration approaches for mitigation of partial

shading influence in photovoltaic arrays." Sustainable Energy Technologies and Assessments 40: 100738.

[22]. Krishnakumar R. Vasudevan, Vigna K. Ramachandaramurthy, Sudhakar Babu Thanikanti, ArefPouryekta. (2020) Synchronverter: A comprehensive review of modifications, stability assessment, applications and future perspectives, IEEE Access, 8: 131565-131589.

[23]. M. Premkumar, S. Umashankar, Thanikanti Sudhakar Babu, P. Sanjeevikumar, Jens Bo Holm-Nielsen, Massimo Mitolo, R. Sowmya, "Improved Perturb And Observation MPPT Technique for Solar Photovoltaic Power Generation Systems", IEEE Systems Journal.

[24]. Thanikanti Sudhakar Babu, Dalia Yousri, Karthik Balasubramanian, (2020) Photovoltaic array reconfiguration system for maximizing the harvested power using population-based algorithms, IEEE Access, 8: 109608-109624.

[25]. Dalia Yousri, Thanikanti Sudhakar Babu, EmanBeshar, M.B. Eteiba, Dalia Allam, (2020) A Robust Strategy based on Marine Predators Algorithm for large scale Photovoltaic array reconfiguration to Mitigate the Partial Shading Effect on the Performance of PV System, IEEE Access, 8: 112407-112426.

[26]. Dalia Yousri, Dalia Allam, Thanikanti Sudhakar Babu, Amr M. AbdelAty, Ahmed G. Radwan, Vigna. K. Ramachandaramurthy, M.B.Eteiba. (2020) "Fractional Chaos maps with Flower Pollination Algorithm for Chaotic Systems' Parameters Identification" in Neural Computing and Applications, 04906.

[27]. Dalia Yousri, Thanikanti Sudhakar babu, Ahmed Ali. (2020) "Recent Methodology Based Harris Hawks Optimizer for Designing Load Frequency Control Incorporated in Multi-interconnected Renewable Energy Plants", Sustainable Energy, Grids and Networks, 22, 100352.

[28]. Dalia Yousri, T Sudhakar Babu, Dalia Allam, Vigna K Ramachandaramurthy, Magdy B Eteiba, (2020) "Fractional Chaotic Ensemble Particle Swarm Optimizer for identifying the single, double, and three diode photovoltaic models' parameters", Energy 195: 116979.

[29]. M.Premkumar, ThanikantiSudhakarBabu, S.Umashankar, R.Sowmya, (2020) "A New Metaphor-less Algorithms for the Photovoltaic Cell Parameter Estimation", International Journal for Light and Electron Optics (Optik), 164559.

[30]. Premkumar, M.; Subramaniam, U.; Babu, T.S.; Elavarasan, R.M.; Mihet-Popa, (2020) L. Evaluation of Mathematical Model to Characterize the Performance of Conventional and Hybrid PV Array Topologies under Static and Dynamic Shading Patterns. Energies, 13, 3216.

[31]. S Jeyasudha, MurugaperumalKrishnamoorty, MummadiSaisandeep, Karthik Balasubramanian, Suresh Srinivasan, Thanikanti Sudhakar Babu, Techno economic performance analysis of Hybrid renewable electrification system for remote villages of India, International Transactions on Electrical Energy Systems, Accepted for publication.

[32]. Kadhim Hamzah Chalok, Mohammad FaridunNaim Tajuddin, Thanikanti Sudhakar Babu, Shahrin Md Ayob, Tole Sutikno, (2020) Optimal extraction of photovoltaic energy using fuzzy logic control for maximum power point tracking technique, International Journal of Power Electronics and Drive System (IJPEDS) Vol. 11, No. 3, pp. 1628~1639.

[33]. Sudhakar Natarajan, Thanikanti Sudhakar Babu, Karthik Balasubramanian, Umashankar Subramaniam, Dhafer J Almakhles. (2020) "A State-of-the-Art review on Conducted Electromagnetic Interference In Non-Isolated DC to DC Converters", IEEE Access, 8, pp. 2577.

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[35]. Dalia Yousri, T Sudhakar Babu, Dalia Allam, Vigna K Ramachandaramurthy, Magdy B Eteiba, (2019) "A Novel Chaotic Flower Pollination Algorithm for Global Maximum Power Point Tracking for Photovoltaic system under Partial Shading Conditions", IEEE Access, 7, pp. 121432-121445.

[36]. Yuvaraj T, K R Devabalaji, T. Sudahakar Babu. (2019) "Simultaneous allocation of DG and DSTATCOM using Whale Optimization Algorithm" Iranian Journal of Science and Technology, Transactions A: Science. pp. 1-8.

[37]. N. Sudhakar, K. Jyotheeswara Reddy, P. Padmavathi, T. Sudhakar Babu, Vigna. K. Ramachandaramurthy P. SanjeevikumarPadmanaban(2019) "Conducted electro-magnetic interference spectral peak mitigation in Luo converter implementation using FPGA based chaotic PWM technique" Electric Power Components and Systems. 1-11.

[38]. Yousri, Dalia, Mohamed Abd Elaziz, Manel Merchaoui, K. P. S. Rana, Thanikanti Sudhakar Babu, Diego Oliva, Prasanth Ram et al. (2019) "Reply on "Reply to comment on Important notes on parameter estimation of solar photovoltaic cell", by Gnetchejo et al.[Energy Conversion and Management, https://doi. org/10.1016/j. enconman. 2019.111870]." Energy Conversion and Management 201: 112234.

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[44]. Ram, J. Prasanth, Himanshu Manghani, Dhanup S. Pillai, T. Sudhakar Babu, MasafumiMiyatake, and N. Rajasekar. (2018) "Analysis on solar PV emulators: A review." Renewable and Sustainable Energy Reviews 81: 149-160.

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International / National Conferences form the year 2017

[1]. Aidha Muhammad Ajmal, T. Sudhakar Babu, Vigna K. Ramachandaramurthy, Janaka B. Ekanayake. "Effect of Partial Shading and performance analysis on various array configurations in Photovoltaic system", International Conference on Renewable Power Generation (RPG), Shanghai, China. Accepted for Presentation.

[2]. T. Sudhakar Babu, Karthik Balasubramanian, Rajasekar Natarajan, "An Innovative Optimal Parameter Extraction of PEM Fuel Cell using an Effective Approach", 1st International Conference on Innovation in Modern Science and Technology (ICIMSAT-2019), Siluguri, India. Accepted for Presentation.

[3]. T. Sudhakar Babu, Karthik Balasubramanian, Rajasekar Natarajan, "An Active Series-Parallel Electrical Array Reconfiguration System for Maximum Power Extraction During Partial Shaded Conditions", 2nd World Summit on Advances in Science, Engineering and Technology", IndianaSummit-2019. Accepted for Presentation.

[4]. Mohammed Azharuddin Shamshuddin, Sudhakar Babu Thanikanti, Ramachandaramurthy

[5]. Vigna.K, Ralph M. Kennel. (2019) "Implementation and design of an autonomous residential DC nano-grid" PCIM Europe Nuremberg.

[6]. Karthik Balasubramanian, Sudhakar Babu Thanikanti, Rajasekar Natarajan, (2018) "An Innovative Approach of PEMFC Parameter Extraction Using Artificial Immune System", International Conference on Innovative Smart Grid Technologies (ISGT Asia 2018), Singapore.

[7]. A Das, TR Kumar, S Gourishankar, DS Pillai, TS Babu, N Rajasekar, "A novel method for modeling of thermo electric coolers" 7th International Conference on Power Systems (ICPS), 242-246, 2017.

Monographs / Chapters

[1]. Thanikanti Sudhakar Babu, Dalia Yousri, Dalia Allam, Magdy B Eteiba, Karthik Balasubramanian, (2021) "Converter/Inverter Topologies for Standalone and Grid-Connected PV Systems" Renewable Energy and Future Power Systems, Springer Singapore, 35-80,   https://doi.org/10.1007/978-981-33-6753-1_2, Scopus indexed.

[2]. Bharadwaj CS, T. Sudhakar Babu and Rajasekar N. (2018) "Tuning PID Controller for Inverted Pendulum Using Genetic Algorithm". In Advances in Systems, Control and Automation, pp. 395-404, Springer, Singapore.

[3]. Kasthuri, Rajesh, K. Bhageeratha Reddy, J. Prasanth Ram, T. Sudhakar Babu, and N. Rajasekar.(2017) "Dynamic Performance Enhancement of Three-Phase PV Grid-Connected Systems Using Constant Power Generation (CPG)." In Artificial Intelligence and Evolutionary Computations in Engineering Systems, pp. 187-198. Springer, Singapore.