Hassan K Khalil

List of Publications by Year
in descending order

126 papers	6,879 citations	126907 33 h-index	118850 62 g-index
129 all docs	129 docs citations	129 times ranked	3091 citing authors

#	Article	IF	Citations
1	Output feedback stabilization of fully linearizable systems. International Journal of Control, 1992, 56, 1007-1037.	1.9	695
2	Highâ€gain observers in nonlinear feedback control. International Journal of Robust and Nonlinear Control, 2014, 24, 993-1015.	3.7	468
3	Performance Recovery of Feedback-Linearization-Based Designs. IEEE Transactions on Automatic Control, 2008, 53, 2324-2334.	5.7	387
4	Adaptive control of nonlinear systems using neural networks. International Journal of Control, 1992, 55, 1299-1317.	1.9	326
5	High-gain observers in the presence of measurement noise: A switched-gain approach. Automatica, 2009, 45, 936-943.	5.0	318
6	Robust servomechanism output feedback controllers for feedback linearizable systems. Automatica, 1994, 30, 1587-1599.	5.0	276
7	A Nonlinear High-Gain Observer for Systems With Measurement Noise in a Feedback Control Framework. IEEE Transactions on Automatic Control, 2013, 58, 569-580.	5.7	170
8	Error bounds in differentiation of noisy signals by high-gain observers. Systems and Control Letters, 2008, 57, 856-862.	2.3	141
9	Nonlinear Output-Feedback Tracking Using High-gain Observer and Variable Structure Control**An earlier version of this paper was presented at the 1995 IFAC Nonlinear Control Systems Design Symposium, held in Lake Tahoe, U.S.A. in June 1995.,11A globally bounded output-feedback variable structure controller with a high-gain observer is designed for a feedback-linearizable minimum-phase nonlinear system in the presence of unknown disturbance. Automatica, 1997, 33, 1845-1856.	5.0	130
10	Discrete-time implementation of high-gain observers for numerical differentiation. International Journal of Control, 1999, 72, 1523-1537.	1.9	129
11	Robust output feedback regulation of minimum-phase nonlinear systems using conditional integrators. Automatica, 2005, 41, 43-54.	5.0	122
12	Highâ€gain observers in nonlinear feedback control. International Journal of Robust and Nonlinear Control, 2014, 24, 991-992.	3.7	109
13	Multirate Sampled-Data Output Feedback Control With Application to Smart Material Actuated Systems. IEEE Transactions on Automatic Control, 2009, 54, 2518-2529.	5.7	97
14	Control of Systems With Hysteresis Via Servocompensation and Its Application to Nanopositioning. IEEE Transactions on Control Systems Technology, 2013, 21, 725-738.	5.2	94
15	High-gain observers in nonlinear feedback control. , 2008, , .		93
16	Output feedback stabilization of inverted pendulum on a cart in the presence of uncertainties. Automatica, 2015, 54, 146-157.	5.0	93
17	Robust Stabilization of Non-Minimum Phase Nonlinear Systems Using Extended High-Gain Observers. IEEE Transactions on Automatic Control, 2011, 56, 802-813.	5.7	87
18	Cascade high-gain observers in output feedback control. Automatica, 2017, 80, 110-118.	5.0	85

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19	On the design of robust servomechanisms for minimum phase nonlinear systems. International Journal of Robust and Nonlinear Control, 2000, 10, 339-361.	3.7	81
20	Infinite-time regulators for singularly perturbed difference equations†. International Journal of Control, 1984, 39, 587-598.	1.9	70
21	Feedback control of nonstandard singularly perturbed systems. IEEE Transactions on Automatic Control, 1989, 34, 1052-1060.	5.7	69
22	Robust adaptive output feedback control of nonlinear systems without persistence of excitation. Automatica, 1997, 33, 2025-2032.	5.0	65
23	Output feedback stabilization using variable structure control. International Journal of Control, 1995, 62, 831-848.	1.9	64
24	Speed Observer and Reduced Nonlinear Model for Sensorless Control of Induction Motors. IEEE Transactions on Control Systems Technology, 2009, 17, 327-339.	5.2	63
25	Feedback Linearization for Nonlinear Systems With Time-Varying Input and Output Delays by Using High-Gain Predictors. IEEE Transactions on Automatic Control, 2016, 61, 2262-2268.	5.7	56
26	Performance Recovery of Dynamic Feedback-Linearization Methods for Multivariable Nonlinear Systems. IEEE Transactions on Automatic Control, 2020, 65, 1365-1380.	5.7	56
27	Design and Analysis of Sliding Mode Controller Under Approximate Hysteresis Compensation. IEEE Transactions on Control Systems Technology, 2015, 23, 598-608.	5.2	50
28	Differentiation with High-Gain Observers the Presence of Measurement Noise. , 2006, , .		49
29	Lyapunov-based switching control of nonlinear systems using high-gain observers. Automatica, 2007, 43, 150-157.	5.0	48
30	Extended High-Gain Observers as Disturbance Estimators. SICE Journal of Control Measurement and System Integration, 2017, 10, 125-134.	0.7	45
31	Robustness of high-gain observer-based nonlinear controllers to unmodeled actuators and sensors. Automatica, 2002, 38, 361-369.	5.0	43
32	Robust output regulation of minimum phase nonlinear systems using conditional servocompensators. International Journal of Robust and Nonlinear Control, 2005, 15, 83-102.	3.7	43
33	Funnel control for nonlinear systems with arbitrary relative degree using high-gain observers. Automatica, 2019, 105, 107-116.	5.0	42
34	Stability analysis of nonlinear multiparameter singularly perturbed systems. IEEE Transactions on Automatic Control, 1987, 32, 260-263.	5.7	39
35	Adaptive Control of Nonlinear Systems Using Neural Networks - A Dead-Zone Approach. , 1991, , .		39
36	Nonlinear observers comprising high-gain observers and extended Kalman filters. Automatica, 2013, 49, 3583-3590.	5.0	37

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37	Regulation of nonlinear systems using conditional integrators. International Journal of Robust and Nonlinear Control, 2005, 15, 339-362.	3.7	32
38	High-gain observers in the presence of measurement noise: A nonlinear gain approach. , 2008, , .		31
39	Enlarging the Region of Attraction of Equilibria of Underactuated Systems Using Impulsive Inputs. IEEE Transactions on Control Systems Technology, 2016, 24, 334-340.	5.2	30
40	A note on the robustness of high-gain-observer-based controllers to unmodeled actuator and sensor dynamics. Automatica, 2005, 41, 1821-1824.	5.0	29
41	Analysis of the Use of Low-Pass Filters with High-Gain Observers. IFAC-PapersOnLine, 2016, 49, 488-492.	0.9	28
42	Two-time-scale averaging of systems involving operators and its application to adaptive control of hysteretic systems. , 2009, , .		25
43	Nonlinear output regulation with adaptive conditional servocompensator. Automatica, 2012, 48, 2550-2559.	5.0	25
44	Inversion-free stabilization and regulation of systems with hysteresis via integral action. Automatica, 2014, 50, 1017-1025.	5.0	25
45	Practical Synchronization in Networks of Nonlinear Heterogeneous Agents With Application to Power Systems. IEEE Transactions on Automatic Control, 2021, 66, 184-198.	5.7	25
46	Effect of unmodeled actuator dynamics on output feedback stabilization of nonlinear systems. Automatica, 1996, 32, 1323-1327.	5.0	24
47	Estimation of the Region of Attraction of Underactuated Systems and Its Enlargement Using Impulsive Inputs. IEEE Transactions on Robotics, 2019, 35, 618-632.	10.3	24
48	Closed-Loop Behavior of a Class of Nonlinear Systems Under EKF-Based Control. IEEE Transactions on Automatic Control, 2007, 52, 536-540.	5.7	23
49	Decentralized stabilization of a class of non-linear interconnected systemsâ€. International Journal of Control, 1982, 36, 803-818.	1.9	22
50	Sliding-mode tracking control of piezo-actuated nanopositioners. , 2012, , .		22
51	Output feedback stabilization using superâ€twisting control and highâ€gain observer. International Journal of Robust and Nonlinear Control, 2019, 29, 601-617.	3.7	22
52	Fast Consensus in Multi-Agent Systems With Star Topology Using High Gain Observers. , 2017, 1, 188-193.		20
53	Control of systems with hysteresis via servocompensation and its application to nanopositioning. , 2010, , .		19
54	Semi-Global Output Feedback Stabilization of Non-Minimum Phase Nonlinear Systems. IEEE Transactions on Automatic Control, 2017, 62, 4005-4010.	5.7	18

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55	Control of Unknown Dynamic Hysteretic Systems Using Slow Adaptation: Preliminary Results. Proceedings of the American Control Conference, 2007, , .	0.0	17
56	A novel nonlinear output feedback control applied to the TORA benchmark system. , 2008, , .		17
57	Speed control of Permanent Magnet Synchronous Motor using extended high-gain observer. , 2016, , .		15
58	Synchronization in Networks of Identical Linear Systems with Reduced Information. , 2018, , .		15
59	Speed Control of Permanent Magnet Synchronous Motor With Uncertain Parameters and Unknown Disturbance. IEEE Transactions on Control Systems Technology, 2021, 29, 2639-2646.	5.2	15
60	Analysis of a nonlinear high-gain observer in the presence of measurement noise. , 2011, , .		13
61	Tracking performance of a highâ€gain observer in the presence of measurement noise. International Journal of Adaptive Control and Signal Processing, 2016, 30, 1228-1243.	4.1	13
62	Inversion-Free Hysteresis Compensation via Adaptive Conditional Servomechanism With Application to Nanopositioning Control. IEEE Transactions on Control Systems Technology, 2021, 29, 1922-1935.	5.2	13
63	Self-Excited Limit Cycles in an Integral-Controlled System With Backlash. IEEE Transactions on Automatic Control, 2014, 59, 1020-1025.	5.7	12
64	High-gain observers in nonlinear feedback control. , 2009, , .		11
65	An algorithm for enlarging the region of attraction using trajectory reversing. , 2017, , .		11
66	Multirate Sampled-Data Output Feedback Using High-Gain Observers. , 2006, , .		9
67	Robust stabilization of non-minimum phase nonlinear systems using extended high gain observers. , 2008, , .		8
68	Feedback control of the spatiotemporal firing patterns of neural microcircuits. , 2010, , .		8
69	A robust adaptive servocompensator for nanopositioning control. , 2010, , .		8
70	Application of the extended high gain observer to underactuated mechanical systems. , 2012, , .		8
71	Scalable Consensus in Networks of Multiagent Systems Using High-Gain Observers. IEEE Transactions on Control of Network Systems, 2020, 7, 1237-1247.	3.7	8
72	Robust speed control of induction motors: application to a benchmark example. International Journal of Adaptive Control and Signal Processing, 2000, 14, 157-170.	4.1	7

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73	Full-order high-gain observers for minimum phase nonlinear systems. , 2009, , .		7
74	High-gain-observer tracking performance in the presence of measurement noise. , 2009, , .		7
75	On the Transient Response of a Nonlinear Output Regulator. IEEE Transactions on Automatic Control, 2010, 55, 1455-1460.	5.7	7
76	Conditional integrator for non-minimum phase nonlinear systems. , 2012, , .		7
77	Funnel control of higher relative degree systems. , 2017, , .		7
78	Stabilization of Homoclinic Orbits of Two Degree-of-Freedom Underactuated Systems. , 2019, , .		7
79	Multirate Sampled-Data Output Feedback Control of Smart Material Actuated Systems. Proceedings of the American Control Conference, 2007, , .	0.0	6
80	Lyapunov redesign approach to output regulation of nonlinear systems using conditional servocompensators. , 2008, , .		6
81	Model-based spatiotemporal analysis and control of a network of spiking Basal Ganglia neurons. , 2011, , .		6
82	Passivity-based controller design for stablization of underwater gliders. , 2012, , .		6
83	Control of flexible joint manipulators using only motor position feedback: A separation principle approach. , 2013, , .		6
84	Tracking Error Analysis for Feedback Systems With Hysteresis Inversion and Fast Linear Dynamics1. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2014, 136, .	1.6	6
85	An adaptive conditional servocompensator design for nanopositioning control. , 2017, , .		6
86	Robust tracking of an unknown trajectory with a multi-rotor UAV: A high-gain observer approach. , 2020, , .		6
87	Approximation of Nash strategies. , 1979, , .		5
88	Output regulation of non-minimum phase nonlinear systems using an extended high-gain observer. , 2009, , .		5
89	Regulation under disturbances with multiple harmonics of unknown frequency. , 2011, , .		5
90	Performance recovery under output feedback for input nonaffine nonlinear systems. , 2012, , .		5

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91	Full-order Extended High Gain Observers for a class of nonlinear systems. , 2012, , .		5
92	Application of dynamic inversion with extended high-gain observers to inverted pendulum on a cart. , 2013, , .		5
93	Stabilization of energy level sets of underactuated mechanical systems exploiting impulsive braking. Nonlinear Dynamics, 2021, 106, 279-293.	5.2	5
94	Output regulation of linear systems subject to input constraints. , 2008, , .		4
95	Closed-loop analysis for systems with fast linear dynamics preceded by hysteresis. , 2013, , .		4
96	Robustness of high-gain-observer-based controllers to time delays. , 2016, , .		4
97	Enlarging the Region of Attraction of equilibria of underactuated systems using Sum of Squares and Impulse Manifold Method. , 2017, , .		4
98	Feedback Control of Nonstandard Singularly Perturbed Systems. , 1989, , .		3
99	Universal integral controllers with non-linear integral gains. International Journal of Control, 2004, 77, 1521-1531.	1.9	3
100	On the steady-state error of a nonlinear regulator. , 2010, , .		3
101	Quadratic-type Lyapunov functions for singularly perturbed systems. , 1981, , .		2
102	Near-optimum regulators for stochastic linear singularly perturbed systems. , 1982, , .		2
103	Performance analysis of output regulation for a class of nonlinear systems. , 2009, , .		2
104	Tracking error analysis for singularly perturbed systems preceded by piecewise linear hysteresis. , 2012, , .		2
105	On the steadyâ€state error of a nonlinear regulator. International Journal of Robust and Nonlinear Control, 2013, 23, 1869-1879.	3.7	2
106	Semi-global output feedback stabilization of a class of non-minimum phase nonlinear systems. , 2013, , .		2
107	Design and analysis of a sliding mode controller for systems with hysteresis. , 2013, , .		2
108	High-gain observers in the presence of sensor nonlinearities. , 2017, , .		2

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109	Regulation of Non-Minimum-Phase Nonlinear Systems Using Slow Integrators. , 2018, , .		2
110	Inversion-free Control of Hysteresis Nonlinearity Using An Adaptive Conditional Servomechanism. , 2019, , .		2
111	Inversion-Based Hysteresis Compensation Using Adaptive Conditional Servocompensator for Nanopositioning Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2021, 143, .	1.6	2
112	Reduced-order modeling of nonlinear singularly perturbed systems driven by wide-band noise. , 1982, , .		1
113	Adaptive stabilization of a class of nonlinear systems using high-gain feedback. , 1986, , .		1
114	Asymptotic Regulation of Minimum Phase Nonlinear Systems Using Output Feedback. , 1993, , .		1
115	Closed-loop analysis of slow adaptation in the control of unknown dynamic hysteretic systems. , 2007, , .		1
116	Self-excited limit cycles in an integral-controlled system with backlash. , 2013, , .		1
117	High-gain-predictor-based output feedback control for time-delay nonlinear systems. , 2015, , .		1
118	Sensorless Speed Control of PMSM Using Extended High-Gain Observers. , 2019, , .		1
119	Practical Frequency Synchronization in Power Systems Using Extended High-Gain Observer Under Unknown Time-Varying Power Demand. , 2020, , .		1
120	Scalable Coherence in Large Scale Second-Order Networks Using High-Gain Observer. , 2020, , .		1
121	NONLINEAR CONTROL: ADAPTATION AND LEARNING. World Scientific Series in Robotics and Intelligent Systems, 1997, , 95-119.	0.1	1
122	High-gain Observer-based Output Feedback Control with Sensor Dynamic Governed by Parabolic PDE. IFAC-PapersOnLine, 2020, 53, 5034-5038.	0.9	1
123	Closed-loop stackelberg strategies for singularly perturbed linear quadratic problems. , 1978, , .		0
124	Tracking an unknown two-frequency reference using a frequency estimator-based servocompensator. , 2011, , .		0
125	Hâˆž control of two-time-scale systems. , 1992, , .		0
126	A Real Schur Form Method for Modeling Singularly Perturbed Systems. , 1988, , .		0