

Dr. B. B. Musmade

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- **Educational Qualification:** Ph.D. (Instru. Engg.), M.E.(Instru. & Control).
- **Experience:** 25 years.
- **Areas of Interest:** Process Control and Automation, Control Systems, Sliding Mode Control.
- **Memberships:**
 - 1. Member IEEE : **98020737.**
 - 2. Member IET : **1100397893.**
 - 3. Life member ISTE : **LM36948.**
 - 4. Life Member ISOI : **1219.**
- **Courses Handled:**
 - **Under Graduate:**
 - Process Instrumentation
 - Process Dynamics and Control
 - Data Science
 - Automatic Control Systems
 - Sensors & Transducers
 - Embedded System Design
 - Modern Control Theory
 - Process Loop Components
 - Process Modeling & Optimization
 - PLC, SCADA, DCS based Industrial Automation
 - Advanced Control Systems.
- **Post Graduate** (Electrical & Mech. Engg.):
- Computer Aided Control System Design
 - Research Methodology.
- **Administrative responsibilities:**
 - **University Level:**
 - Member, Board of Studies in Instrumentation & Control Engg., Savitribai Phule Pune University. (2019-2022)
 - Ex-Coordinator and Member, Board of Studies in Instrumentation & Control Engg., Savitribai Phule Pune University. (2008-2010), (2015-2018).
 - Member, Staff Selection, Permanent Affiliation Committee & Local Inquiry Committee, SPPU, Pune.
 - Ex-Member, Board of Studies in Instrumentation Engg., GCOE, Jalgaon.
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- **Institute Level:**

- Head of Department of Instru & Control Engg
(DYPCOE: 2018- till date), (2014-2018: KBTCOE)
- Member, Grievance Redressal Committee
- Institute Appraisal Coordinator

- **Research Projects (Completed):**

- Received Grant of Rs. 1, 50,000/- from BCUD, University of Pune for “Design of Sliding Mode Controller for Nonlinear Processes” during 2011-2012.
- Worked with AICTE project at P.R.E.C. Loni entitled “Computer Based Plant Automation”, grant of Rs. 8.80 lakh.

- **Consultancy**

- Received consultancy grant of Rs. 51,000/- from **ASR Automation Pune** for joint project work “**Retrofitting of Tube Making Machines**” during Oct 2018-Dec 2019.

- **Laboratory Development/ Centre of Excellence**

- Coordinator of Establishment of “Centre of Excellence in Distributed Control System” in Collaboration with Emerson Pune for Hands on training on DeltaV DCS System during 2020 at D. Y. Patil College of Engineering Akurdi Pune. Cost of Centre: 25 Lakhs.
- Coordinator of Development of “Centre of Excellence in Industrial Automation” in Collaboration with Fox Control, Nashik for Hands on training on PLC, SCADA, HMI, Drives during 2016 at NDMVP’s KBTCOE Nashik. Cost of Centre: 30 Lakhs.

- **Professional Recognition:**

- Regular Reviewer for Referred International Journals:
 - ISA Transactions (Elsevier publication)
 - Measurement (Elsevier publication)
 - Transaction of the Institute of Measurement and Control(Sage publication)
 - Journal of Process Control (Elsevier Publication)
 - International Journal of System Science (Taylor and Francis publication)
- Worked as Vice-Chairman, IET Nashik Local Network.
- Chaired Sessions in IEEE International Conferences.

- **Selected Publications:**

- **Book Chapter:**

- [1] M. G. Ghogare, S L Patil, C Y Patil and **B B Musmade**, “Sliding Mode Control Design for Higher-Order Uncertain System”, book on “*Advances in Automation, Signal Processing, Instrumentation, and Control*”, Springer Professional, 2021.

- **Peer reviewed International Journals:**

- [2] **B. B. Musmade** and B. M. Patre, “Robust Sliding Mode Control of Uncertain Nonlinear Systems with Chattering Alleviating Scheme”, *International Journal of Modern Physics B.*, Vol. 35, No. 14n16, 2021, (Impact factor 1.21).
 - [3] **B. B. Musmade** et al., “Photo-Enhanced Field Emission behavior of class Micro flowers”, *International Journal of Modern Physics B*, Vol. 35, No. 14n16, 2021, (Impact factor 1.21).
 - [4] **B. B. Musmade**, R. K. Munje and B. M. Patre, “Design of Sliding Mode Controller to Chemical Processes for Improved Performance”, Published in *International Journal of Control & Automation*, Vol. 4, No. 1, pp. 15-31, 2011, (Impact factor 0.693).
 - [5] **B. B. Musmade** and B. M. Patre, “Feed forward-plus-Sliding Mode Controller Design with Experimental application of Coupled Tank System”, Published in *International Journal of Transactions of Institute of Measurement and Control*, Vol. 35, No. 8, pp. 1058-1067, 2013, (Impact factor 1.97).
 - [6] **B. B. Musmade** and B. M. Patre, “Design Sliding Mode Controller for Time-Delay Processes”, *International Journal of Transactions of Institute of Measurement and Control*, Vol. 37, No. 6, pp. 699-700, 2015, (Impact factor 1.97).
 - [7] **B. B. Musmade**, A. A. Khandekar and B. M. Patre, “Sliding mode control design for robust tracking of open loop stable processes with experimental application”, *International Journal of Dynamics and Control*, pp. 1-10, 2017, (Impact factor 1.52).
 - [8] **B. B. Musmade** and B. M. Patre, “Design of Decentralized Sliding Mode Controllers with Dynamic Decouplers for TITO Processes”, The 12th IEEE International Workshop on Variable Structure Systems, VSS 2012, Indian Institute of Technology, Mumbai, India, January 12-14, 2012. 105-110.
 - [9] V. V. Yerande and **B. B. Musmade**, “A Model Based Approach of Interaction Measures for Multivariable Processes”, Published in *International Journal of Advanced and Innovative Research*, Vol. 7, No. 10, 2018.
 - [10] **B. B. Musmade**, et al., “Sliding mode control design for continuous yeast fermentation process”, Published in *International Journal of Advanced Research*, Vol. 7, No. 9, pp. 662-671, 2019.
 - [11] **B. B. Musmade**, et al., “Text independent speaker recognition system using wavelet filters”, Published in *International Journal of Advanced Research*, Vol. 7, No. 9, pp. 657-661, 2019.

- **Peer reviewed International Conferences:**

- [1] **B. B. Musmade**, R. K. Munje, B. M. Patre, “Design of Composite Sliding Mode Controller for Large-scale Processes”, SICE International Symposium on Control Systems (SICE ISCS), 48-54, 2020 (Appeared in IEEE Xplore).

- [2] **B. B. Musmade** et al., “Robust regulation of time-delay processes using sliding mode control”, SICE International Symposium on Control Systems (SICE ISCS), 55-60, 2020(Appeared in IEEE Xplore).
- [3] Y. P. Patil, H. G. Patel and **B. B. Musmade**, “Robust control design using discrete sliding mode control for uncertain systems”, 11th IEEE International Conference on Intelligent Systems and Control, Coimbatore, 2017, (Appeared in IEEE Xplore).
- [4] **B. B. Musmade**, et al., “Robust control design using sliding mode observer for uncertain systems”, IEEE Annual India Conference (INDICON), IISc Bangalore, 2016 (Appeared in IEEE Xplore).
- [5] **B. B. Musmade**, Y. P. Patil, R. K. Munje, and B. M. Patre, “Design of Sliding Mode Control scheme for nonlinear processes for improved performance”, IEEE International Conference on Instrumentation and Control 2015, Pune, India, May 28-30, 2015., (Appeared in IEEE Xplore).
- [6] **B. B. Musmade**, Y. P. Patil, R. K. Munje, and B. M. Patre, “Discrete time sliding mode control for three time scale systems”, IEEE International Conference on Instrumentation and Control 2015, Pune, India, May 28-30, 2015., (Appeared in IEEE Xplore).
- [7] **B. B. Musmade**, R. K. Munje, and B. M. Patre, “Design of sliding mode observer for uncertain systems with bounded uncertainty”, Conference on Instrumentation, Signal Processing and Control 2013, SGGSJET, Nanded, India, July 8-9, 2013.
- [8] **B. B. Musmade**, R. K. Munje, and B. M. Patre, “DC Motor speed control by second order sliding mode control”, Conference on Instrumentation, Signal Processing and Control 2013, SGGSJET, Nanded, India, July 8-9, 2013.
- [9] **B. B. Musmade** and B. M. Patre, “Robust stability of nonlinear dynamic systems using sliding mode controller”, IEEE 5th International conference on Advances in Recent Technologies in Communication and Computing, Bangalore, India, September 20-22, 2013, pp. 164-172.
- [10] **B. B. Musmade**, R. K. Munje, J. G. Parkhe and B. M. Patre, “Sliding Mode Control for Three Time-Scale Systems with Matched Disturbance”, IEEE INDICON 2012, Kerala, India, December 07-09, 2012., (Appeared in IEEE Xplore).
- [11] **B. B. Musmade** and B. M. Patre, “Sliding Mode Control of Isothermal Chemical Reactor” at International Conference on Instrumentation (ICI-2009) & National Symposium on Instrumentation (NSI-34) at Pune during Jan. 21-23 2010.
- [12] **B. B. Musmade** and N. S. Nehe, “Speaker Identification System: Performance Evaluation In Noisy Environment” at International Conference on Instrumentation (INCON) at Pune during Nov. 4-5, 2004.