

# Morten Hovd

## List of Publications by Year in descending order

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144  
papers

2,013  
citations

471061

17  
h-index

301761

39  
g-index

146  
all docs

146  
docs citations

146  
times ranked

1224  
citing authors

#	ARTICLE	IF	CITATIONS
1	Indirect Finite Control Set Model Predictive Control of Modular Multilevel Converters. IEEE Transactions on Smart Grid, 2015, 6, 1520-1529.	6.2	212
2	Simple frequency-dependent tools for control system analysis, structure selection and design. Automatica, 1992, 28, 989-996.	3.0	184
3	Sequential design of decentralized controllers. Automatica, 1994, 30, 1601-1607.	3.0	151
4	Procedure for regulatory control structure selection with application to the FCC process. AIChE Journal, 1993, 39, 1938-1953.	1.8	104
5	Control of symmetrically interconnected plants. Automatica, 1994, 30, 957-973.	3.0	98
6	Persistently exciting model predictive control. International Journal of Adaptive Control and Signal Processing, 2014, 28, 536-552.	2.3	85
7	Pairing Criteria for Decentralized Control of Unstable Plants. Industrial & Engineering Chemistry Research, 1994, 33, 2134-2139.	1.8	66
8	SVD controllers for $H_2$ , $H_\infty$ and $H_2/H_\infty$ -optimal control. Automatica, 1997, 33, 433-439.	3.0	62
9	Implicit improved vertex control for uncertain, time-varying linear discrete-time systems with state and control constraints. Automatica, 2013, 49, 2754-2759.	3.0	61
10	Improved independent design of robust decentralized controllers. Journal of Process Control, 1993, 3, 43-51.	1.7	48
11	Control of the Modular Multilevel Converter Based on a Discrete-Time Bilinear Model Using the Sum of Squares Decomposition Method. IEEE Transactions on Power Delivery, 2015, 30, 2179-2188.	2.9	39
12	On feasible sets for MPC and their approximations. Automatica, 2011, 47, 133-139.	3.0	33
13	Constrained Control of Uncertain, Time-varying Linear Discrete-Time Systems Subject to Bounded Disturbances. IEEE Transactions on Automatic Control, 2015, 60, 831-836.	3.6	32
14	Robust output feedback model predictive control for linear systems via moving horizon estimation. , 2008, , .		30
15	Use of Frequency-Dependent RGA for Control Structure Selection. , 1990, , .		28
16	Detecting non-linearity induced oscillations via the dyadic filter bank property of multivariate empirical mode decomposition. Journal of Process Control, 2017, 60, 68-81.	1.7	27
17	Plant-wide oscillation detection using multivariate empirical mode decomposition. Computers and Chemical Engineering, 2018, 117, 320-330.	2.0	22
18	A Kalman-filtering derivation of simultaneous input and state estimation. Automatica, 2019, 108, 108478.	3.0	21

#	ARTICLE	IF	CITATIONS
19	Approximate explicit linear MPC via Delaunay tessellation. , 2009, , .		20
20	Decomposition principle in model predictive control for linear systems with bounded disturbances. Automatica, 2009, 45, 1917-1922.	3.0	18
21	Explicit constraint control based on interpolation techniques for time-varying and uncertain linear discrete-time systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 5741-5746.	0.4	18
22	Nonlinear Model Predictive Control of the Czoehralski Process**Supported by Prediktor AS and the Research Council of Norway.. IFAC-PapersOnLine, 2016, 49, 120-125.	0.5	17
23	An Adaptive Non-Linearity Detection Algorithm for Process Control Loops**Financial support to the first author from Siemens AS, Norway, is gratefully acknowledged.. IFAC-PapersOnLine, 2016, 49, 1020-1025.	0.5	17
24	Improved oscillation detection via noise-assisted data analysis. Control Engineering Practice, 2018, 81, 162-171.	3.2	17
25	Relaxing PWQ Lyapunov stability criteria for PWA systems. Automatica, 2013, 49, 667-670.	3.0	16
26	Inverse parametric convex programming problems via convex liftings. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 2489-2494.	0.4	16
27	Quantifying the potential benefits of constrained control for a large-scale system. IET Control Theory and Applications, 2002, 149, 423-432.	1.7	15
28	On the design of exact penalty functions for MPC using mixed integer programming. Computers and Chemical Engineering, 2014, 70, 104-113.	2.0	15
29	Run-To-Run control of the Czoehralski process. Computers and Chemical Engineering, 2017, 104, 353-365.	2.0	15
30	Constructive Solution of Inverse Parametric Linear/Quadratic Programming Problems. Journal of Optimization Theory and Applications, 2017, 172, 623-648.	0.8	15
31	Finite Control Set Model Predictive Control of a shunt active power filter. , 2013, , .		14
32	Truncated step response models for model predictive control. Journal of Process Control, 1993, 3, 67-73.	1.7	13
33	Improved vertex control for time-varying and uncertain linear discrete-time systems with control and state constraints. , 2011, , .		13
34	Control design for discrete-time bilinear systems using the scalarized Schur complement. International Journal of Robust and Nonlinear Control, 2017, 27, 4492-4506.	2.1	13
35	Handling state and output constraints in MPC using time-dependent weights. , 2001, , .		12
36	On the lifting problems and their connections with piecewise affine control law design. , 2014, , .		12

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37	Explicit robustness and fragility margins for linear discrete systems with piecewise affine control law. <i>Automatica</i> , 2016, 68, 334-343.	3.0	12
38	Diagnosis of plant-wide oscillations by combining multivariate empirical mode decomposition and delay vector variance. <i>Journal of Process Control</i> , 2019, 83, 177-186.	1.7	12
39	iecewise quadratic Lyapunov functions for stability verification of approximate explicit MPC. <i>Modeling, Identification and Control</i> , 2010, 31, 45-53.	0.6	12
40	A PROCEDURE FOR CONTROLLABILITY ANALYSIS. , 1992, , 127-132.		11
41	Interaction between Control and State Estimation in Nonlinear MPC. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2004, 37, 119-124.	0.4	11
42	Low Complexity Constraint Control Using Contractive Sets. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2014, 47, 2933-2938.	0.4	11
43	Unscented Kalman Filter state and parameter estimation in a photobioreactor for microalgae production. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2009, 42, 804-809.	0.4	10
44	Feedforward for stabilization in the presence of constraints. <i>Journal of Process Control</i> , 2012, 22, 659-665.	1.7	10
45	Merging physical experiments back into the learning arena. , 2000, , .		9
46	Estimating Alumina Concentration Distribution in Aluminium Electrolysis Cells. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2001, 34, 303-308.	0.4	9
47	DETECTING ABNORMAL FEED RATE IN ALUMINIUM ELECTROLYSIS USING EXTENDED KALMAN FILTER. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2005, 38, 85-90.	0.4	9
48	Detection of abnormal alumina feed rate in aluminium electrolysis cells using state and parameter estimation. <i>Computer Aided Chemical Engineering</i> , 2006, 21, 1557-1562.	0.3	9
49	Directional leakage and parameter drift. <i>International Journal of Adaptive Control and Signal Processing</i> , 2006, 20, 27-39.	2.3	9
50	An interpolation approach for robust constrained output feedback. , 2011, , .		9
51	A patchy approximation of explicit model predictive control. <i>International Journal of Control</i> , 2012, 85, 1929-1941.	1.2	9
52	Voronoi-Based Deployment of Multi-Agent Systems. , 2018, , .		9
53	A Procedure for Controllability Analysis. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 1992, 25, 127-132.	0.4	8
54	Persistently Exciting Model Predictive Control for SISO systems. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2012, 45, 448-453.	0.4	8

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55	Control design and analysis for discrete time bilinear systems using Sum of Squares methods. , 2014, , .		8
56	Explicit Model Predictive Controller Design for Thickness and Tension Control in a Cold Rolling Mill. IFAC-PapersOnLine, 2016, 49, 126-131.	0.5	8
57	Linear and Nonlinear State Estimation in the Czochralski Process*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 523-528.	0.4	7
58	State Estimation in Nonlinear Model Predictive Control, Unscented Kalman Filter Advantages. Lecture Notes in Control and Information Sciences, 2009, , 305-313.	0.6	7
59	On the Computation of Disturbance Rejection Measures. Industrial & Engineering Chemistry Research, 2003, 42, 2183-2188.	1.8	6
60	Verifying stability of approximate explicit MPC. , 2009, , .		6
61	Explicit robustness margins for discrete-time linear systems with PWA control. , 2013, , .		6
62	Nonlinear State Estimation in the Czochralski Process. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 4891-4896.	0.4	6
63	Explicit improved vertex control for uncertain, time-varying linear discrete-time systems with state and control constraints. International Journal of Robust and Nonlinear Control, 2016, 26, 2652-2667.	2.1	6
64	Fully Inverse Parametric Linear/Quadratic Programming Problems via Convex Liftings. Lecture Notes in Control and Information Sciences, 2015, , 27-47.	0.6	6
65	Handling State and Output Constraints in MPC Using Time-dependent Weights. Modeling, Identification and Control, 2004, 25, 67-84.	0.6	6
66	Simultaneous input & state estimation, singular filtering and stability. Automatica, 2022, 137, 110017.	3.0	6
67	Model requirement for control design of an LNG process. Computer Aided Chemical Engineering, 2007, 24, 533-538.	0.3	5
68	On the construction of invariant sets for piecewise affine systems using the transition graph. , 2009, , .		5
69	Complexity reduction in motion cueing algorithm for the ULTIMATE driving simulator. IFAC-PapersOnLine, 2017, 50, 10729-10734.	0.5	5
70	Hierarchical Decentralized State Estimation with Unknown Correlation for Multiple and Partially Overlapping State Vectors. , 2018, , .		5
71	Low complexity constrained control using higher degree Lyapunov functions. Automatica, 2018, 98, 215-222.	3.0	5
72	Disturbance and State Estimation in Partially Known Power Networks. , 2019, , .		5

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73	Interaction between control and estimation in nonlinear MPC. Modeling, Identification and Control, 2005, 26, 165-174.	0.6	5
74	Controllability Analysis for Unstable Processes. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1992, 25, 49-54.	0.4	4
75	CALCULATING DYNAMIC DISTURBANCE REJECTION MEASURES. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 573-578.	0.4	4
76	Dynamic Modeling and Control structure design for a Liquefied Natural Gas Process. Proceedings of the American Control Conference, 2007, , .	0.0	4
77	Robust explicit model predictive control for linear systems via interpolation techniques. International Journal of Robust and Nonlinear Control, 2010, 20, 1166-1175.	2.1	4
78	Multi-level Programming for Designing Penalty Functions for MPC Controllers. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 6098-6103.	0.4	4
79	Numerical backstepping for diameter control of silicon ingots in the Czochralski process. , 2012, , .		4
80	An approach to design of sliding mode based generalized predictive control. , 2013, , .		4
81	Control with constraints for linear stationary systems: An interpolation approach. Automation and Remote Control, 2014, 75, 57-74.	0.4	4
82	Control of bilinear power converters using sum of squares programming. , 2015, , .		4
83	Controlled contractive sets for low-complexity constrained control. , 2016, , .		4
84	Lyapunov stability analysis and controller design for rational polynomial systems using sum of squares programming. , 2017, , .		4
85	Stability Assessment of Power Systems Based on a Robust Sum-of-Squares Optimization Approach. , 2018, , .		4
86	Limitations on control performance in the Czochralski crystal growth process using bright ring measurement as a controlled variable. IFAC-PapersOnLine, 2019, 52, 129-134.	0.5	4
87	Accounting for dynamics in self-optimizing control. Journal of Process Control, 2019, 76, 15-26.	1.7	4
88	Tube Model Predictive Control with an Auxiliary Sliding Mode Controller. Modeling, Identification and Control, 2016, 37, 181-193.	0.6	4
89	Feedforward for stabilization. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 602-606.	0.4	3
90	Effect of data compression on controller performance monitoring. , 2011, , .		3

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91	Improved vertex control for a ball and plate system. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 400-405.	0.4	3
92	Predictive control of converter switches in a multi-terminal HVDC system. , 2013, , .		3
93	Adaptive nonlinear control of the czochralski process via integration of second order sliding mode and iterative learning control. , 2017, , .		3
94	RPI Approximations of the mRPI Set Characterizing Linear Dynamics with Zonotopic Disturbances. Lecture Notes in Control and Information Sciences, 2015, , 361-377.	0.6	3
95	Robust Explicit Moving Horizon Control and Estimation: A Batch Polymerization Case Study. Modeling, Identification and Control, 2009, 30, 17-25.	0.6	3
96	Parameter-dependent PWQ Lyapunov function stability criteria for uncertain piecewise linear systems. Modeling, Identification and Control, 2018, 39, 15-21.	0.6	3
97	Modified Reduced Indirect Finite Control Set Model Predictive Control of Modular Multilevel Converters. , 2020, , .		3
98	Bisection Algorithm based Indirect Finite Control Set Model Predictive Control for Modular Multilevel Converters. , 2021, , .		3
99	On the Computation of Disturbance Rejection Measures. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 63-68.	0.4	2
100	Explicit moving horizon control and estimation: A batch polymerization case study. , 2009, , .		2
101	Patchy approximate explicit model predictive control. , 2010, , .		2
102	Robust output feedback time optimal decomposed controllers for linear systems via moving horizon estimation. Nonlinear Analysis: Hybrid Systems, 2010, 4, 334-344.	2.1	2
103	Constrained interpolation-based control for polytopic uncertain systems. , 2011, , .		2
104	Explicit invariant approximation of the mRPI set for LTI dynamics with zonotopic disturbances. , 2013, , .		2
105	Robust optimization-based control of constrained linear discrete time systems with bounded disturbances. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 917-922.	0.4	2
106	A bilevel optimization approach for D-invariant set design**The research leading to these results has benefited from the financial support of the European Unionâ€™s 7th Framework Programme under EC-GA No. 607957 TEMPO - Training in Embedded Model Predictive Control and Optimization. IFAC-PapersOnLine, 2016, 49, 235-240.	0.5	2
107	Lyapunov-based proportional-integral controller design with guaranteed region of convergence for dc-dc power converters. , 2017, , .		2
108	Tube model predictive control based on Laguerre functions with an auxiliary sliding mode controller. , 2017, , .		2

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109	On the impact of additive disturbances on Auto-Steering Systems. IFAC-PapersOnLine, 2017, 50, 11889-11895.	0.5	2
110	A Delay Vector Variance based Approach for Detecting and Isolating the Non-linearity Induced Oscillations in Control Loops * **Financial support to the first author from Siemens AS, Norway, is gratefully acknowledged.. IFAC-PapersOnLine, 2017, 50, 7975-7980.	0.5	2
111	Convergent cross mapping (CCM) based approach for isolating the source of plant-wide disturbances. , 2017, , .		2
112	A Covariance Consistent Data Fusion method for Power Networks with Multirate Sensors. , 2020, , .		2
113	Inverse response behaviour in the bright ring radius measurement of the Czochralski process I: Investigation. Journal of Crystal Growth, 2021, 568-569, 126039.	0.7	2
114	Design of parallel compensator and stabilizing controller to mitigate non-minimum phase behaviour of the Czochralski Process. IFAC-PapersOnLine, 2020, 53, 11710-11715.	0.5	2
115	Model Predictive Control of a Crude Oil Distillation Column. Computers and Chemical Engineering, 1997, 21, S893-S897.	2.0	2
116	Model predictive control of a crude oil distillation column. Modeling, Identification and Control, 1999, 20, 75-81.	0.6	2
117	On further optimizing prediction dynamics for robust model predictive control. , 2008, , .		1
118	Controlled Variables Selection for Liquefied Natural Gas Plant. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 13913-13918.	0.4	1
119	Maximal robust feasible sets for constrained linear systems controlled by piecewise affine feedback laws. , 2009, , .		1
120	Interpolation based control for constrained linear time-varying or uncertain systems in the presence of disturbances. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 169-174.	0.4	1
121	Some remarks upon the characteristics of the explicit representation of the MPC problem. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 126-131.	0.4	1
122	Efficient solution of a qp optimization problem with zonotopic constraints. , 2012, , .		1
123	An inverse optimality argument to improve robustness in constrained control. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 1631-1636.	0.4	1
124	A scheme for optimal coordination of reactive-power reserves in a large power system. , 2015, , .		1
125	Explicit robustness margin for contractive piecewise affine control laws. , 2016, , .		1
126	Lyapunov-based robust controller design for single-inductor dual-output buck converters using sum of squares programming. , 2017, , .		1



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127	An iterative LMI approach to controller design and measurement selection in self-optimizing control. , 2017, , .		1
128	Robustness Issues in Control of Bilinear Discrete-Time Systemsâ€”Applied to the Control of Power Converters. Lecture Notes in Control and Information Sciences, 2015, , 301-318.	0.6	1
129	Combination of Backstepping and Reduced Indirect FCS-MPC for Modular Multilevel Converters. , 2021, , .		1
130	Optimal Sensor Placement for Partially Known Power System Dynamic Estimation. , 2021, , .		1
131	Non-Linear Model Predictive Control for Modular Multilevel Converters. , 2022, , .		1
132	SVD controllers for $H_2$ -, $H_\infty$ -, and $H_4$ -optimal control. , 0, , .		0
133	Metrics Over the Class of Polyhedra and Several Correspondences in Constrained Control. , 2007, , .		0
134	Constrained control for linear time-varying systems in the presence of disturbances. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 923-928.	0.4	0
135	A linear MPC algorithm for embedded systems with computational complexity guarantees. , 2014, , .		0
136	Two-tier approach for the design of multiple power oscillation damping controllers. , 2016, , .		0
137	Controller Design and Sparse Measurement Selection in Self-optimizing control. IFAC-PapersOnLine, 2018, 51, 458-463.	0.5	0
138	An ADMM algorithm for incorporating structural constraints in self-optimizing control. IFAC-PapersOnLine, 2019, 52, 64-69.	0.5	0
139	Inverse response behaviour in the bright ring radius measurement of the Czochralski process II: Mitigation by control. Journal of Crystal Growth, 2021, 568-569, 126013.	0.7	0
140	Explicit model predictive control via Delaunay tessellations. Journal European Des Systemes Automatises, 2012, 46, 267-290.	0.3	0
141	Non-uniqueness of robust $H_\infty$ decentralized PI-control. , 1991, , .		0
142	IMPACT OF MODEL UNCERTAINTY ON CONTROL STRUCTURE SELECTION FOR THE FLUID CATALYTIC CRACKING PROCESS. , 1992, , 215-220.		0
143	Robust Control of Systems Consisting of Symmetrically Interconnected Subsystems. , 1992, , .		0
144	Distributed $H_\infty$ Filtering for Linear and Nonlinear Systems. , 2021, , .		0