Sreenivasa S Jaldanki

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Key Skills

- Industrial Research experience in Power Electronics
- Eight years of Industrial Experience in Power Electronics R&D
- Expertise in Grid-connected Power Electronics Converter Modeling, Design and Control
- Experience in HVDC system studies, multi-terminal HVDC studies and HVDC Breakers
- Experience as People Manager, Project Management, Mentoring New Employees

Work Experience

R&D Staff Member	Oak Ridge National Labs, Knoxville, USA	Apr. 2022 till date	
Senior R&D Engineer	Hitachi-ABB Power Grids, Ludvika, Sweden	Nov. 2019 to Mar. 2022	2Y 4M
Research Team Manager and Senior R&D Engineer	ABB PGGI R&D, Chennai, India	Nov. 2016 to Nov. 2019	3Y 0M
Senior R&D Engineer	ABB PGGI R&D, Chennai, India	Jun. 2014 to Oct. 2016	2Y 4M
Post-Doctoral Fellow	Ryerson University, Toronto, Canada	May 2013 to Apr. 2014	1Y 0M
Technical Lead (R&D)	Delta Power Solutions, Bangalore, India	Oct. 2012 to Apr. 2013	0Y 7M
Lecturer	Vellore Institute of Technology, Vellore, India	Jul. 2005 to Jul. 2006	1Y 0M
Research Student	Indian Institute of Technology, Bombay, India	Aug. 2002 Jun. to 2005	2Y 11M

Education

Ph.D (2006-2013)	Indian Institute of Science, Bangalore, India
M.E (2000-2002)	PSG College of Technology, Coimbatore, India
B.Tech (1996-2000)	Nagarjuna University, Guntur, Andhra Pradesh, India

Research Areas

- HVDC converter topologies and control
- Multi-terminal High voltage DC systems
- High voltage DC circuit breakers
- Mathematical modeling of power converters
- PWM techniques for high power converters
- Electrical drives

Awards and Recognition

- Senior member IEEE
- Current Member CIGRE working group (JWG C1/B4.49), Offshore transmission planning.
- Previous Member, CIGRE Working Group, B4.79, Hybrid LCC/VSC HVDC systems.
- Judge for HVdc prize award, Office of Electricity, DOE, USA, June 2023: reviewed 5 proposals.

- Reviewer for IEEE Transactions of Industrial Electronics, Power Electronics, Sustainable Energy, Power Delivery – around 40 papers reviewed till date
- Awarded 1st Prize in 'India Development Center (IDC) - Power Technologies Innovation Challenge' for an Idea on 'ABB Hybrid Breaker Technology' by ABB GISPL, India.

Trainings

- Participated in two days 'Speed Mentoring' Workshop at ABB, Bangalore, India
- Completed five days 'Management Development Program' at ABB, Chennai, India
- Completed Emerging Leadership Program' at ABB, Bangalore, India

Research Projects

1. **Scalable Hybrid Large-Scale dc-ac Grid Analysis Methods,** funded by Department of Energy, USA
   - Modeling and Control of HVDC multiterminal systems

2. **Control development and DC fault handling for Modular Multilevel Converter (MMC) based HVDC converter** (Nov. 2019 to March 2023)
   - Detailed converter control development
   - Control development for DC fault ride through

3. **Modeling and new control development of Modular Multilevel Converter (MMC) for HVDC application** (Jan. 2017 to Oct. 2019)
   - Development mathematical model for MMC
   - Development of new feedforward control strategy for MMC
   - Control development of Full-bridge based MMC

4. **Design of new semiconductor device based Power Cell for MMC based HVDC Converter** (Sep. 2015 to Dec. 2016)
   - Design and component selection of Power Cell
   - Design of snubber circuit
   - Control development for Power-cell testing

5. **Electrical Design of Hybrid HVDC breaker (HHB)** (Mar. 2015 to Dec. 2016)
   - Responsible for the study of various operating modes of HHB
   - Development of high-frequency model for HHB
   - Study the voltage and current stress on various internal components of HHB
   - To perform system studies to aid the electrical design of HHB

6. **New Voltage Source Converter Topology for HVDC Applications** (Jun. 2014 to Feb. 2015)
   - Analysis of a hybrid topology containing IGBTs and Thyristors
   - Analysis of Thyristor Commutation problem

Patents

1. Jaldanki Sivaprasad, Swakshar Ray, "Circulating current control in a modular multilevel voltage source converter" ABB Technology Ltd, Appl. No. PCT/EP2016/070639
   https://patents.google.com/patent/US10924029B2/en

2. Jaldanki Sivaprasad, Arman Hassanpoor, "Current limiting device as well as a high voltage direct current arrangement and high voltage power system comprising such a current limiting device", ABB Technology Ltd, Appl. No. PCT/EP2016/05575
   https://patents.google.com/patent/WO2017157440A1/ja

3. Jaldanki Sivaprasad, Subhashish Mukherjee, Praveen Barupati and Sasitharan. S, "Method of controlling operation of an interface arrangement in a power transmission system" ABB Technology Ltd, Appl. No. PCT/EP2015/068830
https://patents.google.com/patent/WO2017028890A1/un

Journal publications

1. J. S. Siva Prasad R. Ghosh and G. Narayanan, "Common-mode injection PWM for parallel converters" *IEEE Trans. Ind. Electron.*, vol. 62(2), pp. 789-794, Feb. 2015. (NC-50)
2. J. S. Siva Prasad and G. Narayanan, "Minimum switching loss pulse width modulation for reduced power conversion loss in reactive power compensators" *IET Journal of Power Electron.*, vol. 7(3), pp. 545-551, Mar. 2014. (NC-25)
3. J. S. Siva Prasad and G. Narayanan, "Minimization of grid current distortion in parallel-connected converters through carrier interleaving" *IEEE Trans. Ind. Electron.*, vol. 61(1), pp. 76-91, Jan. 2014. (NC-130)
4. J. S. Siva Prasad and G. Narayanan, "Apparatus and method for heat-run test on high-power PWM converters with low energy expenditure," *Sadhana Journal, Springer*, vol. 38(3), pp. 359 – 375, June 2013. (NC-6)
5. A. C. Binoj Kumar, J. S. Siva Prasad and G. Narayanan, "Experimental investigation on the effect of advanced bus-clamping pulsewidth modulation on motor acoustic noise," *IEEE Trans. Ind. Electron.*, vol. 60(2), pp. 433-439, Feb. 2013. (NC-64)
6. Kaushik Basu, J. S. Siva Prasad, G. Narayanan, Harish K. Krishnamurthy and Rajapandian Ayyanar, "Reduction of torque ripple in induction motor drives using an advanced hybrid PWM technique," *IEEE Trans. Ind. Electron.*, vol. 57(6), pp. 2085-2091, June 2010. (NC-132)
7. Kaushik Basu, J. S. Siva Prasad and G. Narayanan, "Minimization of torque ripple in PWM AC drives," *IEEE Trans. Ind. Electron.*, vol. 56(2), pp. 553-558, Feb. 2009. (NC-120)
8. J. S. Siva Prasad, T. Bhavsar, R. Ghosh and G. Narayanan, "Vector control of three-phase AC/DC front-end converter", *Sadhana Journal, Springer*, vol. 33(5), pp. 591 – 613, Oct 2008. (NC-126)

Conference publications

1. Sreenivasa S Jaldanki, Suman Debnath, Jiazi Zhang, Patrick Brown and Joshuua Novacheck, "Mixed Monopole and Bipole MTdc Architecture", IEEE Energy Conversion Congress and Expo, Oct. - Nov. 2023, Nashville, TN, USA

2. V. Rakesh Reddy, Y. Hafner, K. K. Nayak, S. R. Choudhury, Sivaprasad J, Vinothkumar K and S. Auddy, "Feasibility study of adding a third full bridge VSC-based HVDC terminal on an existing LCC based HVDC transmission system", B4, DC systems and Power Electronics, CIGRE Session-2022, Aug. 2022, Paris.

3. Vishal Vekhande, J. Sivaprasad, Vinothkumar K, Sridhar Alapati, Jwala Rao, Saikat Karmakar, "A Generalized Procedure to Develop DC Switchyard for MTDC Grids", Electric Power and Energy Conference (EPEC), Edmonton, Canada, Nov. 2020.
https://ieeexplore.ieee.org/document/9320124

4. J. S. Siva Prasad, Kamisetty NV Prasad and G. Narayanan, "Experimental Comparison of Power Conversion Loss with Different PWM Strategies for STATCOM Application," International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE), Cochin, India, Jan. 2020. (NC-2)

5. J. S. Siva Prasad, Kamisetty NV Prasad and G. Narayanan, "Device loss and thermal characterization of high power PWM converters," IEEE India International Conference on Power Electronics (IICPE), Jaipur, India, Dec. 2018.

6. J. S. Siva Prasad, Kamisetty NV Prasad and G. Narayanan, "Timer based digital implementation of advanced bus-clamping PWM techniques," IEEE International Conference on Computing, Power and Communication Technologies (GUCON), Noida, India, Sep. 2018.

7. J. S. Siva Prasad and G. Narayanan, "Modeling and control of back-to-back connected PWM converters," National Power Electronics Conference 2013, Indian Institute of Technology, Kanpur, India, Dec. 2013.

8. J. S. Siva Prasad and G. Narayanan, "Reduction of grid current distortion in parallel connected line-side converters using carrier interleaving," National Power Electronics Conference 2011, Bengal Engineering & Science University, Howrah, India, Dec. 2011.

9. J. S. Siva Prasad and G. Narayanan, "Control of parallel-connected converters for load testing of high-power PWM converters", National Power Electronics Conference 2010, Indian Institute of Technology, Roorkee, India, June 2010. (NC-3)

10. J. S. Siva Prasad, T. Bhavsar, R. Ghosh and G. Narayanan, "Vector control of three-phase AC/DC front-end converter", National Power Electronics Conference 2007, Indian Institute of Science, Bangalore, India, Dec. 2007.

11. J. S. Siva Prasad and B. G. Fernandes, "A novel grid connected three phase current source active commutated thyristor inverter for photovoltaic applications," National conference on Control, Communication and Information Systems, Goa Engineering College, Goa, India, Jan. 2004, pp. 95-99.

12. J. S. Siva Prasad and B. G. Fernandes, "Open loop control of active commutated SCR CSI for grid connected photovoltaic systems," International Conference on Power Systems (ICPS-2004), Khatmandu, Nepal, pp. 810-814.

13. J. S. Siva Prasad and B. G. Fernandes, "Active commutated thyristor CSI for grid connected photovoltaic applications," 4th Power Electronics and Motion Control Conference (IPEMC-2004), Jiaotong University, Xian, China, pp. 1767-1771. (NC-24)

Teaching experience

- Acted as a Co-Supervisor for two PhD students of Indian Institute of Technology, Madras, India. (Students are sponsored by ABB, India)
- Taught 'Power Electronics' course for Masters level students at Vellore Institute of Technology, Vellore, India.
- Worked as a teaching assistant in lab for 'Digital Control of Power Electronics' course at IISc Bangalore.
- Worked as a teaching assistant for course on 'Electrical Drives' at IISc Bangalore.