Textbook:

[B1] P.A. Ioannou and B. Fidan, *Adaptive Control Tutorial*, SIAM - Society for Industrial & Applied Mathematics, TJ217.I628, ISBN 0-89871-615-2, 2006.

Edited Book:

[B2] G. Mao and B. Fidan (editors), *Localization Algorithms and Strategies for Wireless Sensor Networks*, IGI Global – Information Science Publishing, TK7872.D48L63, ISBN 1-60566-396-4, 2009.

Software:

[S1] B. Fidan and P.A. Ioannou, *Adaptive Control Toolbox for use with MATLAB & Simulink*, 2001–2016.

[S1a] B. Fidan and P.A. Ioannou, *Adaptive Control Toolbox: User's Guide*, manual of [S1], 2001–2016.

Journal Articles:

[J1] I.G. Rosen, T. Parent, B. Fidan, C. Wang, and A. Madhukar, "Design, development, and testing of real-time feedback controllers for semiconductor etching processes using in situ spectroscopic ellipsometry sensing," *IEEE Trans. on Control Systems Technology*, vol. 10, pp. 64–75, January 2002.

[J2] Y. Zhang, B. Fidan, and P.A. Ioannou, "Backstepping control of linear time varying systems with known and unknown parameters," *IEEE Trans. on Automatic Control*, vol. 48, no. 11, pp. 1908–1925, November 2003.

[J3] B. Fidan, Y. Zhang, and P.A. Ioannou, "Adaptive control of a class of slowly time-varying systems with modeling uncertainties," *IEEE Trans. on Automatic Control*, vol. 50, no. 6, pp. 915–920, June 2005.

[J4] C. Yu, J. M. Hendrickx, B. Fidan, B. D. O. Anderson, and V. D. Blondel "Three and higher dimensional autonomous formations: Rigidity, persistence and structural persistence," *Automatica*, vol. 43, no. 3, pp. 387–402, March 2007.

[J5] B. Fidan, C. Yu, and B.D.O. Anderson, "Acquiring and Maintaining Persistence of Autonomous Multi-Vehicle Formations," *IET Control Theory and Applications*, vol. 1, no. 2, pp. 452–460, March 2007.

[J6] G. Mao, B.D.O. Anderson, and B. Fidan, "Path loss exponent estimation for wireless sensor network localization," *Computer Networks*, vol. 51, no. 10, pp. 2467–2483, July 2007.

[J7] G. Mao, B. Fidan, and B.D.O. Anderson, "Wireless sensor network localization techniques," *Computer Networks*, vol. 51, no. 10, pp. 2529–2553, July 2007.

[J8] V. Gazi, B. Fidan, Y.S. Hanay, and M.I. Köksal, "Aggregation, foraging, and formation control of swarms with non-holonomic agents using potential functions and sliding mode techniques," *Elektrik - Tr. J. of Electrical Eng. and Computer Sciences*, vol. 15, no. 2, pp. 149–168, July 2007.

[J9] P.A. Ioannou, H. Xu, and B. Fidan, "Identification and high bandwidth control of hard disk drive servo systems based on sampled data measurements," *IEEE Trans. on Control Systems Technology*, vol. 15, no. 6, pp. 1089-1095, November 2007.

[J10] J.M. Hendrickx, C. Yu, B. Fidan, and B.D.O. Anderson, "Rigidity and persistence for ensuring shape maintenance of multiagent meta formations," *Asian Journal of Control*, vol. 10, no. 2, pp. 131–143, March 2008.

[J11] J.M. Hendrickx, B. Fidan, C. Yu, B.D.O. Anderson, and V. D. Blondel, "Formation reorganization by primitive operations on directed graphs," *IEEE Trans. on Automatic Control*, vol. 53, no. 4, pp. 968–979, May 2008.

[J12] A.N. Bishop, B. Fidan, B.D.O. Anderson, K. Doğançay, and P.N. Pathirana, "Optimal range-difference based localization considering geometrical constraints," *IEEE Journal of Oceanic Engineering*, vol. 33, no. 3, pp. 289–301, July 2008.

[J13] A.N. Bishop, B. Fidan, K. Doğançay, B.D.O. Anderson, and P.N. Pathirana, "Exploiting geometry for improved hybrid AOA/TDOA based localization," *Signal Processing*, vol. 88, no. 7, pp. 1775–1791, July 2008.

[J14] B. Fidan, S. Dasgupta and B.D.O. Anderson, "Guaranteeing practical convergence in algorithms for sensor and source localization," *IEEE Trans. on Signal Processing*, vol. 56, no. 9, pp. 4458–4469, September 2008.

[J15] B.D.O. Anderson, C. Yu, B. Fidan, and J.M. Hendrickx, "Rigid graph control architectures for autonomous formations," *IEEE Control Systems Magazine*, vol. 28, no. 6, pp. 48–63, December 2008.

[J16] A.N. Bishop, B.D.O. Anderson, B. Fidan, P.N. Pathirana, and G. Mao, "Bearing-only localization using geometrically constrained optimization," *IEEE Trans. on Aerospace and Electronic Systems*, vol. 45, no. 1, pp. 308–320, January 2009.

[J17] S.H. Dandach, B. Fidan, S. Dasgupta, and B.D.O. Anderson, "A continuous time linear adaptive source localization algorithm robust to persistent drift," *Systems & Control Letters*, vol. 58, no. 1, pp. 7–16, January 2009.

[J18] C. Yu, B.D.O. Anderson, S. Dasgupta and B. Fidan, "Control of minimally persistent formations in the plane," *SIAM Journal on Control and Optimization*, vol. 48, no. 1, pp. 206–233, February 2009.

[J19] I. Shames, B. Fidan, and B.D.O. Anderson, "Minimization of the effect of noisy measurements on localization of multi-agent autonomous formations," *Automatica*, vol. 45, no. 4, pp. 1058–1065, April 2009.

[J20] A.N. Bishop, B. Fidan, B.D.O. Anderson, K. Doğançay, and P.N. Pathirana, "Optimality analysis of sensor-target localization geometries," *Automatica*, vol. 46, no. 3, pp. 479–492, March 2010.

[J21] A.A. Kannan, B. Fidan, and G. Mao, "Analysis of flip ambiguities for robust sensor network localization," *IEEE Trans. on Vehicular Technology*, vol. 59, no. 4, pp. 2057–2070, May 2010.

[J22] B.D.O. Anderson, I. Shames, G. Mao, and , B. Fidan, "Formal theory of noisy sensor network localization," *SIAM Journal on Discrete Mathematics*, vol. 24, no. 2, pp. 684–698, June 2010.

[J23] B. Fidan, J.M. Hendrickx, and B.D.O. Anderson, "Closing ranks in rigid multi-agent formations using edge contraction," *International Journal of Robust and Nonlinear Control*, vol. 20, no. 18, pp. 2077–2092, December 2010.

[J24] I. Shames, B. Fidan, B.D.O. Anderson, and H. Hmam, "Cooperative self-localization of mobile agents," *IEEE Trans. on Aerospace and Electronic Systems*, vol. 47, no. 3, pp. 1926–1947, July 2011.

[J25] A.A. Kannan, B. Fidan, and G. Mao, "Use of flip ambiguity probabilities in robust sensor network localization," *Wireless Networks*, vol. 17, no. 5, pp. 1157–1171, July 2011.

[J26] I. Shames, B. Fidan, and B.D.O. Anderson, "Close target reconnaissance with guaranteed collision avoidance," *International Journal of Robust and Nonlinear Control*, vol. 21, no. 16, pp. 1823–1840, November 2011.

[J27] I. Shames, S. Dasgupta, B. Fidan, and B.D.O. Anderson, "Circumnavigation using distance measurements under slow drift," *IEEE Trans. on Automatic Control*, vol. 57, no. 4, pp. 889–903, April 2012.

[J28] O. Rehman, B. Fidan, and I.R. Petersen, "Uncertainty modeling and robust minimax LQR control of multivariable nonlinear systems with application to hypersonic flight," *Asian Journal of Control*, vol. 14, no. 5, pp. 1180–1193, September 2012.

[J29] V. Gazi, B. Fidan, R. Ordóñez, and M.I. Köksal, "A target tracking approach for nonholonomic agents based on artificial potentials and sliding mode control," *ASME Journal of Dynamic Systems, Measurement and Control*, vol. 134, no. 6, article 061004 (13 double-column pages), November 2012.

[J30] G. Piovan, I. Shames, B. Fidan, F. Bullo, and B.D.O. Anderson, "On frame and orientation localization for relative sensing networks," *Automatica*, vol. 49, no. 1, pp. 206–213, January 2013.

[J31] O. Rehman, I.R. Petersen, and B. Fidan, "Feedback linearization based robust nonlinear control design for hypersonic flight vehicles," *IMechE Journal of Systems and Control Engineering*, vol. 227, no.1, pp. 3–11, January 2013.

[J32] B. Fidan, S. Dasgupta, and B.D.O. Anderson, "Adaptive range-measurement-based target pursuit," *International Journal of Adaptive Control and Signal Processing*, vol. 27, no.1, pp. 66–81, January 2013.

[J33] M.S. Fallah, A. Khajepour, B. Fidan, S. Chen, and B. Litkouhi, "Vehicle optimal torque vectoring using state-derivative feedback and linear matrix inequality," *IEEE Trans. on Vehicular Technology*, vol. 62, no.4, pp. 1540–1542, May 2013.

[J34] İ. Bayezit and B. Fidan, "Distributed cohesive motion control of flight vehicle formations," *IEEE Trans. on Industrial Electronics*, vol. 60, no.12, pp. 5763–5772, December 2013.

[J35] B. Fidan, V. Gazi, S. Zhai, N. Cen, and E. Karataş, "Single view distance estimation based formation control of robotic swarms," *IEEE Trans. on Industrial Electronics*, vol. 60, no.12, pp. 5781–5791, December 2013.

[J36] O. Rehman, B. Fidan, and I.R. Petersen, "Robust control system design for an uncertain nonlinear system using minimax LQG design method," *Asian Journal of Control*, vol. 16, no. 4, pp. 1029–1041, July 2014.

[J37] B. Fidan and F. Kiraz, "On convexification of range measurement based sensor and source localization problems," *(Elsevier) Ad Hoc Networks*, vol. 20, no.9, pp. 113–118, September 2014.

[J38] I. Fadakar, B. Fidan, and J.P. Huissoon, "Robust adaptive attitude synchronization of rigid body networks on SO(3)," *IET Control Theory and Applications*, vol. 9, no. 1, pp. 52–61, January 2015.

[J39] B. Fidan, A. Çamlıca, and S. Güler, "Least-squares based adaptive target localization by mobile distance measurement sensors," *International Journal of Adaptive Control and Signal Processing*, vol. 29, no. 2, pp. 259–271, February 2015.

[J40] X. Jiao, B. Fidan, J. Jiang and M. Kamel, "Adaptive mode switching of hypersonic morphing aircraft based on type-2 TSK fuzzy sliding mode control," *(Springer) Science China Information Sciences* vol. 58, Paper 070205 (15 single column pages), July 2015.

[J41] S. Khosravani, A. Kasaiezadeh, A. Khajepour, B. Fidan, S. Chen, and B. Litkouhi, "Torque vectoring based vehicle control robust to driver uncertainties," *IEEE Trans. on Vehicular Technology*, vol. 64, no. 8, pp. 3359–3367, August 2015.

[J42] B. Fidan, and I. Umay, "Adaptive environmental source localization and tracking with unknown permittivity and path loss coefficients," invited paper in Special Issue on *UAV Sensors for Environmental Monitoring*, *Sensors*, vol. 15, no. 12, pp. 31125–31141, December 2015.

[J43] M. Jalalmaab, M. Pirani, B. Fidan, and S. Jeon, "Cooperative least square parameter identification by consensus within the network of autonomous vehicles," *SAE International Journal of Passenger Cars – Electronic and Electrical Systems*, vol. 9, no. 2, pp. 255–261, August 2016.

[J44] I. Umay, B. Fidan, and B. Barshan, "Localization and tracking of implantable biomedical sensors," invited paper, *Sensors*, vol. 17, no.3, Article No. 583 (20 single column pages), March 2017.

[J45] H. Jamshidifar, A. Khajepour, B. Fidan, and M. Rushton, "Kinematically-constrained redundant cable-driven parallel robots: Modeling, redundancy analysis and stiffness optimization," *IEEE/ASME Trans. on Mechatronics*, vol. 22, no. 2, pp. 921–930, April 2017.

[J46] H. Askari, H. Jamshidifar, and B. Fidan, "High resolution mass identification using nonlinear vibrations of nanoplate measurement," *Measurement (Elsevier)*, vol. 101, pp. 166–174, April 2017.

[J47] I. Umay and B. Fidan, "Adaptive wireless biomedical capsule tracking based on magnetic sensing," *(Springer) International Journal of Wireless Information Networks*, vol. 24, no. 2, pp. 189–199, June 2017.

[J48] S. Guler, B. Fidan, S. Dasgupta, B.D.O. Anderson, and I. Shames, "Adaptive source localization based station keeping of autonomous vehicles," *IEEE Trans. on Automatic Control*, vol. 62, no. 7, pp. 3122–3135, July 2017.

[J49] K. Buyukkabasakal, B. Fidan, and A. Savran, "Mixing adaptive fault tolerant control of quadrotor UAV," *Asian Journal of Control*, vol. 19, no. 4, pp. 1441–1454, July 2017.

[J50] I. Fadakar, B. Fidan, and J.P. Huissoon, "Coordinate independent adaptive attitude tracking control design for spacecraft robust to time varying system uncertainties," *International Journal of Control*, vol. 90, no. 10, pp. 2206–2226, October 2017.

[J51] H. An, C. Wang, and B. Fidan, "Sliding mode disturbance observer-enhanced adaptive control for the air-breathing hypersonic flight vehicle," *(Elsevier) ACTA Astronautica*, vol. 139, pp. 111–121, October 2017.

[J52] M. Pirani, E. Hashemi, J.W. Simpson-Porco, B. Fidan, and A. Khajepour, "Graph theoretic approach to the robustness of k-nearest neighbor vehicle platoons", *IEEE Trans. on Intelligent Transportation Systems*, vol. 18, no. 11, pp. 3218–3224, November 2017.

[J53] M. Pirani, E. Hashemi, A. Khajepour, B. Fidan, A. Kasaiezadeh, S.-K. Chen, B. Litkouhi, "Resilient corner-based vehicle velocity estimation", *IEEE Trans. on Control Systems Technology*, vol. 26, no. 2, pp. 452–462, March 2018.

[J54] R. Hult, F.E. Sancar, M. Jalalmaab, A. Vijayan, A. Severinson, M. Di Vaio, P. Falcone, B. Fidan, and S. Santini, "Design and experimental validation of a cooperative driving control architecture for the Grand Cooperative Driving Challenge 2016," *IEEE Trans. on Intelligent Transportation Systems*, vol. 19, no. 4, pp. 1290–1301, April 2018.

[J55] H. Jamshidifar, S. Khosravani, B. Fidan, and A. Khajepour, "Vibration decoupled modeling and control of redundant cable-driven parallel robots," *IEEE/ASME Trans. on Mechatronics*, , vol. 23, no. 2, pp. 690–701, April 2018.

[J56] H. Jamshidifar, H. Askari, and B. Fidan, "Parameter identification and adaptive control of the carbon nanotube resonators," *Asian Journal of Control*, vol. 20, no. 4, pp. 1329–1338, July 2018.

[J57] E. Hashemi, M. Pirani, A. Khajepour, B. Fidan, A. Kasaizadeh, and S.-K. Chen, "Opinion dynamics based vehicle velocity estimation and diagnosis", *IEEE Trans. on Intelligent Transportation Systems*, vol. 19, no. 7, pp. 2142–2148, July 2018.

[J58] A. Yurtman, B. Barshan, and B. Fidan, "Activity recognition invariant to wearable sensor unit orientation using differential rotational transformations represented by quaternions," invited feature paper, *Sensors*, vol. 17, no.3, Article No. 2725 (27 single column pages), August 2018.

[J59] S. Guler and B. Fidan, "Target capture and station keeping of fixed speed vehicles without self-location information," *European Journal of Control* vol. 43, pp. 1–11, September 2018.

[J60] M. Pirani, E.M. Shahrivar, B. Fidan, and S. Sundaram, "Robustness of leader-follower networked dynamical systems", *IEEE Trans. on Control of Network Systems*, vol. 4, no. 4, pp. 1752–1763, December 2018.

[J61] N. Koksal, M. Jalalmaab, and B. Fidan, "Adaptive linear quadratic attitude tracking control of a quadrotor UAV based on IMU sensor data fusion," invited paper in Special Issue on *Mechatronic Systems for Automatic Vehicles*, *Sensors* (23 single column pages), vol. 19, no. 1, Article No. 46, January 2019.

[J62] H. An, B. Fidan, Q. Wu, C. Wang, and X. Cao, "Sliding mode differentiator based tracking control of uncertain nonlinear systems with application to hypersonic flight," *Asian Journal of Control*, vol. 21, no. 1, pp. 143–155, January 2019.

[J63] M. Pirani, E. Hashemi, A. Khajepour, B. Fidan, B. Litkouhi, S.-K. Chen, and S. Sundaram, "Cooperative vehicle speed fault diagnosis and correction," *IEEE Trans. on Intelligent Transportation Systems*, vol. 20, no. 2, pp. 2731–2744, February 2019.

[J64] M. Jalalmaab, M. Pirani, B. Fidan, and S. Jeon, "Cooperative estimation of road condition based on dynamic consensus and vehicular communication," *IEEE Trans. on Intelligent Vehicles*, vol. 4, no. 1, pp. 90–100, March 2019.

[J65] H. An, B. Fidan, J. Liu, C. Wang, and L. Wu, "Adaptive fault-tolerant control of air-breathing hypersonic vehicles robust to input nonlinearities," *International Journal of Control*, vol. 92, no. 5, pp. 1044–1060, May 2019.

[J66] X. Jiao, B. Fidan, J. Jiang and M. Kamel, "Type-2 fuzzy adaptive sliding mode control of hypersonic flight," *(SAGE) Journal of Aerospace Engineering*, vol. 223, no. 8, pp. 2731–2744, June 2019.

[J67] E. Hashemi, M. Pirani, A. Khajepour, B. Fidan, S.-K. Chen, and B. Litkouhi, "Fault tolerant consensus for vehicle state estimation: A cyber-physical approach", *IEEE Trans. on Industrial Informatics*, vol. 15, no. 9, pp. 5129–5138, September 2019.

[J68] J. Hendrickx, B. Gerencser, and B. Fidan, "Trajectory convergence from coordinate-wise decrease of quadratic energy functions, and applications to platoons," *IEEE Control Systems Letters*, vol. 4, no. 1, pp. 151–156, January 2020.

[J69] H. Jamshidifar, A. Khajepour, B. Fidan, and M. Rushton, "Vibration regulation of kinematically-constrained cable driven parallel robots with minimum number of actuators," *ASME/IEEE Trans. on Mechatronics*, vol. 25, no. 1, pp. 21–31, February 2020.

[J70] K.-H. Oh, B. Fidan, and H.-S. Ahn, "Distributed bearing vector estimation in multi-agent networks", *Automatica*, vol. 115, 108895 (7 double column pages), May 2020.

[J71] N. Koksal, H. An, and B. Fidan, "Backstepping-based adaptive control of a quadrotor UAV with guaranteed tracking performance," *ISA Transactions*, vol. 105, pp. 98–110, October 2020.

[J72] A.H. Korayem, A. Khajepour, and B. Fidan, "Trailer mass estimation using system model-based and machine learning approaches," *IEEE Trans. on Vehicular Technology*, vol. 69, no. 11, pp. 12536–12546, November 2020.

[J73] M. Turhan, G. Tseng, K. Erkorkmaz, and B. Fidan, "Dynamic model identification for CNC machine tool feed drives from in-process signals for virtual process planning," *Mechatronics*, vol. 72, 102445 (17 double column pages), December 2020.

[J74] Y. John, K.-K. Oh, B. Fidan, and H.-S. Ahn, "Fixed-time orientation estimation and network localisation of multi-agent systems", *IET Control Theory & Applications*, vol. 15, no. 1, pp. 64–76, January 2021.

[J75] H. Zengin, N. Zengin, B. Fidan, and A. Khajepour, "Blending based multiple-model adaptive control of multivariable systems with application to lateral vehicle motion control", *European Journal of Control*, vol. 58, no. 3, pp. 1–10, March 2021.

[J76] Y. Zheng, Q. Wang, D. Cao, B. Fidan, and C. Sun "Distance-based formation control for multi-lane autonomous vehicle platoons," *IET Control Theory & Applications*, vol. 15, no. 11, pp. 1506–1517, July 2021.

[J77] A.H. Korayem, A. Khajepour, and B. Fidan, "Vehicle-trailer lateral velocity estimation using constrained unscented transformation," *Vehicle System Dynamics*, vol. 60, no. 3, pp. 1048–1075, March 2022.

[J78] A.H. Korayem, E. Hashemi, A. Khajepour, and B. Fidan, "Estimation of vehicle-trailer hitch-forces and lateral tire forces independent of trailer type and geometry," *ASME Journal of Dynamic Systems, Measurement, and Control*, vol. 144, no. 5, Paper No. DS-21-1174 (12 double column pages), May 2022.

[J79] A.H. Korayem, A. Khajepour, and B. Fidan, "A review on vehicle-trailer state and parameter estimation," *IEEE Trans. on Intelligent Transportation Systems*, vol. 23, no. 7, pp. 5993–6010, July 2022.

[J80] A.H. Korayem, A. Pazooki, L. Durali, A. Khajepour, B. Fidan, V. Ponnuswami, S.P. Khaligh, "Hitch angle estimation of a towing vehicle with arbitrary configuration," *IEEE Trans. on Intelligent Transportation Systems*, vol. 23, no. 7, pp. 7535–7546, July 2022.

[J81] M. Ramesh, F. Imeson, B. Fidan, and S.L. Smith, "Optimal partitioning of non-convex environments for minimum turn coverage planning," *IEEE Robotics and Automation Letters*, vol. 7, no. 4, pp. 9731–9738, October 2022.

[J82] A.H. Korayem, A. Khajepour, and B. Fidan, "Road angle estimation for a vehicle-trailer with machine learning and system model-based approaches," *Vehicle System Dynamics*, vol. 7, no. 4, pp. 3583–3604, October 2022.

BOOK CHAPTERS:

[Ch1] G. Mao, B. Fidan, and B. D. O. Anderson, "Sensor network localization," Chapter 13 in *Sensor Network and Configuration*, N.P. Mahalik (ed.), Springer-Verlag, pp. 281–315, 2006.

[Ch2] V. Gazi and B. Fidan, "Coordination and control of multi-agent dynamic systems: Models and approaches," in *Swarm Robotics: SAB 2006*, E. Şahin, W.M. Spears, and A.F.T. Winfield (ed.), Lecture Notes in Computer Science 4433, Springer-Verlag, pp. 71–102, 2007.

[Ch3] B. Fidan, B.D.O. Anderson, C. Yu, and J.M. Hendrickx, "Persistent autonomous formations and cohesive motion control," in *Modeling and Control of Complex Systems*, P. Ioannou and A. Pitsillides (ed.), Taylor & Francis, pp. 247–275, 2007.

[Ch4] B.D.O. Anderson, B. Fidan, C. Yu, and D. van der Walle, "UAV formation control: Theory and application," in *Recent Advances in Learning and Control*, V.D. Blondel, S.P. Boyd, and H. Kimura (ed.), Lecture Notes in Control and Information Sciences 371, Springer-Verlag, pp. 15–34, 2008.

[Ch5] B. Fidan, S. Dasgupta, and B.D.O. Anderson, "Realistic anchor positioning for sensor localization," Chapter 8 in *Recent Advances in Learning and Control*, V.D. Blondel, S.P. Boyd, and H. Kimura (ed.), Lecture Notes in Control and Information Sciences 371, Springer-Verlag, pp. 79–94, 2008.

[Ch6] G. Mao, B.D.O. Anderson, B. Fidan, J. Fang and A.S. Morse, "On the critical connectivity radii in WM^{2}SNets," in *Wireless Mesh Networking*, George Aggelou (ed.), McGraw-Hill, pp. 50–59, 2008.

[Ch7] V. Gazi, B. Fidan, R. Ordonez, and L. Marques, "Robot swarms: dynamics and control," Chapter 4 in *Mobile Robots for Dynamic Environments*, E.F. Kececi and M. Ceccarelli (eds.), ASME, pp. 79–126, 2015.

[Ch8] G. Gungor, B. Fidan, and W.W. Melek, "Reconfigurable robot manipulators: Adaptation, control, and MEMS applications," Chapter 9 in *Advanced Mechatronics and MEMS Devices - II*, D. Zhang and B. Wei (eds.), pp. 169–194, 2017.

[Ch9] I. Shames, B. Fidan, B.D.O. Anderson, and H. Hmam, "Polynomial based methods for cooperative localization in multiagent systems," Chapter 25 in *Handbook of Position Location: Theory, Practice and Advances*, 2nd Ed. (Ch. 24 in 1st Ed.), R. Zekavat and M. Buehrer (ed.), Wiley-IEEE Press, pp. 943–966, 2018.

[Ch10] I. Shames, B. Fidan, B.D.O. Anderson, and H. Hmam, "Self-localization of formations of autonomous agents using bearing measurements," Chapter 28 in *Handbook of Position Location: Theory, Practice and Advances*, 2nd Ed. (Ch. 27 in 1st Ed.), R. Zekavat and M. Buehrer (ed.), Wiley-IEEE Press, pp. 1027–1050, 2018.

[Ch11] A. Woo, B. Fidan, and W.W. Melek, "Localization for autonomous driving," Chapter 29 in *Handbook of Position Location: Theory, Practice and Advances*, 2nd Ed., R. Zekavat and M. Buehrer (ed.), Wiley-IEEE Press, pp. 1051–1088, 2018.

[Ch12] G. Gungor, B. Fidan, and W.W. Melek, "Decentralized model reference adaptive control for modular and reconfigurable robot manipulators," in *Advances in Sensing and Control for Robotic Applications*, F. Janabi-Sharifi and W. Melek (eds.), Springer, pp. 109–125, 2019.

[Ch13] S. Guler, B. Fidan, and V. Gazi, "Adaptive swarm coordination and formation control," Chapter 98 in *Robotic Systems: Concepts, Methodologies, Tools, and Applications* (Chapter 7 in *Handbook of Research on Design, Control, and Modeling of Swarm Robotics*, Y. Tan (ed.)), IGI Global, pp. 2041–2075, 2020.

Conference Papers:

[C1] I.G. Rosen, T. Parent, B. Fidan, and A. Madhukar, "In-situ spectroscopic ellipsometry for the real time process control of plasma etching of silicon nitride," in *Materials Research Society Symposia Proc.*, vol. 591, pp. 263–268, Boston, MA, USA, Nov.-Dec. 1999.

[C2] B. Fidan, T. Parent, I.G. Rosen, and A. Madhukar, "Spectroscopic ellipsometry based real-time control of CF_4O_2 plasma etching of silicon nitride," in *Proc. American Control Conference*, pp. 4006–4010, Chicago, IL, USA, June 2000.

[C3] B. Fidan, I.G. Rosen, T. Parent, and A. Madhukar, "Multi-variable adaptive control of CF_4/O_2 plasma etching of silicon nitride thin films," in *Proc. American Control Conference*, pp. 1280–1285, Arlington, VA, USA, June 2001.

[C4] B. Fidan, Y. Zhang, and P.A. Ioannou, "A new robust adaptive control scheme for linear time varying plants," in *Proc. 41st IEEE Conference on Decision and Control*, vol. 3, pp. 3061–3066, Las Vegas, NV, USA, 2002.

[C5] B. Fidan, E.B. Kosmatopoulos, and P.A. Ioannou, "A switching controller for multivariable LTI systems with known and unknown parameters," in *Proc. 41st IEEE Conference on Decision and Control*, vol. 4, pp. 4688–4693, Las Vegas, NV, USA, 2002.

[C6] P.A. Ioannou, H. Xu, and B. Fidan, "Servo control design for a hard disk drive based on estimated head position at high sampling rates," in *Proc. American Control Conference*, pp. 731–736, Denver, CO, USA, June 2003.

[C7] B. Fidan, E. Sezer, and M. Akar, "Multi-stage neural networks with application to motion planning of a mechanical snake," in *Proc. American Control Conference*, pp. 1278–1283, Denver, CO, USA, June 2003.

[C8] B. Fidan, M. Mirmirani, and P.A. Ioannou, "Flight dynamics and control of air-breathing hypersonic vehicles: Review and new directions," in *Proc. 12th AIAA International Space Planes and Hypersonic Systems and Technologies Conference*, AIAA-2003-7081, Norfolk, VA, USA, December 2003.

[C9] B. Fidan, M. Mirmirani, and P.A. Ioannou, "Air-breathing hypersonic flight control," in *Proc 16th IFAC Symposium on Automatic Control in Aerospace*, vol. 1, pp. 571–576, St.Petersburg, Russia, June 2004.

[C10] J.M. Hendrickx, B. Fidan, C. Yu, B.D.O. Anderson, and V.D. Blondel "Rigidity and persistence of three and higher dimensional formations," in *Proc. 2nd Int. Conf. on Informatics in Control, Automation & Robotics (ICINCO) - 1st Int. Workshop on Multi-Agent Robotic Systems (MARS)*, pp. 39–46, Barcelona, Spain, September 2005.

[C11] C. Yu, J.M. Hendrickx, B. Fidan, and B.D.O. Anderson, "Structural persistence of three dimensional autonomous formations," in *Proc. 2nd Int. Conf. on Informatics in Control, Automation & Robotics (ICINCO) - 1st Int. Workshop on Multi-Agent Robotic Systems (MARS)*, pp. 47–55, Barcelona, Spain, September 2005.

[C12] C. Yu, B. Fidan, and B.D.O. Anderson, "Persistence acquisition and maintenance for autonomous formations," in *Proc. 2nd Int. Conf. on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP)*, pp. 379–384, Melbourne, VIC, Australia, December 2005.

[C13] C. Yu, B. Fidan, and B.D.O. Anderson, "Principles to control autonomous formation merging," in *Proc. American Control Conference*, pp. 762–768, Minneapolis, MN, USA, June 2006.

[C14] S. Sandeep, B. Fidan, and C. Yu, "Decentralized cohesive motion control of multi-agent formations," in *Proc. 14th Mediterranean Conference on Control and Automation*, FM1-3 (6 pages), Ancona, Italy, June 2006.

[C15] J.M. Hendrickx, B. Fidan, C. Yu, B.D.O. Anderson, and V.D. Blondel, "Elementary operations for the reorganization of minimally persistent formations," in *Proc. Mathematical Theory of Networks and Systems (MTNS) Conference*, pp. 859–873, Kyoto, Japan, July 2006.

[C16] B.D.O. Anderson, C. Yu, B. Fidan, and J.M. Hendrickx, "Use of meta-formations for cooperative control," in *Proc. Mathematical Theory of Networks and Systems (MTNS) Conference*, pp. 2381–2387, Kyoto, Japan, July 2006.

[C17] B.D.O. Anderson, C. Yu, B. Fidan, and J.M. Hendrickx, "Control and information architectures for formations," in *Proc. IEEE Conference on Control Applications (Joint CCA/CACSD/ISIC)*, pp. 1127–1138, Munich, Germany, October 2006.

[C18] B. Fidan, M. Kuipers, P.A. Ioannou, and M. Mirmirani, "Longitudinal motion control of air-breathing hypersonic vehicles based on time-varying models," in *Proc. 14th AIAA Int. Space Planes and Hypersonic Systems and Technologies Conf.*, AIAA-2006-8074, Canberra, ACT, Australia, November 2006.

[C19] G. Mao, B.D.O. Anderson, and B. Fidan, "Online calibration of path loss exponent in wireless sensor networks," in *Proc. IEEE Global Telecommunications Conference (Globecom)*, Paper No. WSN06-4 (6 pages), San Francisco, CA, USA, November 2006.

[C20] S.H. Dandach, B. Fidan, S. Dasgupta, and B.D.O. Anderson, "Adaptive source localization by mobile agents," in *Proc. 45th IEEE Conference on Decision and Control*, pp. 2045–2050, San Diego, CA, USA, December 2006.

[C21] C. Yu, B. Fidan, J.M. Hendrickx, and B.D.O. Anderson, "Merging multiple formations: A meta-formation perspective," in *Proc. 45th IEEE Conference on Decision and Control*, pp. 4657–4663, San Diego, CA, USA, December 2006.

[C22] J.M. Hendrickx, C. Yu, B. Fidan, and B.D.O. Anderson, "Rigidity and persistence of meta-formations," in *Proc. 45th IEEE Conference on Decision and Control*, pp. 5980–5985, San Diego, CA, USA, December 2006.

[C23] A.A. Kannan, B. Fidan, G. Mao, and B.D.O. Anderson, "Analysis of flip ambiguities in distributed network localization," in *Proc. Information, Decision and Control Conference - IDC 2007*, pp. 193–198, Adelaide, SA, Australia, February 2007.

[C24] A.N. Bishop, P.N. Pathirana, B.Fidan, B.D.O. Anderson, and G. Mao, "Passive angle measurement based localization consistency via geometric constraints", in *Proc. Information, Decision and Control Conference - IDC 2007*, pp. 199–204, Adelaide, SA, Australia, February 2007.

[C25] B. Fidan, S. Dasgupta, and B.D.O. Anderson, "Conditions for guaranteed convergence in sensor and source localization," in *Proc. 32nd International Conference on Acoustics, Speech, and Signal Processing (ICASSP-2007)*, vol.2, pp. 1081-1084, Honolulu, Hawaii, USA, April 2007.

[C26] B. Fidan and B.D.O. Anderson, "Switching control for robust autonomous robot and vehicle platoon formation maintenance," in *Proc. 15th Mediterranean Conference on Control and Automation*, T33-002 (6 pages), Athens, Greece, June 2007.

[C27] I. Shames, C. Yu, B. Fidan, and B.D.O. Anderson, "Externally excited coordination of autonomous formations," in *Proc. 15th Mediterranean Conference on Control and Automation*, T33-003 (6 pages), Athens, Greece, June 2007.

[C28] C. Yu, B. Fidan, I. Shames, S. Sandeep, and B.D.O. Anderson, "Collision free coordination of autonomous multi-agent systems," in *Proc. European Control Conference*, pp. 900–907, Kos, Greece, July 2007.

[C29] V. Gazi, M.I. Köksal, and B. Fidan, "Aggregation in a swarm of non-holonomic agents using artificial potentials and sliding mode control," in *Proc. European Control Conference*, pp. 1485–1491, Kos, Greece, July 2007.

[C30] B.D.O. Anderson, C. Yu, and B. Fidan, "Information architecture and control design for rigid formations," in *Proc. 26th Chinese Control Conference (CCC-07)*, pp. 2–10, Zhangjiajie Hunan, China, July 2007.

[C31] A.N. Bishop, B. Fidan, B.D.O. Anderson, K. Doğançay, and P.N. Pathirana, "Optimality analysis of sensor-target geometries in passive localization: Part 1 - Bearing-only localization," in *Proc. 3rd Int. Conf. on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP)*, pp. 7–12, Melbourne, VIC, Australia, December 2007.

[C32] A.N. Bishop, B. Fidan, B.D.O. Anderson, P.N. Pathirana, and K. Doğançay, "Optimality analysis of sensor-target geometries in passive localization: Part 2 - Time-of-arrival based localization," in *Proc. 3rd Int. Conf. on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP)*, pp. 13–18, Melbourne, VIC, Australia, December 2007.

[C33] M.I. Köksal, V. Gazi, B. Fidan, and R. Ordóñez, "Tracking a maneuvering target with a swarm of non-holonomic agents using artificial potentials and sliding mode control," in *Proc. IARP-EURON Workshop on Robotics for Risky Interventions and Environmental Surveillance*, Benicassim, Spain, January 2008.

[C34] I. Shames, B. Fidan, B.D.O. Anderson, and H. Hmam, "Self-localization of mobile agents in the plane," in *Proc. IEEE Int. Symposium on Wireless Pervasive Computing*, pp. 116–120, Santorini, Greece, May 2008.

[C35] D. van der Walle, B. Fidan, A. Sutton, C. Yu and B.D.O. Anderson, "Non-hierarchical UAV formation control for surveillance tasks," in *Proc. American Control Conference*, pp. 777–782, Seattle, WA, USA, June 2008.

[C36] S. Zhai and B. Fidan, "Single view depth estimation based formation control of robotic swarms: Fundamental design and analysis," in *Proc. 16th Mediterranean Conference on Control and Automation*, pp. 1156–1161, Corsica, France, June 2008.

[C37] S. Zhai, B. Fidan, Ş.Ç. Öztürk, and V. Gazi, "Single view depth estimation based formation control of robotic swarms: Obstacle avoidance, simulation, and practical issues," in *Proc. 16th Mediterranean Conference on Control and Automation*, pp. 1162–1167, Corsica, France, June 2008.

[C38] M.I. Köksal, V. Gazi, B. Fidan, and R. Ordóñez "Tracking a maneuvering target with a non-holonomic agent using artificial potentials and sliding mode control," in *Proc. 16th Mediterranean Conference on Control and Automation*, pp. 1174–1179, Corsica, France, June 2008.

[C39] I. Shames, B. Fidan, and B.D.O. Anderson, "Reduction of self-localization errors in multi-agent autonomous formations," in *Proc. 17th World Congress of Int. Federation of Automatic Control (IFAC'08)*, pp. 6578–6583, Seoul, Korea, July 2008.

[C40] A. Sutton, B. Fidan, and D. van der Walle, "Hierarchical UAV formation control for cooperative surveillance," in *Proc. 17th World Congress of Int. Federation of Automatic Control (IFAC'08)*, pp. 12087–12092, Seoul, Korea, July 2008.

[C41] M. Kuipers, P.A. Ioannou, B. Fidan, and M. Mirmirani, "Robust adaptive multiple model controller design for an airbreathing hypersonic vehicle model," in *Proc. AIAA Guidance, Navigation, and Control Conf. and Exhibit*, AIAA-2008-7142, Honolulu, Hawaii, USA, August 2008.

[C42] V. Gazi, B. Fidan, and S. Zhai, "Single view depth estimation based formation control of robotic swarms: Implementation using realistic robot simulator," in *Advances in Mobile Robotics: Proc. 11th Int. Conf. on Climbing and Walking Robots and the Support Technologies for Mobile Machines*, pp. 1079-1089, Coimbra, Portugal, September 2008.

[C43] A.A. Kannan, B. Fidan, and G. Mao, "Robust distributed sensor network localization based on analysis of flip ambiguities," in *Proc. IEEE Global Telecommunications Conference (Globecom)*, Paper No. AH01M1-2 (6 pages), New Orleans, LA, USA, Nov.–Dec. 2008.

[C44] I. Shames, B. Fidan, and B.D.O. Anderson, "Close target reconnaissance using autonomous UAV formations," in *Proc. 47th IEEE Conference on Decision and Control*, pp. 1729–1734, Cancun, Mexico, December 2008.

[C45] G. Piovan, I. Shames, B. Fidan, F. Bullo, and B.D.O. Anderson, "On frame and orientation localization for relative sensing networks," in *Proc. 47th IEEE Conference on Decision and Control*, pp. 2326–2331, Cancun, Mexico, December 2008.

[C46] A.A. Kannan, B. Fidan, and G. Mao, "Derivation of flip ambiguity probabilities to facilitate robust sensor network localization," in *Proc. IEEE Wireless Communications and Networking Conference*, Budapest, Hungary, April 2009.

[C47] M. Kuipers, P.A. Ioannou, B. Fidan, and M. Mirmirani, "Analysis of an adaptive mixing control scheme for an airbreathing hypersonic vehicle model," in *Proc. American Control Conf.*, pp. 3148–3153, St. Louis, Missouri, USA, June 2009.

[C48] B. Fidan, J.M. Hendrickx and B.D.O. Anderson, "Edge contraction based maintenance of rigidity in multi-agent formations during agent loss," in *Proc. 17th Mediterranean Conference on Control and Automation*, pp. 422–427, Thessaloniki, Greece, June 2009.

[C49] I. Shames, P.T. Bibalan, B. Fidan, and B.D.O. Anderson, "Polynomial methods in noisy network localization," in *Proc. 17th Mediterranean Conference on Control and Automation*, pp. 1307–1312, Thessaloniki, Greece, June 2009.

[C50] I. Shames, B.D.O. Anderson, X.F. Wang, and B. Fidan, "Network synchronizability enhancement using convex optimization," in *Proc. European Control Conference*, pp. 2067–2072, Budapest, Hungary, August 2009.

[C51] I. Shames, S. Dasgupta, B. Fidan, and B.D.O. Anderson, "Circumnavigation using distance measurements," in *Proc. European Control Conference*, pp. 2444–2449, Budapest, Hungary, August 2009.

[C52] R. Soukieh, I. Shames, and B. Fidan, "Obstacle avoidance of robotic formations based on fluid mechanical modeling," in *Proc. European Control Conference*, pp. 3263–3268, Budapest, Hungary, August 2009.

[C53] R. Soukieh, I. Shames, and B. Fidan, "Obstacle avoidance of non-holonomic unicycle robots based on fluid mechanical modeling," in *Proc. European Control Conference*, pp. 3269–3274, Budapest, Hungary, August 2009.

[C54] I. Shames, B.D.O. Anderson, and B. Fidan, "On the use of convex optimization in sensor network localization and synchronization," in *Proc. IFAC Workshop on Estimation and Control of Networked Systems*, pp. 228–233, Venice, Italy, September 2009.

[C55] O. Rehman, B. Fidan, and I.R. Petersen, "Uncertainty modeling for robust multivariable control synthesis of hypersonic flight vehicles," in *Proc 16th AIAA/DLR/DGLR International Space Planes and Hypersonic Systems and Technology Conference*, AIAA 2009-7288, Bremen, Germany, October 2009.

[C56] O. Rehman, B. Fidan, and I.R. Petersen, "Minimax LQR control design of a hypersonic flight vehicle," in *Proc. 16th AIAA/DLR/DGLR International Space Planes and Hypersonic Systems and Technology Conference*, AIAA 2009-7291, Bremen, Germany, October 2009.

[C57] B. Fidan, S.P. Drake, B.D.O. Anderson, G. Mao, and A.A. Kannan, "Collinearity problems in passive target localization using direction finding sensors," in *Proc. 5th Int. Conf. on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP)*, pp. 115–120, Melbourne, Australia, December 2009.

[C58] N. Cen, K. Cheng, and B. Fidan, "Formation control of robotic swarms based on sonar sensing," in *Proc. 5th Int. Conf. on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP)*, pp. 31–36, Melbourne, Australia, December 2009.

[C59] O. Rehman, B. Fidan, and I.R. Petersen, "Robust minimax optimal control of nonlinear uncertain systems using feedback linearization with application to hypersonic flight vehicles," in *Proc. 48th IEEE Conference on Decision and Control*, pp. 720–726, Shanghai, China, December 2009.

[C60] O. Rehman, B. Fidan, and I.R. Petersen, "Uncertainty modeling and robust minimax LQR control of hypersonic flight vehicles," in *Proc. AIAA Guidance, Navigation, and Control Conference*, AIAA 2010-8285, Toronto, Canada, August 2010.

[C61] B. Fidan and İ. Bayezit, "Immersion and invariance based adaptive control of three dimensional autonomous vehicle maneuvers," in *Proc. IFAC Int. Workshop on Adaptation and Learning in Control and Signal Processing*, Antalya, Turkey, August 2010.

[C62] B. Fidan and V. Gazi, "Target tracking using adaptive gain backstepping control," in *Proc. IFAC Int. Workshop on Adaptation and Learning in Control and Signal Processing*, Antalya, Turkey, August 2010.

[C63] O. Rehman, I.R. Petersen, and B. Fidan, "Robust nonlinear control of a nonlinear uncertain system with input coupling and its application to hypersonic flight vehicles," in *Proc. IEEE Multi-Conference on Systems and Control*, pp. 1451–1457, Yokohama, Japan, September 2010.

[C64] I. Bayezit, B. Fidan, M.M. Amini and I. Shames, "Distributed cohesive motion control of quadrotor vehicle formations," in *Proc. ASME Int. Mechanical Engineering Congress & Exposition*, IMECE2010-40740, Vancouver, Canada, November 2010.

[C65] I. Bayezit, M.M. Amini, B. Fidan, and I. Shames, "Cohesive motion control of autonomous formations in three dimensions," in *Proc. 6th Int. Conf. on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP)*, pp. 205–210, Brisbane, Australia, December 2010.

[C66] O. Rehman, I.R. Petersen, and B. Fidan, "Robust nonlinear control design of a hypersonic flight vehicle using minimax linear quadratic Gaussian control," in *Proc. 49th IEEE Conference on Decision and Control*, pp. 6219-6224, Atlanta, USA, December 2010.

[C67] I. Bayezit and B. Fidan, "Nonlinear maneuvering control of rigid formations of fixed wing UAVs," in *Autonomous and Intelligent Systems: AIS 2011 Proc.*, M. Kamel et. al. (eds.), Springer, pp. 124–133, Burnaby, BC, Canada, June 2011.

[C68] I. Bayezit and B. Fidan, "Lyapunov based cohesive coordination flight of spacecraft formations," in *Proc. 6th Ankara International Aerospace Conference*, AIAC2011-142 (7 single column pages), Ankara, Turkey, September 2011.

[C69] O. Rehman, I.R. Petersen, and B. Fidan, "A minimax linear quadratic Gaussian Method for anti-windup control synthesis," in *Proc. IEEE Australian Control Conference*, pp. 525–531, Melbourne, Australia, November 2011.

[C70] M.S. Fallah, A. Khajepour, B. Fidan, S. Chen, and B. Litkouhi, "Controller development using optimal torque distribution for driver handling assistance," in *Proc. American Control Conference*, pp. 2910–2915, Montreal, Canada, June 2012.

[C71] O. Rehman, I.R. Petersen, and B. Fidan, "A mean value theorem approach to robust control design for uncertain nonlinear systems," in *Proc. American Control Conference*, pp. 6733–6738, Montreal, Canada, June 2012.

[C72] S. Dasgupta and B. Fidan, "Uniform asymptotic convergence of an adaptive algorithm with diminishing persistent excitation," in *Proc 16th IFAC Symposium on System Identification*, pp. 1514–1516, Brussels, Belgium, July 2012.

[C73] İ. Bayezit, T. Veldhuizen, B. Fidan, J.P. Huissoon, and H. Lupker, "Design of string stable adaptive cruise controllers for highway and urban missions," in *Proc 50th Annual Allerton Conference on Communication, Control, and Computing*, pp. 106–113, Urbana-Champaign, IL, USA, October 2012.

[C74] B. Fidan and A. Çamlıca, "Least-squares based adaptive source localization by mobile agents," in *Proc 50th Annual Allerton Conference on Communication, Control, and Computing*, pp. 1286–1291, Urbana-Champaign, IL, USA, October 2012.

[C75] O. Rehman, I.R. Petersen, and B. Fidan, "Minimax linear quadratic Gaussian control of nonlinear MIMO system with time varying uncertainties," in *Proc. IEEE Australian Control Conference*, pp. 138–143, Sydney, Australia, November 2012.

[C76] B. Fidan, S. Dasgupta, and B.D.O. Anderson, "Adaptive docking using range measurements," in *Proc. 51st IEEE Conference on Decision and Control*, pp. 1439–1444, Hawaii, USA, December 2012.

[C77] I. Fadakar, B. Fidan, and J.P. Huissoon, "Robust adaptive attitude synchronization of rigid body networks with unknown inertias," in *Proc 9th Asian Control Conference*, DOI: 10.1109/ASCC.2013.6606205, Istanbul, Turkey, June 2013.

[C78] S. Güler, N. Köksal, and B. Fidan, "Adaptive control of a three-agent surveillance swarm with constant speed constraint," in *Proc 9th Asian Control Conference*, DOI: 10.1109/ASCC.2013.6606221, Istanbul, Turkey, June 2013.

[C79] S. Güler, N. Köksal, B. Fidan, and V. Gazi, "Indirect adaptive formation control with nonlinear dynamics and parametric uncertainty," in *Proc 9th Asian Control Conference*, DOI: 10.1109/ASCC.2013.6606385, Istanbul, Turkey, June 2013.

[C80] İ. Bayezit, B. Fidan, and J.P. Huissoon, "Adaptive cruise control of vehicle platoons with wireless state information," in *Proc IFAC Workshop on Advances in Control and Automation Theory for Transportation Applications*, pp. 19–24, Istanbul, Turkey, September 2013.

[C81] İ. Bayezit, G. İnalhan, B. Fidan, and J.P. Huissoon "Experimental modeling and adaptive control of an unmanned aerial vehicle as roadside assistance," in *Proc IEEE Annual Conference on Intelligent Transportation Systems*, pp 1784-1790, The Hague, The Netherlands, October 2013.

[C82] V. Gazi and B. Fidan, "Adaptive formation control and target tracking in a class of multi-agent systems: Formation maneuvers," in *Proc 13th Int. Conference on Control, Automation and Systems*, pp. 78–85, Gwangju, Korea, October 2013.

[C83] A. Çamlıca, B. Fidan, and M. Yavuz, "Implant localization in human body using adaptive least-squares based algorithm," in *Proc. ASME Int. Mechanical Engineering Congress & Exposition*, IMECE2013-66039 (9 two column pages), San Diego, CA, USA, November 2013.

[C84] F. Kiraz, B. Fidan, and F. Karray, "A convex fuzzy range-free sensor network localization method," in *Robot Intelligence Technology and Applications 2: RITA 2013 Proc.*, J.-H. Kim et. al. (eds.), Springer, pp. 95-104, Denver, Colorado, USA, December 2013.

[C85] S. Khosravani, A. Khajepour, B. Fidan, S. Chen, and B. Litkouhi, "Development of a robust vehicle control with driver in the loop," in *Proc. American Control Conference*, pp. 3482–3487, Portland, OR, USA, June 2014.

[C86] F.E. Sancar, B. Fidan, J.P. Huissoon, and S.L. Waslander, "MPC based collaborative adaptive cruise control with rear end collision avoidance," in *Proc IEEE Intelligent Vehicles Symposium*, pp. 516–521, Dearborn, MI, USA, June 2014.

[C87] H. Adibi-Asl, B. Fidan, and J. McPhee, "Active steering system with adaptive pole placement control strategy," in *Proc. CSME International Congress* (6 double column pages), Toronto, Canada, June 2014.

[C88] S.J. Torres-Mendez, G. Gungor, B. Fidan, and A. Khajepour, "Comparison of adaptive and robust controllers for fully-constrained and redundant planar cable robots," in *Proc. ASME Int. Mechanical Engineering Congress & Exposition*, IMECE2014-37043 (8 double column pages), Montreal, Canada, November 2014.

[C89] G. Gungor, S.J. Torres-Mendez, B. Fidan, and A. Khajepour, "Estimation of anchor points for fully-constrained and redundant planar cable robots," in *Proc. ASME Int. Mechanical Engineering Congress & Exposition*, IMECE2014-37057 (7 double column pages), Montreal, Canada, November 2014.

[C90] S. Khosravani, I. Fadakar, A. Khajepour, B. Fidan, S. Chen, and B. Litkouhi, "Nonlinear robust control of vehicle lateral dynamics considering driver's dynamics," in *Proc. ASME Int. Mechanical Engineering Congress & Exposition*, IMECE2014-39311 (8 double column pages), Montreal, Canada, November 2014.

[C91] B. Fidan and I. Umay, "Adaptive source localization with unknown permittivity and path loss coefficients," in *Proc. IEEE Int. Conference on Mechatronics*, pp. 170–175, Nagoya, Japan, March 2015.

[C92] H. Jamshidifar, B. Fidan, G. Gungor, and A. Khajepour, "Adaptive vibration control of a flexible cable driven parallel robot," in *Proc. 15th IFAC Symposium on Information Control Problems in Manufacturing*, pp. 1366–1371, Ottawa, Canada, May 2015.

[C93] G. Gungor, H. Jamshidifar, and B. Fidan, "Online estimation and compensation of friction in industrial cable robot manipulation," in *Proc. 15th IFAC Symposium on Information Control Problems in Manufacturing*, pp. 1398–1403, Ottawa, Canada, May 2015.

[C94] S. Guler and B. Fidan, "Range based target capture and station keeping of nonholonomic vehicles without GPS," in *Proc. European Control Conference*, pp. 2970–2975, Linz, Austria, July 2015.

[C95] N. Koksal, B. Fidan, and K. Buyukkabasakal, "Real-time implementation of decentralized adaptive formation control on multi-quadrotor systems," in *Proc. European Control Conference*, pp. 3162–3167, Linz, Austria, July 2015.

[C96] K. Buyukkabasakal, B. Fidan, A. Savran, and N. Koksal, "Real-time implementation of mixing adaptive control on quadrotor UAVs," in *Proc. European Control Conference*, pp. 3597–3602, Linz, Austria, July 2015.

[C97] I. Umay, B. Fidan, M.R. Yuce, "Endoscopic capsule localization with unknown signal propagation coefficients," in *Proc. IEEE Int. Conference on Advanced Robotics*, pp. 224–229, Istanbul, Turkey, July 2015.

[C98] M. Jalalmaab, B. Fidan, S. Jeon, and P. Falcone, "Model predictive path planning with time-varying safety constraints for highway autonomous driving," in *Proc. IEEE Int. Conference on Advanced Robotics*, pp. 213–217, Istanbul, Turkey, July 2015.

[C99] F.E. Sancar, B. Fidan, and J.P. Huissoon, "Deadzone switching based cooperative adaptive cruise control with rear-end collision check," in *Proc. IEEE Int. Conference on Advanced Robotics*, pp. 283–287, Istanbul, Turkey, July 2015.

[C100] I. Umay and B. Fidan, "Adaptive magnetic sensing based wireless capsule localization," in *Proc. IEEE International Symposium on Medical Information and Communication Technology*, (5 double column pages) Worcester, MA, USA, March 2016.

[C101] S. Khosravani, A. Khajepour, and B. Fidan, "Integrating the effect of driver to improve handling performance of vehicle," (7 double column pages) in *Proc. 2016 IFAC Symposium on Control in Transportation Systems, Special Session in Memory of Nazlı Kahveci*, Istanbul, Turkey, May 2016.

[C102] H. Zengin, N. Zengin, and B. Fidan, "Adaptive motion control of nonholonomic intelligent walker-human systems," (8 double column pages) in *Proc. 12th IFAC International Workshop on Adaptation and Learning in Control and Signal Processing*, Eindhoven, the Netherlands, 2016.

[C103] M. Jalalmaab, M. Pirani, B. Fidan, and S. Jeon, "Cooperative road condition estimation for an adaptive model predictive collision avoidance control strategy," in *Proc. IEEE Intelligent Vehicles Symposium*, pp. 1072–1077, Gothenburg, Sweden, June 2016.

[C104] S. Guler, B. Fidan, and S. Dasgupta, "Cohesive motion control as a regulation problem," in Proc. 24th Mediterranean Conference on Control and Automation, pp. 1071–1076, Athens, Greece, June 2016.

[C105] G. Gungor, B. Fidan, and W.W. Melek, "A survey on control of serial modular reconfigurable robot manipulators," (6 double column pages) in *Proc. CSME International Congress*, Kelowna, BC, Canada, June 2016.

[C106] E. Hashemi, M. Pirani, A. Khajepour, B. Fidan, A. Kasaiezadeh, S.-K. Chen, and B. Litkouhi, "Integrated estimation structure for the tire friction forces in ground vehicles," in *Proc. IEEE International Conference on Advanced Intelligent Mechatronics*, pp. 1657–1662, Banff, AB, Canada, July 2016.

[C107] N. Koksal, H. An, and B. Fidan, "Two-level nonlinear tracking control of a quadrotor unmanned aerial vehicle," in *Proc. 20th IFAC Symposium on Automatic Control in Aerospace*, pp. 254–259, Sherbrooke, QC, Canada, August 2016.

[C108] E. Hashemi, M. Pirani, B. Fidan, A. Khajepour, S.-K. Chen, and B. Litkouhi, "Distributed robust vehicle state estimation," in *Proc. IEEE Intelligent Vehicles Symposium*, pp. 693–698, Redondo Beach, USA, June 2017.

[C109] M. Jalalmaab, B. Fidan, S. Jeon, and P. Falcone "Guaranteeing persistent feasibility of model predictive motion planning for autonomous vehicles," in *Proc. IEEE Intelligent Vehicles Symposium*, pp. 843–848, Redondo Beach, USA, June 2017.

[C110] M. Faraj, F.E. Sancar, and B. Fidan, "Platoon-based autonomous vehicle speed optimization near signalized intersections," in *Proc. IEEE Intelligent Vehicles Symposium*, pp. 1299–1304, Redondo Beach, USA, June 2017.

[C111] M. Pirani, E. Hashemi, B. Fidan, and J.W. Simpson-Porco, "H-∞ robustness in mechanical and power networks", in *Proc. IFAC World Congress*, pp. 5363–5368, Toulouse, France, July 2017.

[C112] N. Zengin, H. Zengin, and B. Fidan, "Adaptive control of intelligent walker guided systems", in *Proc. IEEE International Symposium on Robotics and Intelligent Sensors*, pp. 186–191, Ottawa, Canada, October 2017.

[C113] M. Pirani, J.W. Simpson-Porco, and B. Fidan, "System-theoretic performance metrics for low-inertia stability of power networks", in *Proc. 56th IEEE Conference on Decision and Control*, pp. 5106–5111, Melbourne, Australia, December 2017.

[C114] Y. Zhang, A. Woo, B. Fidan, and A. Khajepour, "Adaptive yaw control of three-axle road vehicles based on mass, yaw inertia and CG position identification," in *Proc. CSME International Congress* (6 double column pages), York, Canada, May 2018.

[C115] M. Faraj, B. Fidan, and V. Gaudet, "Multi-module range anxiety reduction scheme for battery-powered vehicles," in *Proc. IEEE Intelligent Vehicles Symposium*, pp. 904–909, Changshu, China, June 2018.

[C116] G. Gungor, B. Fidan, and W. Melek, "Hierarchical decentralized robust control design for modular and reconfigurable robots," in *Proc. IEEE Int. Conference on Automation Science and Engineering*, pp. 1006–1011, Munich, Germany, August 2018.

[C117] M. Pirani, E. Hashemi, B. Fidan, J. Simpson-Porco, H. Sandberg, and K. Johansson, "Resilient estimation and control on k-nearest neighbor platoons: A network-theoretic approach", in *Proc. 7th IFAC Workshop on Distributed Estimation and Control in Networked Systems*, Groningen, Netherlands, August 2018.

[C118] A. Skobeleva, B. Fidan, V. Ugrinovskii, I.R. Petersen, "Planar cooperative extremum seeking with guaranteed convergence using a three-robot formation", in *Proc. 57th IEEE Conference on Decision and Control*, pp. 1305–1310, Miami, USA, December 2018.

[C119] I. Umay, B. Fidan, and W. Melek "An integrated task and motion planning technique for multi-robot-systems," in *Proc. IEEE International Symposium on Robotic and Sensors Environments* (6 double column pages) Ottawa, Canada, June 2019.

[C120] H. Zengin, N. Zengin, B. Fidan, and A. Khajepour, "Blending based multiple-model adaptive control for multivariable systems and application to lateral vehicle dynamics," in *Proc. European Control Conference*, pp. 2557–2562, Naples, Italy, June 2019.

[C121] H. Demircioglu, I. Fadakar, and B. Fidan, "Adaptive Hessian estimation based extremum localization," in *Proc. European Control Conference*, pp. 3915–3920, Naples, Italy, June 2019.

[C122] S.-H. Park, Y.-B. Bae, B. Fidan, and H.-S. Ahn, "Distance-based mobile node localization of fixed beacons using RMS Prop," in *Proc. SICE Annual Conference*, pp. 376–381, Hiroshima, Japan, September 2019.

[C123] J. Hendrickx, B. Gerencser, and B. Fidan, "Trajectory convergence from coordinate-wise decrease of quadratic energy functions, and applications to platoons," in *Proc. IEEE Conference on Decision and Control*, Nice, France, December 2019 (6 double column pages, joint CDC/L-CSS paper with [J68]).

[C124] O. Barrera-Perez, B. Fidan, and C. Nielsen, "Adaptive path following for a nonholonomic mobile manipulator," in *Proc. IFAC World Congress*, Berlin, Germany, July 2020 (6 double column pages).

[C125] E. Mohammadbagher, N. Bhatt, E. Hashemi, B. Fidan, and A. Khajepour, "Real-time pedestrian localization and state estimation using moving horizon estimation," in *Proc. IEEE 23rd Int. Conference on Intelligent Transportation Systems*, pp. 1–7, Rhodes, Greece, September 2020.

[C126] N. Zengin, H. Zengin, B. Fidan, and A. Khajepour, "Slip ratio optimization in vehicle safety control systems using least-squares based adaptive extremum seeking," in *Proc. IEEE Int. Conference on Systems, Man, and Cybernetics*, pp. 1445–1450, Toronto, Canada, October 2020.

[C127] A. Ravi, X. Yu, I. Santelices, F. Karray, and B. Fidan, "General frameworks for anomaly detection explainability: Comparative study," in *Proc. IEEE Int. Conference on Autonomous Systems*, pp. 1–5, Montreal, Canada, August 2021.

[C128] Y. Wang, S. Yanushkevich, A. Mohammadi, K. Plataniotis, M. Coates, B. Fidan, M. Gavrilova, Y. Hu, F. Karray, H. Leung, and M. Hou, "Advances in autonomous systems: A summary of the AutoDefence Summer School at IEEE ICAS'21," in *Proc. IEEE Int. Conference on Autonomous Systems*, pp. 1–7, Montreal, Canada, August 2021.

[C129] X. Fan, S. Jeon, and B. Fidan, "Occlusion-aware self-supervised stereo matching with confidence guided raw disparity fusion," in *Proc. 19th Conference on Robots and Vision*, IEEE Computer Society, pp. 132–139, Toronto, Canada, May 2022.

[C130] N. Reginald, O. Al-Buraiki, B. Fidan, and E. Hashemi "Confidence estimator design for dynamic feature point removal in robot visual-inertial odometry," in *Proc. 48th Annual Conference of the Industrial Electronics Society*, Brussels, Belgium, October 2022 (6 double column pages).

[C131] X. Fan, N. Reginald, and B. Fidan, "Adaptive path following for a differential drive robot with EKF-based localization," in *Proc. 13th IFAC Symposium on Robot Control*, Matsumoto, Japan, October 2022 (6 double column pages).

[C132] N. Zengin, B. Fidan, and L. Khoshnevisan, "Lyapunov analysis of least squares based direct adaptive control," in *Proc. IEEE Conference on Decision and Control*, pp. 709-714, Cancun, Mexico, December 2022.

[C133] A. Lovi, B. Fidan, and C. Nielsen, "Multiple model reference adaptive tracking control of multivariable systems with blending," in *Proc. IEEE Conference on Decision and Control*, pp. 1362-1367, Cancun, Mexico, December 2022.

THESES:

[T1] B. Fidan, "Motion planning of a mechanical snake using neural networks," Master's thesis, Bilkent University, July 1998.

[T2] B. Fidan, *Nonlinear and Adaptive Control of Time Varying and Multivariable Systems: New Designs and Applications.* PhD thesis, University of Southern California, December 2003.

SELECTED TECHNICAL REPORTS:

[R1] P.A. Ioannou, K. Li, A. Abdullah, R. Rhagavendra, and B. Fidan, "Decentralized and reconfiguration control for large scale systems with application to a segmented telescope test-bed," Final Report to Califonia State University, Los Angeles, for Award No. UAS/USC-220438, March 2003.

[R2] B. Fidan, Y. Zhang, and P.A. Ioannou, "Adaptive control of slowly time varying systems with modeling uncertainties," Tech. Rep. USC-CATT 11-20-04, Univ. Southern California, Los Angeles, November 2004.

[R3] J.M. Hendrickx, B. Fidan, C. Yu, B.D.O. Anderson, V.D. Blondel, "Primitive operations for the construction and reorganization of persistent formations," Cesame Research Report 2006.62, arXiv:cs.MA/0609041, 8 September 2006.

[R4] A.A. Kannan, B. Fidan, G. Mao, and B.D.O. Anderson, "Analysis of flip ambiguities in distributed network localization," Tech. Rep. NICTA PA006288, National ICT Australia, Canberra, ACT, Australia, November 2006.

[R5] J.M. Hendrickx, C. Yu, B. Fidan, and B.D.O. Anderson, "Rigidity and persistence for ensuring shape maintenance of multiagent meta formations (ext'd version)," arXiv:cs.MA/0710.2659v1, 14 October 2007.

[R6] M. Pirani, E.M. Shahrivar, B. Fidan, and S. Sundaram, "Robustness of leader - follower networked dynamical systems", arXiv:math.OC/1604.08651, 28 April 2016.

[R7] M. Pirani, E. Hashemi, J.W. Simpson-Porco, B. Fidan, and A. Khajepour, "A graph theoretic approach to the robustness of k-nearest neighbor vehicle platoons", arXiv:math.OC/1607.01821, 6 July 2016.

Selected Talks (Excluding Conference Presentations):

- "Robust nonlinear adaptive control of multivariable LTI systems," in *2nd Southern California Nonlinear Control Workshop*, University of California, San Diego, USA, 2001.

- "Backstepping control of LTV systems with known and unknown parameters," in *4th Southern California Nonlinear Control Workshop*, University of California, Santa Barbara, USA, 2002.

- "A robust adaptive controller for LTV systems," in *5th Southern California Nonlinear Control Workshop*, California Institute of Technology, USA, 2002.

- "Adaptive Control Toolbox," in *8th Southern California Nonlinear Control Workshop*, University of California, Santa Barbara, USA, 2004.

- "Nonlinear and adaptive control of time varying systems with uncertainties," invited talk, Michigan State University, University of Hawaii, USA; Queen's University, Canada; the Australian National University, Australia; Anadolu University, Turkey; 2004–2005.

- "Persistent autonomous formations and cohesive motion control," invited talk, University of California, Santa Barbara, USA; TOBB University of Economics and Technology, Turkey; 2006.

- "Robust cooperative sensor localization," invited talk, TOBB University of Economics and Technology, Turkey; 2006.

- "Switching control for multi-agent formation maintenance," invited talk, TOBB University of Economics and Technology, Turkey; Universite catholique de Louvain , Belgium; Delft University of Technology, the Netherlands; 2007.

- "Nonlinear and adaptive approaches in autonomous multi-vehicle localization and formation control," invited talk, Delft University of Technology, the Netherlands; TOBB University of Economics and Technology, Turkey; 2008.

- "Air-breathing hypersonic flight control : Review and new robust control approaches," in *Australian Hypersonics Capabilities and Future Directions Workshop*, Brisbane, Australia, 2008.

- "Nonlinear cohesive motion control of autonomous multi-agent systems," invited talk, University of Southern California, USA; University of Waterloo, University of Victoria, Canada; the Australian National University, Australia; 2008–2009.

- "Adaptive approaches in signal source localization by autonomous vehicles," invited talk, University of Waterloo, Canada; Middle East Technical University, Turkey; University of Iowa, USA, 2010–2011.

- "Adaptive and cooperative signal source seeking," invited talk, Chalmers University of Technology, Sweden, 2015; UNSW, Canberra, Australia, 2017.

- "Adaptive and cooperative target seeking," invited talk, University of Melbourne, Australia, 2018; Monash University, Australia, 2018; Gwangju Institute of Science and Technology, Korea, 2018.