

Krzysztof Kozłowski
Poznan University of Technology
Institute of Automation and Robotics
ul. Piotrowo 3A, 60-965 Poznan, Poland

Short Biographical Note

Professor K. Kozłowski received the M.Sc. degree in electrical engineering from Poznan University of Technology (PUT), Poland, and the Ph.D. degree in control engineering from PUT in 1979, where he currently holds full professor position in robotics and automation. In 1993, he was a Fulbright scholar with Jet Propulsion Laboratory, Pasadena, USA. He founded and serves as a chairman of a new Institute of Automation and Control established on May 1, 2017 at Poznan University of Technology.

He teaches and conducts research in the area of modelling and control of industrial and mobile robots. His research interests include multi-agent systems, identification and various robotics applications. His research publications include more than 140 conference papers and more than 50 papers published in national and international journals. He is an author of the book titled *Modelling and Identification in Robotics* (Springer-Verlag, 1998).

He was an Associate Editor for the IEEE Transactions on Control Systems Technology (1999-2008), for the IEEE Robotics and Automation Magazine (1998-2002) and for the Journal of Intelligent and Robotic Systems (2005-2010). Currently he is an associate editor the International Journal of Applied Mathematics and Computer Science, since 1999, IEEE Conference Editorial Board, Conference on Decision and Control (CDC) and American Control Conference (ACC) since 1999 till now. He was the member of the Administrative Committee, IEEE Robotics and Automation Society 2000-2002, 2004-2005, the member of the Board of Directors, IEEE Control Systems Society, 2003-2004. He serves as the chair of the IEEE Robotics and Automation Chapter, Polish Section, 2000-2008 and 2014-2017.

He conducted 39 different research scientific projects as supervisor (26) and as principal investigator (13) granted by national research institutions and 2 international research agencies.

Selected recent journal publications:

1. M. Michalek, K. Kozłowski: Vector-Field-Orientation Feedback Control method for a Differentially Driven Vehicle, IEEE Transactions on Control Systems Technology, 18(1), pp. 45-65, 2010.
2. P. Dutkiewicz, M. Kielczewski, K. Kozłowski, D. Pazderski: Vision Localization System for Mobile Robot with Velocities and Acceleration Estimator, Bulletin of the Polish Academy of Sciences, Technical Sciences, Vol. 58, Issue 1, pp. 29-41, March 2010.
3. M. Michalek, K. Kozłowski: The VFO State-constrained Stabilisation of the Nonholonomic Manipulator with Limited Control Input, International Journal of Control, 84(10), pp. 1678-1694, 2011.
4. P. Szulczynski, D. Pazderski, K. Kozłowski: Real-Time Obstacle Avoidance Using Potential Harmonic Functions, Journal of Automation, Mobile Robotics & Intelligent Systems, Vol. 5, No. 3, pp. 58-66, 2011.
5. D. Pazderski, P. Szulczynski, K. Kozłowski: Closed-loop Control Algorithm for Some Class of Nonholonomic Systems Using Polar Representation; Bulletin of the Polish Academy of Sciences - Technical Sciences, 2012, Vol. 60, No. 3, pp. 521-535.

6. D. Pazderski, K. Kozłowski, D. K. Waskowicz: Control of a Unicycle-like Robot with Trailers Using Transverse Function Approach; *Bulletin of the Polish Academy of Sciences - Technical Sciences*, 2012, 2012, Vol. 60, No. 3, pp. 557-579.
7. K. Kozłowski, M. Michalski, M. Kowalski, P. Parulski: Universal Multi-axis Control System for Electric Drives; *IEEE Transactions on Industrial Electronics*, 2012, Vol. 60, pp. 691 – 698.
8. M. Michalek, K. Kozłowski: Feedback Control Framework for Car-like Robots Using the Unicycle Controllers, *Robotica*, 30(4), pp. 517-535, 2012.
9. W. Kowalczyk, M. Michałek, K. Kozłowski: Trajectory Tracking Control with Obstacle Avoidance Capability for Unicycle-like Mobile Robot; *Bulletin of the Polish Academy of Sciences - Technical Sciences*, 2012, Vol. 60, No. 3, pp. 537-546.
10. D. Pazderski, D. K. Waskowicz, K. Kozłowski: Motion Control of Vehicles with Trailers Using Transverse Function Approach. Controller Properties Analysis, *Journal of Intelligent Robotic Systems*, 2013. DOI:10.1007/s10846-013-9882-y.
11. D. Pazderski, K. Kozłowski, Control of Planar Robot in the Flight Phase Using Transverse Function Approach, *Bulletin of the Polish Academy of Sciences. Technical Sciences. Vol. 63, Issue 3, 2015*, pp. 759–770.
12. K. Kozłowski, D. Pazderski, The 10th Edition of the International Workshop of Robot Motion and Control (RoMoCo), *IEEE Control Systems Magazine*, February 2016, pp. 87 –89.
13. W. Kowalczyk, K. Kozłowski, Control of the Differentially - driven Mobile Robot in the Environment with a Non-Convex Star-Shape Obstacle: Simulation and Experiments, *Acta Polytechnica Hungarica*, Vol. 13, No. 1, 2016, pp. 123-135.
14. W. Kowalczyk, M. Przybyła, K. Kozłowski, Set-point Control of Mobile Robot with Obstacle Detection and Avoidance Using Navigation Function - Experimental Verification, *Journal of Intelligent and Robotic Systems*, 2016, DOI: 10.1007/s10846-016-0388-2.
15. K. Kozłowski, P. Sauer, The Adaptive Control Algorithm for Manipulators with Joint Flexibility, invited book chapter: *Adaptive Control for Robotic Manipulators*, editors Dan Zhang, Bin Wei, CRC Press, 2016, pp. 264-297.
16. K. Kozłowski, W. Kowalczyk, Formation Control and Vision Based Localization of a System of Mobile Robots, *Lecture Notes in Electrical Engineering*, Springer Verlag, 2016, pp. 3- 27.
17. W. Kowalczyk, M. Przybyła, K. Kozłowski, Set-point Control of Mobile Robot with Obstacle Detection and Avoidance Using Navigation Function - Experimental Verification, *Journal of Intelligent and Robotic Systems*, 2017, vol. 85, no 3, pp. 539-552.
18. B. Krysiak, K. Kozłowski, Smooth State Feedback Control of a New Nonholonomic Manipulator Coping with Singularities, *IEEE Transactions on Control Systems Technology*, DOI: 10.1109/TCST.2018.2875427, October 2018.