

## Publications

1. **Bhawana Singh**, Anil Kumar Pal, Shyam Kamal, Thach Ngoc Dinh and Frédéric Mazenc, “Vector Control Lyapunov Function based Stabilization of Nonlinear Systems in Arbitrary Time”, *IEEE Transactions on Automatic Control*, 68(8), October 2022, pp. 4984-4989. DOI: 10.1109/TAC.2022.3213769. (Impact Factor: 6.8)
2. **Bhawana Singh**, Shyam Kamal, Sourav Patra and Sandip Ghosh, “Finite, Fixed, and Prescribed-time Stability and Stabilization of Nonlinear Negative Imaginary Systems *Automatica*, 153, pp. 111003, 2023. DOI: <https://doi.org/10.1016/j.automatica.2023.111003>. (Impact Factor: 6.4)
3. **Bhawana Singh**, Shyam Kamal, Xinghuo Yu, Debdas Ghosh and Sandip Ghosh, “Controller and Observer design for Chaotic Systems: A Vector based Contraction Approach”, *IEEE Transactions on Circuits and Systems II: Express Briefs*, 67(12), pp. 3282-3286, 2020. DOI: 10.1109/TCSII.2020.2982327. (Impact Factor: 4.4)
4. **Bhawana Singh**, Xiaogang Xiong, Shyam Kamal, Debdas Ghosh and Sandip Ghosh “Consensus Problems in Multi-agent Systems: A Vector based Contraction Approach”, *IET Control Theory & Applications*, 15(17), pp. 2195-2209, 2021. DOI: <https://doi.org/10.1049/cth2.12185>. (Impact Factor: 2.67)
5. **Bhawana Singh**, Xiaogang Xiong, Thach Ngoc Dinh, Shyam Kamal and Sandip Ghosh, “Interval Observer Design for Nonlinear Systems using Simplified Contraction theory”, *IET Control Theory & Applications*, 16(10), pp. 935-944, 2022. DOI: <https://doi.org/10.1049/cth2.12237>. (Impact Factor: 2.67)
6. Vinay Pandey, Eram Taslima, **Bhawana Singh**, Shyam Kamal and Thach Ngoc Dinh, “Predefined-Time Synchronization of Multi-agent

Systems: A Passivity based Analysis”, *Sensors*, 23(8), pp. 3282-3286, pp. 3865, 2023.

DOI: <https://doi.org/10.3390/s23083865>. (Impact Factor: 3.84)

7. **Bhawana Singh**, Karim Ahmadi Dastgerdi, Nikolaos Athanasopoulos, Wasif Naeem and Benoit Lecallard, “Provably Safe Finite-Time Guidance for Marine Vehicles”, 2024,  
<https://arxiv.org/html/2402.06291v1>.
8. **Bhawana Singh**, Xiaogang Xiong, Debdas Ghosh and Shyam Kamal, Numerical Integrator based on Implicit Euler Discretization of Twisting Control Algorithm, **17th International Workshop on Variable Structure Systems (VSS)**, 21-24 October 2024, Abu Dhabi, UAE.
9. Karim Ahmadi Dastgerdi, **Bhawana Singh**, Wasif Naeem and Nikolaos Athanasopoulos, “Uncertainty Aware Path Planning and Collision Avoidance for Marine Vehicles”, **15th IFAC Conference on Control Applications in Marine Systems**, September 2024 (Accepted).
10. Karim Ahmadi Dastgerdi, **Bhawana Singh**, Wasif Naeem and Nikolaos Athanasopoulos, “Adaptive Velocity Obstacle Avoidance for Multi-Vessel Encounters”, **14th United Kingdom Automatic Control Council (UKACC), International Conference on Control**, 10-12 April 2024.
11. Karim Ahmadi Dastgerdi, **Bhawana Singh**, Nikolaos Athanasopoulos, Wasif Naeem and Benoit Lecallard, “Geometric Path Planning for High Speed Marine Craft”, **22nd World Congress of the International Federation of Automatic Control 2023**, July 2023.
12. **Bhawana Singh**, Shyam Kamal, Nikolaos Athanasopoulos and Wasif Naeem, “A Passivity based Approach to Predefined-Time Stabilization”, **22nd World Congress of the International Federation of Automatic Control 2023**, July 2023.
13. Eram Taslima, Bhawana Singh, Vinay Pandey, Shyam Kamal, Thach Ngoc Dinh, R.K. Saket “A Passivity based approach to Synchronize Multi-agent Systems in Predefined Time”, **IECON 2022-48th Annual Conference of the IEEE Industrial Electronics Society**, October 2022.

14. Shyam Kamal, Anil Kumar Pal, **Bhawana Singh**, Bijnan Bandyopadhyay, Xinghuo Yu, “Stabilization of Continuous Time Uncertain Systems with Predefined Upper bound of Settling Time”, ***16th International Workshop on Variable Structure Systems (VSS)***, September 2022.
15. Yogita Choudhary, **Bhawana Singh**, Shyam Kamal and Sandip Ghosh, “Arbitrary Time Attitude Stabilization and Tracking of Rigid Body on  $SO(3)$ ”, ***In 2021 29th Mediterranean Conference on Control and Automation (MED)***, pp. 292-297, June 2021.
16. Vijay Kumar Singh, Parijat Prasun, **Bhawana Singh**, Shyam Kamal and Sandip Ghosh, “Neural Network Control based Stabilization of Nonlinear Systems in Arbitrary Time”, ***In IECON 2021-47th Annual Conference of the IEEE Industrial Electronics Society***, pp. 1-6, October 2021.
17. **Bhawana Singh**, Shyam Kamal, Debdas Ghosh, Sandip Ghosh, Antonella Ferrara, Anil Kumar Pal, and Jitendra Kumar Goyal, “Controller and Observer Design using Vector Framework with Simplified Contraction Analysis”, ***In 2020 IEEE International Conference on Industrial Technology (ICIT)***, pp. 29-34, February 2020.
18. Anil Kumar Pal, **Bhawana Singh**, Shyam Kamal, Shyam Krishna Nagar and Jitendra Kumar Goyal, “Arbitrary time stabilization of a coupled tank system: A contraction based approach”, ***In 2020 IEEE International Conference on Industrial Technology (ICIT)***, pp. 23-28, February 2020.
19. Jitendra Kumar Goyal, Shubham Aggarwal, Sandip Ghosh, Shyam Kamal, Pawel Dworak, **Bhawana Singh** and Anil Kumar Pal, “Experimental design of robust decentralized PI controller for TRMS through polytopic modeling”, ***In 2020 IEEE International Conference on Industrial Technology (ICIT)***, pp. 47-52, February 2020.