
REFERENCES:

-
- [1] Karimi and A. Feliachi, "Decentralized adaptive backstepping control of electric power systems," *Electric Power Systems Research*, vol. 78, no. 3, pp. 484–493, Mar. 2008.
 - [2] M. A. Mahmud, "An alternative LQR-based excitation controller design for power systems to enhance small-signal stability," *International Journal of Electrical Power & Energy Systems*, vol. 63, pp. 1–7, Dec. 2014.
 - [3] J. Hossain, A. Mahmud, N. K. Roy, and H. R. Pota, "Enhancement of Transient Stability Limit and Voltage Regulation with Dynamic Loads Using Robust Excitation Control," *International Journal of Emerging Electric Power Systems*, vol. 14, no. 6, pp. 561–570, Oct. 2013.
 - [4] P. Kundur, *Power System Stability and Control*. New York: McGraw-Hill,
 - [5] G. Gurrala and I. Sen, "Power System Stabilizers Design for Interconnected Power Systems," *IEEE Transactions on Power Systems*, vol. 25, no. 2, pp. 1042–1051, May 2010.
 - [6] R. A. Ramos, L. F. C. Alberto, and N. G. Bretas, "A New Methodology for the Coordinated Design of Robust Decentralized Power System Damping Controllers," *IEEE Transactions on Power Systems*, vol. 19, no. 1, pp. 444–454, Feb. 2004.
 - [7] A. Pal, J. S. Thorp, S. S. Veda, and V. A. Centeno, "Applying a robust control technique to damp low frequency oscillations in the WECC," *International Journal of Electrical Power & Energy Systems*, vol. 44, no. 1, pp. 638–645, Jan. 2013.
 - [8] H. Lomei, D. Sutanto, K. M. Muttaqi, and A. Alfi, "An Optimal Robust Excitation Controller Design Considering the Uncertainties in the Exciter Parameters," *IEEE Transactions on Power Systems*, vol. 32, no. 6, pp. 4171–4179, Nov. 2017.
 - [9] H. S. Ko, K. Y. Lee, and H. C. Kim, "An intelligent based LQR controller design

- to power system stabilization,” *Electric Power Systems Research*, vol. 71, no. 1, pp. 1–9, Sep. 2004.
- [10] A. I. Zecevic, G. Neskovic, and D. D. Siljak, “Robust Decentralized Exciter Control With Linear Feedback,” *IEEE Transactions on Power Systems*, vol. 19, no. 2, pp. 1096–1103, May 2004.
- [11] M. A. Mahmud, H. R. Pota, and M. J. Hossain, “Full-order nonlinear observer-based excitation controller design for interconnected power systems via exact linearization approach,” *International Journal of Electrical Power & Energy Systems*, vol. 41, no. 1, pp. 54–62, Oct. 2012.
- [12] P. Zhao, W. Yao, J. Wen, L. Jiang, S. Wang, and S. Cheng, “Improved synergetic excitation control for transient stability enhancement and voltage regulation of power systems,” *International Journal of Electrical Power & Energy Systems*, vol. 68, pp. 44–51, Jun. 2015.
- [13] H. Liu, Z. Hu, and Y. Song, “Lyapunov-Based Decentralized Excitation Control for Global Asymptotic Stability and Voltage Regulation of Multi-Machine Power Systems,” *IEEE Transactions on Power Systems*, vol. 27, no. 4, pp. 2262–2270, Nov. 2012.
- [14] W. Yao, L. Jiang, J. Fang, J. Wen, and S. Cheng, “Decentralized nonlinear optimal predictive excitation control for multi-machine power systems,” *International Journal of Electrical Power & Energy Systems*, vol. 55, pp. 620–627, Feb. 2014.
- [15] G. Kenné, R. Goma, H. Nkwawo, F. Lamnabhi-Lagarrigue, A. Arzandé, and J. C. Vannier, “An improved direct feedback linearization technique for transient stability enhancement and voltage regulation of power generators,” *International Journal of Electrical Power & Energy Systems*, vol. 32, no. 7, pp. 809–816, Sep. 2010.
- [16] M. A. Mahmud, M. J. Hossain, H. R. Pota, and A. M. T. Oo, “Robust Partial Feedback Linearizing Excitation Controller Design for Multimachine Power Systems,” *IEEE Transactions on Power Systems*, vol. 32, no. 1, pp. 3–16, Jan.

2017.

- [17] V. Kumar and S. R. Mohanty, "Fixed Time Robust Control Design for Partial Linearize Power System Model," in 2021 25th International Conference on System Theory, Control and Computing (ICSTCC), Oct. 2021, pp. 113–118.
- [18] V. Kumar and S. R. Mohanty, "Back Stepping Optimal Scheme with Fractional Order Control for Power System Model," in 2021 9th IEEE International Conference on Power Systems (ICPS), Dec. 2021, pp. 1–6.
- [19] M. A. Mahmud, H. R. Pota, M. Aldeen, and M. J. Hossain, "Partial Feedback Linearizing Excitation Controller for Multimachine Power Systems to Improve Transient Stability," *IEEE Transactions on Power Systems*, vol. 29, no. 2, pp. 561–571, Mar. 2014.
- [20] X. F. Yuan, Y. N. Wang, and L. H. Wu, "Adaptive Inverse Control of Excitation System with Actuator Uncertainty," *Neural Processing Letters*, vol. 27, no. 2, pp. 125–136, Apr. 2008.
- [21] R. Yan, Z. Dong, T. K. Saha, and R. Majumder, "A power system nonlinear adaptive decentralized controller design," *Automatica*, vol. 46, no. 2, pp. 330–336, Feb. 2010.
- [22] S.-S. Lee, S.-Y. Li, and J.-K. Park, "Nonlinear adaptive back-stepping controller design for power system stabilizer in multi-machine power systems," in 2008 American Control Conference, Jun. 2008, pp. 2504–2509.
- [23] B. Wang and Z. Shi, "Backstepping adaptive variable structure excitation controller for multi-machine power system," in 2011 International Conference on Electrical and Control Engineering, Sep. 2011, pp. 88–91.
- [24] D. Gan, H. Xin, Y. Ni, and K. Wang, "Non-linear robust adaptive excitation controller design in power systems based on a new back-stepping method," *IET Control Theory & Applications*, vol. 4, no. 12, pp. 2947–2957, Dec. 2010.
- [25] R. L. A. Ribeiro, C. M. S. Neto, F. B. Costa, T. O. A. Rocha, and R. L. Barreto, "A sliding-mode voltage regulator for salient pole synchronous generator," *Electric Power Systems Research*, vol. 129, pp. 178–184, Dec. 2015.

- [26] A. Colbia-Vega, J. de León-Morales, L. Fridman, O. Salas-Peña, and M. T. Mata-Jiménez, “Robust excitation control design using sliding-mode technique for multimachine power systems,” *Electric Power Systems Research*, vol. 78, no. 9, pp. 1627–1634, Sep. 2008.
- [27] J. Yang, S. Li, and X. Yu, “Sliding-Mode Control for Systems With Mismatched Uncertainties via a Disturbance Observer,” *IEEE Transactions on Industrial Electronics*, vol. 60, no.1, pp. 160–169, Jan. 2013.
- [28] F. Castanos and L. Fridman, “Analysis and Design of Integral Sliding Manifolds for Systems With Unmatched Perturbations,” *IEEE Transactions on Automatic Control*, vol. 51, no. 5, pp. 853–858, May 2006.
- [29] V. O. Nikiforov, D. Gerasimov, and A. Pashenko, “Modular Adaptive Backstepping Design with a High-Order Tuner,” *IEEE Transactions on Automatic Control*, pp. 1–1, 2021.
- [30] J. A. Farrell, M. Polycarpou, M. Sharma, and Wenjie Dong, “Command Filtered Backstepping,” *IEEE Transactions on Automatic Control*, vol. 54, no. 6, pp. 1391–1395, Jun. 2009.
- [31] R. Patel, F. Hafiz, A. Swain, and A. Ukil, “Nonlinear Excitation Control of Diesel Generator: A Command Filter Backstepping Approach,” *IEEE Transactions on Industrial Informatics*, vol. 17, no. 7, pp. 4809–4817, Jul. 2021.
- [32] Kiaei, M. Rostami and S. Lotfifard, "Robust Decentralized Control of Synchronous Generators for Improving Transient Stability of Multimachine Power Grids", *IEEE Systems Journal*, vol. 15, no. 3, pp. 3470-3479, Sept. 2021.
- [33] Q. Lu, Y. Sun, Z. Xu, and T. Mochizuki, “Decentralized nonlinear optimal excitation control,” *IEEE Transactions on Power Systems*, vol. 11, no. 4, pp. 1957–1962, 1996.
- [34] W. Qiu, V. Vittal, and M. Khammash, “Decentralized power system stabilizer design using linear parameter varying approach,” *IEEE Trans. on Power Systems*, vol. 19, no. 4, pp. 1951–1960, 2004.
- [35] N. Jiang and H. D. Chiang, “A two-time scale dynamic correction method for

- fifth-order generator model undergoing large disturbances,” IEEE Transactions on Power Systems, vol. 31, no. 5, pp. 3616–3623, 2016.
- [36] T. K. Roy, Md. A. Mahmud, W. Shen, and A. M. T. Oo, “Nonlinear Adaptive Excitation Controller Design for Multimachine Power Systems With Unknown Stability Sensitive Parameters,” IEEE Transactions on Control Systems Technology, vol. 25, no. 6, pp. 2060–2072, Nov. 2017.
- [37] J. Jiang and A. Astolfi, “Stabilization of a Class of Underactuated Nonlinear Systems via Underactuated Back-Stepping,” IEEE Transactions on Automatic Control, vol. 66, no. 11, pp. 5429–5435, Nov. 2021.
- [38] A. Chalanga, S. Kamal, and B. Bandyopadhyay, “A New Algorithm for Continuous Sliding Mode Control with Implementation to Industrial Emulator Setup,” IEEE/ASME Transactions on Mechatronics, vol. 20, no. 5, pp. 2194–2204, Oct. 2015.
- [39] V. Torres-González, T. Sanchez, L. M. Fridman, and J. A. Moreno, “Design of Continuous Twisting Algorithm,” Automatica, vol. 80, pp. 119–126, Jun. 2017.
- [40] H. Khalil, Nonlinear Systems, 3rd ed. Englewood Cliffs, NJ: Prentice-Hall, 2002.
- [41] Q.-Y. Fan and G.-H. Yang, “Active Complementary Control for Affine Nonlinear Control Systems with Actuator Faults,” IEEE Transactions on Cybernetics, vol. 47, no. 11, pp. 3542–3553, Nov. 2017.
- [42] T. K. Roy, Md. A. Mahmud, and A. M. T. Oo, “Robust Adaptive Backstepping Excitation Controller Design for Higher-Order Models of Synchronous Generators in Multimachine Power Systems,” IEEE Transactions on Power Systems, vol. 34, no. 1, pp. 40–51, Jan. 2019.
- [43] S. Huang et al., “Fixed-Time Backstepping Fractional-Order Sliding Mode Excitation Control for Performance Improvement of Power System,” IEEE Transactions on Circuits and Systems I: Regular Papers, vol. 69, no. 2, pp. 956–969, Feb. 2022.
- [44] P. Kundur, Power System Stability and Control. New York, USA: Mc-Graw-Hill, 1994.

- [45] Y. N. Yu, *Electric Power System Dynamics*. New York, USA: Academic Press, 1983.
- [46] R. Majumder, B. Chaudhuri, H. El-Zobaidi, B. C. Pal, and I. M. Jaimoukha, "LMI approach to normalised H_∞ loop-shaping design of power system damping controllers," *IEE Proceedings - Generation, Transmission and Distribution*, vol. 152, no. 6, p. 952, 2005.
- [47] M. Bhadu, N. Senroy, I. Narayan Kar, and G. N. Sudha, "Robust linear quadratic Gaussian-based discrete mode wide area power system damping controller," *IET Generation, Transmission & Distribution*, vol. 10, no. 6, pp. 1470–1478, Apr. 2016.
- [48] Guoxiao Guo, Youyi Wang, and D. J. Hill, "Nonlinear output stabilization control for multimachine power systems," *IEEE Transactions on Circuits and Systems I: Fundamental Theory and Applications*, vol. 47, no. 1, pp. 46–53, 2000.
- [49] J. Li, Y. Liu, C. Li, and B. Chu, "Passivity-Based Nonlinear Excitation Control of Power Systems with Structure Matrix Reassignment," *Information*, vol. 4, no. 3, pp. 342–350, Aug. 2013.
- [50] J. Fei and Y. Chen, "Dynamic Terminal Sliding-Mode Control for Single-Phase Active Power Filter Using New Feedback Recurrent Neural Network," *IEEE Transactions on Power Electronics*, vol. 35, no. 9, pp. 9904–9922, Sep. 2020.
- [51] J. Fei and Y. Chen, "Fuzzy Double Hidden Layer Recurrent Neural Terminal Sliding Mode Control of Single-Phase Active Power Filter," *IEEE Transactions on Fuzzy Systems*, vol. 29, no. 10, pp. 3067–3081, Oct. 2021.
- [52] W. Chen, S. S. Ge, J. Wu and M. Gong, "Globally Stable Adaptive Backstepping Neural Network Control for Uncertain Strict-Feedback Systems with Tracking Accuracy Known a Priori," *IEEE Transactions on Neural Networks and Learning Systems*, vol. 26, no. 9, pp. 1842-1854, Sept. 2015.
- [53] J. T. Spooner, M. Maggiore, R. Ordóñez, and K. M. Passino, "Stable Adaptive Control and Estimation for Nonlinear Systems". New York, USA: John Wiley & Sons, Inc., 2002.

- [54] S. C. Yogi, V. K. Tripathi, and L. Behera, "Adaptive Integral Sliding Mode Control Using Fully Connected Recurrent Neural Network for Position and Attitude Control of Quadrotor," *IEEE Transactions on Neural Networks and Learning Systems*, vol. 32, no. 12, pp. 5595–5609, Dec. 2021.
- [55] Y. Li, Y. Liu and S. Tong, "Observer-Based Neuro-Adaptive Optimized Control of Strict-Feedback Nonlinear Systems with State Constraints," in *IEEE Transactions on Neural Networks and Learning Systems*, Early Access.
- [56] C. Peng, Y. Bai, X. Gong, Q. Gao, C. Zhao, and Y. Tian, "Modeling and robust backstepping sliding mode control with adaptive RBFNN for a novel coaxial eight-rotor UAV," *IEEE/CAA J. Automatica Sinica*, vol. 2, no. 1, pp. 56–64, Jan. 2015.
- [57] J. Fei, Y. Chen, L. Liu and Y. Fang, "Fuzzy Multiple Hidden Layer Recurrent Neural Control of Nonlinear System Using Terminal Sliding-Mode Controller," *IEEE Transactions on Cybernetics*, early access.
- [58] H. Guo, W. Zeng, Y. Shi, J. Deng and L. Zhao, "Kernel Granger Causality Based on Back Propagation Neural Network Fuzzy Inference System on fMRI Data," *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 28, no. 5, pp. 1049-1058, May 2020.
- [59] Y. Li, X. Min and S. Tong, "Observer-Based Fuzzy Adaptive Inverse Optimal Output Feedback Control for Uncertain Nonlinear Systems," *IEEE Transactions on Fuzzy Systems*, vol. 29, no. 6, pp. 1484-1495, June 2021.
- [60] M. J. Hossain, H. R. Pota, V. A. Ugrinovskii, and R. A. Ramos, "Voltage mode stabilisation in power systems with dynamic loads," *Int. Journal Elect. & Power Eng. Syst.*, vol. 32, no. 9, pp. 911–920, Nov. 2010.
- [61] P. Zhao and O. P. Malik, "Design of an Adaptive PSS Based on Recurrent Adaptive Control Theory," *IEEE Transactions on Energy Conversion*, vol. 24, no. 4, pp. 884-892, Dec. 2009.
- [62] D. K. Chaturvedi and O. P. Malik, "Generalized neuron-based adaptive PSS for multimachine environment," *IEEE Transactions on Power Systems*, vol. 20, no.

- 1, pp. 358-366, Feb. 2005.
- [63] M. A. Mahmud, M. J. Hossain, H. R. Pota, and N. K. Roy, "Robust nonlinear excitation controller design for multimachine power systems," in 2014 IEEE PES General Meeting, July 2014, pp. 1–5.
- [64] M. A. Mahmud, M. J. Hossain, H. R. Pota, and M. S. Ali, "Zero dynamic excitation controller design for power system with dynamic load," in Australasian Universities Power Engineering Conf., Sept 2011, pp. 1–7.
- [65] B. Fan, Q. Yang, K. Wang, J. Xu, and Y. Sun, "Transient stability enhancement control of power system with time varying constraints," *IET Generation, Trans. & Distribution*, vol. 10, no. 13, pp. 3251–3263, 2016.
- [66] A. G. Loukianov, J. M. Canedo, V. I. Utkin, and J. C.-Vazquez, "Discontinuous controller for power systems: sliding-mode block control approach," *IEEE Trans. on Ind. Elec.*, vol. 51, no. 2, pp. 340–353, April 2004.
- [67] T. K. Roy, M. A. Mahmud, W. X. Shen, A. M. T. Oo, and M. E. Haque, "Robust nonlinear adaptive backstepping excitation controller design for rejecting external disturbances in multimachine power systems," *Int. Journal Elect. Power & Eng. Syst.*, vol. 84, pp. 76–86, 2017.
- [68] T. K. Roy, M. A. Mahmud, W. X. Shen, and A. M. T. Oo, "Non-linear adaptive coordinated controller design for multimachine power systems to improve transient stability," *IET Generation, Trans. & Distribution*, vol. 10, no. 13, pp. 3353–3363, 2016.
- [69] T. K. Roy, M. A. Mahmud, W. Shen, and A. T. Oo, "Nonlinear adaptive excitation controller design for multimachine power systems," *IEEE PES General Meeting*, pp. 1–5, Jun. 2015.
- [70] A. Mitra, M. Mukherjee, and K. Naik, "Enhancement of power system transient stability using a novel adaptive backstepping control law," in *Proc. Of IEEE Third Int. Conf. on Computer, Communication, Control and Information Technology*, pp. 1–5, Feb. 2015.
- [71] K. Wang, H. Xin, D. Gan, and Y. Ni, "Nonlinear robust adaptive excitation

- controller design in power systems based on a new backstepping method,” *IET Control Theory Application*, vol. 4, no. 2, pp. 2947–2957, 2010.
- [72] R. Marino, T. Shen, and C. M. Verrelli, “Robust adaptive transient stabilization of a synchronous generator with parameter uncertainty,” *European Journal of Control*, vol. 12, no. 2, pp. 135–148, 2006.
- [73] X. Bu, “Air-Breathing Hypersonic Vehicles Funnel Control Using Neural Approximation of Non-affine Dynamics,” *IEEE/ASME Transactions on Mechatronics*, vol. 23, no. 5, pp. 2099-2108, Oct. 2018.
- [74] X. Bu and Q. Qi, “Fuzzy Optimal Tracking Control of Hypersonic Flight Vehicles via Single-Network Adaptive Critic Design,” *IEEE Transactions on Fuzzy Systems*, vol. 30, no. 1, pp. 270-278, Jan. 2022.
- [75] X. Bu, B. Jiang and H. Lei, “Nonfragile Quantitative Prescribed Performance Control of Waverider Vehicles With Actuator Saturation,” *IEEE Transactions on Aerospace and Electronic Systems*, vol. 58, no. 4, pp. 3538-3548, Aug. 2022.
- [76] Zhiyong Chen, “Nussbaum functions in adaptive control with time-varying unknown control coefficients,” *Automatica*, vol. 102, pp. 72-79, 2019.
- [77] K. Zhao, Y. Song, C. L. P. Chen and L. Chen, “Adaptive Asymptotic Tracking with Global Performance for Nonlinear Systems with Unknown Control Directions,” *IEEE Transactions on Automatic Control*, vol. 67, no. 3, pp. 1566-1573, March 2022.
- [78] J. Wu, W. Sun, S. -F. Su and Y. Wu, “Adaptive Asymptotic Tracking Control for Input-Quantized Nonlinear Systems with Multiple Unknown Control Directions,” *IEEE Transactions on Cybernetics*, 2022.
- [79] D. Li, H. -G. Han and J. -F. Qiao, “Adaptive NN Controller of Nonlinear State-Dependent Constrained Systems with Unknown Control Direction,” *IEEE Transactions on Neural Networks and Learning Systems*, 2022.
- [80] M. Lv, B. De Schutter, Y. Wang and D. Shen, “Fuzzy Adaptive Zero-Error-Constrained Tracking Control for HFVs in the Presence of Multiple Unknown Control Directions,” *IEEE Transactions on Cybernetics*, 2022.

- [81] J. -X. Zhang, Q. -G. Wang and W. Ding, "Global Output-Feedback Prescribed Performance Control of Nonlinear Systems with Unknown Virtual Control Coefficients," *IEEE Transactions on Automatic Control*, 2022.
- [82] C. Hua, H. Li, K. Li and W. Ding, "Low-Computation Tracking Control of Nonlinear Systems with Asymmetric Full-State Constraints and Unknown Control Directions," *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 2022.
- [83] M. Krstić, I. Kanellakopoulos and P.V. Kokotović, *Nonlinear and adaptive control design*. New York: Wiley, 1995.
- [84] V.O. Nikiforov , K.V. Voronov, "Adaptive backstepping with high-order tuner", *Automatica*, Vol.37. pp.1953–1960, 2001.
- [85] S. Mehraeen, S. Jagannathan and M. L. Crow, "Power System Stabilization Using Adaptive Neural Network-Based Dynamic Surface Control," *IEEE Transactions on Power Systems*, vol. 26, no. 2, pp. 669-680, May 2011.
- [86] J. Lago and M. L. Heldwein, "Operation and control-oriented modelling of a power converter for current balancing and stability improvement of dc active distribution networks," *IEEE Trans. Power Electron.*, vol. 26, no. 3, pp. 877–884, Mar. 2011.
- [87] H.-S. Kim, M.-H. Ryu, J.-W. Baek, and J.-H. Jung, "High-efficiency isolated bidirectional AC–DC converter for a DC distribution system," *IEEE Trans. Power Electron.*, vol. 28, no. 4, pp. 1642–1653, Apr. 2013.
- [88] H. Fakham, D. Lu, and B. Francois, "Power control design of a battery charger in a hybrid active PV generator for load-following applications," *IEEE Trans. Ind. Electron.*, vol. 58, no. 1, pp. 85–93, Jan. 2011.
- [89] N. R. Nargari and G. Joos, "Performance investigation of a current controlled voltage regulated PWM rectifier in rotating and stationary frames," *IEEE Tr ans. Ind. Electron.*, vol. 42, no. 4, pp. 396–401, Aug. 1995.
- [90] J. Dannehl, C.Wessels, and F. W. Fuchs, "Limitations of voltage-oriented PI current control of grid-connected PWM rectifiers with LCL filters," *IEEE Trans.*

- Ind. Electron., vol. 56, no. 2, pp. 380–387, Feb, 2009.
- [91] M. Liserre, F. Blaabjerg, and S. Hansen, “Design and control of an LCLfilter-based three-phase active rectifier,” *IEEE Trans. Ind. Appl.*, vol. 41, no. 5, pp. 1281–1290, Sep./Oct. 2005.
- [92] B. Parkhideh and S. Bhattacharya, “Vector-controlled voltage-sourceconverter-based transmission under grid disturbances,” *IEEE Trans. Power Electron.*, vol. 28, no. 2, pp. 661–671, Feb. 2013.
- [93] M. Hagiwara and H. Akagi, “An approach to regulating the DC-link voltage of a voltage-source BTB system during power line faults,” *IEEE Trans. Ind. Appl.*, vol. 41, no. 5, pp. 1263–1270, Sep./Oct. 2007.
- [94] J. Yao, H. Li, Y. Liao, and Z. Chen, “An improved control strategy of limiting the DC-link voltage fluctuation for a doubly fed induction wind generator,” *IEEE Trans. Power Electron.*, vol. 23, no. 3, pp. 1205–1212, May 2008.
- [95] D. Dong, I. Cvetkovic, D. Boroyevich, W. Zhang, R. Wang, and P. Mattavelli, “Grid-interface bidirectional converter for residential dc distribution systems—Part one: High-density two-stage topologies,” *IEEE Trans. Power Electron.*, vol. 28, no. 4, pp. 1651–1665, Apr. 2013.
- [96] Chengshan Wang, Xialin Li, Li Guo, and Yun Wei Li, “A Nonlinear-Disturbance-Observer-Based DC-Bus Voltage Control for a Hybrid AC/DC Microgrid,” *IEEE Trans. Power Electron.*, vol. 29, no. 11, pp. 6162–6177, Apr. 2013.
- [97] A.H. Etemadi, E.J. Davison, R. Iravani, “A Generalized Decentralized Robust Control of Islanded Microgrids”, *IEEE Trans. on Power Sys.*, vol. 29, no. 6, pp. 3102-3113, Oct.2014.
- [98] M.J. Hossain, H.R. Pota, M.A. Mahmud, M. Aldeen, “Robust Control for Power Sharing in Microgrids with Low-Inertia Wind and PV Generators”, *IEEE Trans. on Sust. Energy*, vol. 6, no. 3, pp. 1067 – 1077, June 2015.
- [99] M. Cucuzzella, G.P. Incremona, A. Ferrara, “Design of Robust Higher Order Sliding Mode Control for Microgrids”, *IEEE J. of Emerg. and Selec. Topics in*

- Circuits and Systems, vol. 5, no. 3, pp. 393-401, Sept. 2015.
- [100] Vivek Kumar and Iqbal Ali. "Fractional order sliding mode approach for chattering free direct power control of dc/ac converter", IET Power Electronics, vol.12, No.13 pp.3600-3610, June 2019.
- [101] H.R. Baghaee, M. Mirsalim, G.B. Gharehpetian and H. Talebi, "Decentralized Sliding Mode Control of WG/PV/FC Microgrids under Unbalanced and Nonlinear Load Conditions for on and off-Grid Modes", IEEE Sys. Journal, vol.12, No.4, pp.3108-3119, Dec. 2018.
- [102] G.P. Incremona, M. Cucuzzella, A. Ferrara, "Adaptive suboptimal second-order sliding mode control for microgrids", Int. J. of Control, vol. 89, no. 9, pp. 1849-1867, Jan. 2016.
- [103] Dezhi Xu, Weiming Zhang, Bin Jiang, Peng Shi, and Shuoyu Wang, "Directed-Graph-Observer-Based Model-Free Cooperative Sliding Mode Control for Distributed Energy Storage Systems in DC Microgrid", IEEE Transactions on Industrial Informatics, Early Access, Aug. 2019.
- [104] Suresh Singh, Vinod Kumar and Deepak Fulwani, "Mitigation of destabilising effect of CPLs in island DC micro-grid using non-linear control", IET Power Electronics, vol. 10, no. 3, Oct. 2017.
- [105] Ujjwal Kumar Kalla, Bhim Singh, S. Sreenivasa Murthy, Chinmay Jain and Krishan Kant, "Adaptive Sliding Mode Control of Standalone Single-Phase Microgrid Using Hydro, Wind, and Solar PV Array-Based Generation", IEEE Transactions on smart grid, vol. 9, no. 6, pp. 6806-6814, Nov. 2018.
- [106] H.R. Baghaee, M. Mirsalim, G.B. Gharehpetian, and H.A. Talebi, "A Decentralized Power Management and Sliding Mode Control Strategy for Hybrid AC/DC Microgrids including Renewable Energy Resources," IEEE Transactions on Industrial Informatics, Early Access, Mar. 2017.
- [107] H. H. Choi, "LMI-based sliding surface design for integral sliding model control of mismatched uncertain systems," IEEE Trans. Autom. Control, vol. 52, no. 4, pp. 736-742, April. 2007.

- [108]B. R. Barmish and G. Leitmann, "On ultimate boundedness control of uncertain systems in the absence of matching condition," *IEEE Trans. Autom. Control*, vol.27, No. 1, pp. 153–158, Feb. 1982.
- [109]S. Li, J. Yang, W.-H. Chen, and X. Chen, "Generalized extended state observer-based control for systems with mismatched uncertainties," *IEEE Trans. Ind. Electron.*, vol. 59, no. 12, pp. 4792 – 4802, Dec. 2012.
- [110]J. Yang, A. Zolotas, W.-H. Chen, K. Michail, and S. Li, "Robust control of nonlinear MAGLEV suspension system with mismatched uncertainties via DOBC approach," *ISA Trans.*, vol. 50, no. 3, pp. 389–396, Jul. 2011.
- [111]R. R. Nair, L. Behera, and S. Kumar, "Event-triggered finite-time integral sliding mode controller for consensus-based formation of multirobot systems with disturbances," *IEEE Transactions on Control Systems Technology*, vol. 27, no. 1, pp. 39–47, Jan 2019.
- [112]A. K. Behera and B. Bandyopadhyay, "Event-triggered sliding mode control for a class of nonlinear systems," *International Journal of Control*, vol. 89, no. 9, pp. 1916–1931, 2016.
- [113]Hongyue LI, Xihuai Wang & Jianmel Xiao., "Adaptive Event-Triggered Load Frequency Control for Interconnected Microgrids by Observer-Based Sliding Mode Control", *IEEE Access*, vol. No.7 pp. 68271 - 68280, May 2019.
- [114]Hamid Reza Baghaee, Mojtaba Mirsalim, Gevork B. Gharehpetian and Heidar Ali Talebi, "A generalized descriptor-system robust H1 control of autonomous microgrids to improve small and large signal stability considering communication delays and load nonlinearities," *Electrical Power and Energy Systems*, Elsevier, Vol.92, PP.63-82, 2017.
- [115]M. Liserre, F. Blaabjerg, and S. Hansen, "Design and control of an LCLfilter-based three-phase active rectifier," *IEEE Trans. Ind. Appl.*, vol. 41, no. 5, pp. 1281–1290, Sep./Oct. 2005.
- [116]M. H. Bierhoff and F. W. Fuchs, "Active damping for three-phase PWM rectifiers with high-order line-side filters," *IEEE Trans. Ind. Electron.*, vol. 56, no. 2, pp.

- 371–379, Feb. 2010.
- [117]Paweł Latosiński, “Sliding mode control based on the reaching law approach — A brief survey”, 22nd International Conference on Methods and Models in Automation and Robotics (MMAR), Miedzyzdroje, Poland, Aug. 2017, pp.519-524.
- [118]Francisco Lopez-Ramirez, Tonametl Sanchez and Jaime A. Moreno, “Construction of Lyapunov functions for homogeneous second-order systems”, 53rd IEEE Conference on Decision and Control, Los Angeles, CA, USA, 12 February 2015, pp 5494-5499.
- [119]S.P. Bhat and D.S. Bernstein, “Finite-time stability of continuous autonomous systems”, SIAM J. Control Optimization, vol.38, issue 3 pp.751–766, 2000.
- [120]X. Liu, M. Shahidehpour, Y. Cao, L. Wu, W. Wei, and X. Liu, “Microgrid risk analysis considering the impact of cyber-attacks on solar PV and ESS control systems,” IEEE Trans. Smart Grid, vol. 8, no. 3, pp. 1330–1339, May 2017.
- [121]H. He and J. Yan, “Cyber-physical attacks and defenses in the smart grid: A survey,” IET Cyber Phys. Syst. Theory Appl., vol. 1, no. 1, pp. 13–27, Dec. 2016.
- [122]A. Vasilakis et al., “The evolution of research in microgrids control,”IEEE OAJPE, vol. 7, pp. 331–343, 2020.
- [123]L. Che, M. Shahidehpour, A. Alabdulwahab, and Y. Al-Turki, “Hierarchical coordination of a community microgrid with AC and DC microgrids,” IEEE Trans. Smart Grid, vol. 6, no. 6, pp. 3042–3051, Nov. 2015.
- [124]S. Zuo, A. Davoudi, Y. Song, and F. L. Lewis, “Distributed finite-time voltage and frequency restoration in islanded AC microgrids,” IEEE Trans. Ind. Electron., vol. 63, no. 10, pp. 5988–5997, Oct. 2016.
- [125]V. Kumar and S. R. Mohanty, "Dynamic Event Driven Robust Control Design with Uncertainty Compensator for Agent Misbehave in Autonomous AC Microgrid," 2021 IEEE International Conference on Systems, Man, and Cybernetics (SMC), 2021, pp. 1406-1411.
- [126]Bidram and A. Davoudi, “Hierarchical structure of microgrids control system,”

- IEEE Trans. Smart Grid, vol. 3, no. 4, pp. 1963–1976, Dec. 2012.
- [127]Fahimi, B., Kwasinski, A., Davoudi, A., Balog, R.S., Kiani, M.: ‘Charge it’, Power Energy Mag., 2011, vol.9, no.4, pp. 54–64.
- [128]Guerrero, J.M., Vásquez, J.C., Matas, J., Castilla, M., Vicuña, L.G.d., Castilla, M.: ‘Hierarchical control of droop-controlled AC and DC microgrids – A general approach toward standardization’, IEEE Trans. Ind. Electron., 2011, vol.58, no.1, pp. 158–172.
- [129]Sao, C.K., Lehn, W.: ‘Control and power management of converter fed microgrids’, IEEE Trans. Power Syst., 2008, vol. 23, no.3, pp. 1088–1098.
- [130]R. Majumder, “Some aspects of stability in microgrids,” IEEE Trans. Power Syst., vol. 28, no. 3, pp. 3243–3252, Aug. 2013.
- [131]X. Guan, B. Yang, C. Chen, and W. Dai, “A comprehensive overview of cyber-physical systems: From perspective of feedback system,” IEEE/CAA J. Autom. Sinica, vol. 3, no. 1, pp. 1–14, Jan. 2016.
- [132]X. Jin, “Fault tolerant finite-time leader-follower formation control for autonomous surface vessels with LOS range and angle constraints,” Automatica, vol. 68, pp. 228–236, Feb. 2016.
- [133]Y. Shoukry et al., “SMT-based observer design for cyber-physical systems under sensor attacks,” in Proc. ACM/IEEE 7th Int.Conf.Cyber-Phys. Syst., Vienna, Austria, 2016, pp. 1–10.
- [134]S. Sridhar, A. Hahn, and M.Govindarasu, “Cyber-physical system security for the electric power grid,” Proc. IEEE, vol. 100, no. 1, pp. 210–224, Oct. 2012.
- [135]B. Zheng, P. Deng, R. Anguluri, Q. Zhu, and F. Pasqualetti, “Cross-layer codesign for secure cyber-physical systems,” IEEE Trans. Comput.-Aided Des. Integr. Circuits Syst., vol. 35, no. 5, pp. 699–711, Feb. 2016.
- [136]A. Farraj, E. Hammad and D. Kundur, "A Cyber-Physical Control Framework for Transient Stability in Smart Grids," IEEE Transactions on Smart Grid, vol. 9, no. 2, pp. 1205-1215, March 2018.
- [137]H. S. Li, L. F. Lai, and H. V. Poor, “Multicast routing for decentralized control

- of cyber physical systems with an application in smart grid,” *IEEE J. Sel. Areas Commun.*, vol. 30, no. 6, pp. 1097–1107, Jul. 2012.
- [138] L. Schenato, B. Sinopoli, M. Franceschetti, K. Poolla, and S. Sastry, “Foundations of control and estimation over lossy networks,” *Proc. IEEE*, vol. 95, no. 1, pp. 163–185, Jan. 2007.
- [139] J. Hespanha, P. Naghshtabrizi, and Y. Xu, “A survey of recent results in networked control systems,” *Proc. IEEE*, vol. 95, no. 1, pp. 138–162, Jan. 2007.
- [140] Y. Liu, M. Reiter, and P. Ning, “False data injection attacks against state estimation in electric power grids,” in *Proc. ACM Conf. Computer and Commun. Security*, Chicago, IL, USA, 2009.
- [141] G. Dan and H. Sandberg, “Stealth attacks and protection schemes for state estimators in power systems,” in *Proc. IEEE Int. Conf. Smart Grid Commun.*, Gaithersburg, MD, USA, 2010, pp. 214–219.
- [142] H. Fawzi, P. Tabuada, and S. Diggavi, “Secure state-estimation for dynamical systems under active adversaries,” in *Proc. Annu. Allerton Conf. Commun., Control, Comput.*, 2011.
- [143] F. Pasqualetti, F. Dorfler, and F. Bullo, “Attack detection and identification in cyber-physical systems,” *IEEE Trans. Autom. Control*, vol. 58, no. 11, pp. 2715–2729, Nov. 2013.
- [144] Y. Fujita, T. Namerikawa, and K. Uchida, “Cyber-attack detection and faults diagnosis in power networks by using state fault diagnosis matrix,” in *Proc. Eur. Control Conf.*, Zurich, Switzerland, 2013.
- [145] W. Xu, K. Ma, W. Trappe, and Y. Zhang, “Jamming sensor networks: Attack and defense strategies,” *IEEE Network*, vol. 20, no. 3, pp. 41–47, May-Jun. 2006.
- [146] D. Thuente and M. Acharya, “Intelligent jamming in wireless networks with applications to 802.11b and other networks,” in *Proc. 25th IEEE Commun. Soc. Military Commun. Conf.*, Washington, DC, USA.
- [147] P. Srikantha and D. Kundur, “Denial of service attacks and mitigation for stability in cyber-enabled power grid,” in *Proc. IEEE Power Energy Soc. Innovative*

- Smart Grid Technol. Conf., Feb. 2015, pp. 1–5.
- [148] S. Liu, P. X. Liu, and X. Wang, “Effects of cyber-attacks on islanded microgrid frequency control,” in Proc. IEEE 20th Int. Conf. Comput. Supported Cooperative Work Des., May 2016, pp. 461–464.
- [149] P. Danzi, M. Angjelichinoski, C. Stefanovic, and P. Popovski, “Antijamming strategy for distributed microgrid control based on power talk communication,” in Proc. IEEE Int. Conf. Commun. Workshops, May 2017, pp. 911–917.
- [150] M. Chlela, D. Mascarella, G. Joos, and M. Kassouf, “Fallback control for isochronous energy storage systems in autonomous microgrids under denial-of-service cyber-attacks,” IEEE Trans. Smart Grid, vol. 9, no. 5, pp. 4702–4711, Sep. 2018.
- [151] A. Teixeira, K. Paridari, H. Sandberg, and K. H. Johansson, “Voltage control for interconnected microgrids under adversarial actions,” in Proc. IEEE 20th Conf. Emerg. Technol. Factory Automat., Sep. 2015, pp. 1–8.
- [152] R. Fu, X. Huang, J. Sun, Z. Zhou, D. Chen, and Y. Wu, “Stability analysis of the cyber physical microgrid system under the intermittent dos attacks,” Energies, vol. 10, no. 5, pp. 1–15, 2017.
- [153] W. Xu, W. Trappe, Y. Zhang, and T. Wood, “The feasibility of launching and detecting jamming attacks in wireless networks,” in Proc. ACM Int. Symp. Mobile Ad-Hoc Netw. Comput., 2005.
- [154] B. DeBruhl and P. Tague, “Digital filter design for jamming mitigation in 802.15.4 communication,” in Proc. Int. Conf. Comput. Commun. Netw., Maui, HI, USA, 2011.
- [155] P. Tague, M. Li, and R. Poovendran, “Mitigation of control channel jamming under node capture attacks,” IEEE Trans. Mobile Comput., vol. 8, no. 9, pp. 1221–1234, Sep. 2009.
- [156] C. De Persis and P. Tesi, “Input-to-State Stabilizing Control Under Denial-of-Service,” IEEE Transactions on Automatic Control, vol. 60, no. 11, pp. 2930–2944, Nov. 2015.

- [157]Y. Xu, Q. Guo, H. Sun, and Z. Fei, “Distributed discrete robust secondary cooperative control for islanded microgrids,” *IEEE Trans. Smart Grid*, pp. 1–1, 2018.
- [158]Ali Bidram, Frank L. Lewis and Ali Davoudi, “Distributed Control Systems for Small-Scale Power Networks: Using Multiagent Cooperative Control Theory”, *IEEE Control Systems Magazine*, vol. 34, no.6, pp. 56–77, Dec.2014.
- [159]E. Sontag, “Input to state stability: Basic concepts and results”, *Nonlinear and Optimal Control Theory Lecture Notes in Math.*, vol. 1932, pp. 163–220, 2008.
- [160]Y. Zhu, X. Guan, X. Luo, and S. Li, “Finite-time consensus of multiagent system via nonlinear event-triggered control strategy”, *IET Control Theory Appl.*, vol. 9, no. 17, pp. 2548–2552, Nov.2015.
- [161]S. Yu, X. Yu, B. Shirinzadeh, and Z. Man, “Continuous finite time control for robotic manipulators with terminal sliding mode”, *Automatica*, vol. 41, no. 11, pp. 1957–1964, Nov. 2005.
- [162]V. Kumar, S. R. Mohanty and S. Kumar, "Event Trigger Super Twisting Sliding Mode Control for DC Micro Grid with Matched/Unmatched Disturbance Observer," *IEEE Transactions on Smart Grid*, vol. 11, no. 5, pp. 3837-3849, Sept. 2020.

LIST OF PUBLICATION

A. PUBLICATION IN REFERRED AND PEER-REVIEWED JOURNALS

Table 7.1. Publication in referred and peer-reviewed Journals

S. N.	Publication	Impact Factor
1	V. Kumar and S. R. Mohanty, "Resilient Optimal Gain Control and Continuous Twisting Observer for Enhanced Power System Performance Under Uncertainties," in IEEE Systems Journal, 2022, doi: 10.1109/JSYST.2022.3202967.	4.802
2	V. Kumar, U. Prasad and S. R. Mohanty, "Entirely Coupled Recurrent Neural Network-Based Backstepping Control for Global Stability of Power System Networks," in IEEE Transactions on Automation Science and Engineering, doi: 10.1109/TASE.2023.3243405.	6.636
3	V. Kumar, S. R. Mohanty, Nand Kishor, and Udit Prasad, "Global Adaptive Asymptotic Performance with Indefinite Control Coefficient and Adjustable Parameters in Power System," in IEEE Transactions on Network Science and Engineering, 2023, (Under Review).	5.033
4	V. Kumar, S. R. Mohanty and S. Kumar, "Event Trigger Super Twisting Sliding Mode Control for DC Micro Grid With Matched/Unmatched Disturbance Observer," in IEEE Transactions on Smart Grid, vol. 11, no. 5, pp. 3837-3849, Sept. 2020.	10.275

B. PUBLICATION IN BOOK CHAPTER

Table 7.2. Publication in Book Chapter

S. N.	Publication
1	Vivek Kumar, Soumya R. Mohanty, Chapter 1 - Denial-of-service attack resilient control for cyber physical microgrid system, Microgrid Cyber physical Systems, Elsevier, 2022, Pages 1-27, ISBN 9780323999106, https://doi.org/10.1016/B978-0-323-99910-6.00011-6 .

C. PUBLICATION IN INTERNATIONAL CONFERENCES

Table 7.3. Publication in national/international conferences.

S. N.	Publication
1	V. Kumar and S. R. Mohanty, "Back Stepping Optimal Scheme with Fractional Order Control for Power System Model," 2021 9th IEEE International Conference on Power Systems (ICPS), Kharagpur, India, 2021, pp. 1-6, doi: 10.1109/ICPS52420.2021.9670189.
2	V. Kumar and S. R. Mohanty, "Fixed Time Robust Control Design for Partial Linearize Power System Model," 2021 25th International Conference on System Theory, Control and Computing (ICSTCC), Iasi, Romania, 2021, pp. 113-118, doi: 10.1109/ICSTCC52150.2021.9607320.
3	V. Kumar, S. R. Mohanty and M. Banafer, "Fractional Order Control with Super Twisting Observer for AC Microgrid," 2021 29th Mediterranean Conference on Control and Automation (MED), PUGLIA, Italy, 2021, pp. 1013-1018, doi: 10.1109/MED51440.2021.9480323.
4	V. Kumar and S. R. Mohanty, "Dynamic Event Driven Robust Control Design with Uncertainty Compensator for Agent Misbehave in Autonomous AC Microgrid," 2021 IEEE International Conference on Systems, Man, and Cybernetics (SMC), Melbourne, Australia, 2021, pp. 1406-1411, doi: 10.1109/SMC52423.2021.9659293.
5	V. Kumar and S. R. Mohanty, "Event Based Robust Action for Fault Restrained Secondary Control of DC Microgrid," 2021 14th IEEE International Conference on Industry Applications (INDUSCON), São Paulo, Brazil, 2021, pp. 1379-1384, doi: 10.1109/INDUSCON51756.2021.9529440.