

Slovenská technická univerzita v Bratislave
Fakulta chemickej a potravinárskej technológie
Ústav informatizácie, automatizácie a matematiky

PREHĽAD PUBLIKAČNEJ ČINNOSTI

doc. Ing. Juraj Oravec, PhD.

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Vysokoškolské učebnice (3)

ACB – Vysokoškolské učebnice vydané v domácich vydavateľstvách (3)

1. Oravec, J. [100%]: Riadenie revízií s Git, Vydavateľstvo FCHPT, FCHPT STU, Radlinského 9, 812 37 Bratislava, ISBN: 978-80-8208-100-1, 2023.
2. Mikleš, J. [70%] – Čirka, L. [10%] – Oravec, J. [10%] – Fikar, M. [10%]: Návrh H2 a Hinf riadenia s využitím Ljapunovových funkcií, Vydavateľstvo FCHPT, FCHPT STU, Radlinského 9, 812 37 Bratislava, ISBN: 978-80-8208-089-9, 2022.
3. Oravec, J. [50%] – Bakošová, M. [50%]: Zbierka príkladov z robustného riadenia, Vydavateľstvo FCHPT, FCHPT STU, Radlinského 9, 812 37 Bratislava, ISBN: 978-80-8208-025-7, 2019.

Článok v časopise registrovanom v CC (21)

ADC – Vedecké práce v zahraničných karentovaných časopisoch (19)

4. Galčíková, L. [60%] – Oravec, J. [40%]: *Self-tunable approximated explicit MPC: Heat exchanger implementation and analysis*. Journal of Process Control, zv. 140, str. 103260, ISSN: 0959-1524, 2024.
(IF = 3,3)
5. Holaza, J. [55%] – Bakaráč, P. [10%] – Oravec, J. [35%]: *Revisiting Reachability-Driven Explicit MPC for Embedded Control*. European Journal of Control, zv. 78, str. 101019, ISSN: 0947-3580, 2024.
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6. Dyrská, R. [30%] – Horváthová, M. [30%] – Bakaráč, P. [20%] – Mönnigmann, M. [5%] – Oravec, J. [15%]: *Heat exchanger control using model predictive control with constraint removal*. Applied Thermal Engineering, zv. 227, ISSN: 1359-4311, 2023.
(IF = 6,1)
7. Oravec, J. [60%] – Klaučo, M. [40%]: *Real-time tunable approximated explicit MPC*. Automatica, zv. 142, str. 110315, ISSN: 1873-2836, 2022.
(IF = 4,8)
8. Bakaráč, P. [25%] – Horváthová, M. [25%] – Galčíková, L. [25%] – Oravec, J. [20%] – Bakošová, M. [5%]: *Approximated MPC for embedded hardware: Recursive random shooting approach*. Computers & Chemical Engineering, zv. 165, ISSN: 0098-1354, 2022.
(IF = 3,9)
9. Galčíková, L. [60%] – Oravec, J. [40%]: *Fixed complexity solution of partial explicit MPC*. Computers & Chemical Engineering, zv. 157, str. 107606, ISSN: 0098-1354, 2022.
(IF = 3,9)
10. Jiang, Y. [25%] – Oravec, J. [25%] – Houska, B. [25%] – Kvasnica, M. [25%]: *Parallel MPC for Linear Systems with Input Constraints*. IEEE Transactions on Automatic Control, č. 7, zv. 66, str. 3401–3408, ISSN: 0018-9286, 2021.
(IF = 6,2)
11. Oravec, J. [40%] – Horváthová, M. [40%] – Bakošová, M. [20%]: *Multivariable Robust MPC Design for Neutralization Plant: Experimental Analysis*. European Journal of Control, zv. 58, str. 289–300, ISSN: 0959-1524, 2021. **(IF = 2,5)**

12. Drgoňa, J. [20%] – Bastida, J. A. [10%] – Figueroa, I. C. [10%] – Blum, D. [10%] – Arendt, K. [10%] – Kim, D. [10%] – Ollé, E. P. [5%] – Oravec, J. [10%] – Wetter, M. [5%] – Vrabie, D. [5%] – Helsen, L. [5%]: *All you need to know about model predictive control for buildings*. *Annual Reviews in Control*, zv. 50, str. 190–232, ISSN: 1367-5788, 2020.
(IF = 7,3)
13. Oravec, J. [34%] – Horváthová, M. [33%] – Bakošová, M. [33%]: *Energy efficient convex-lifting-based robust control of a heat exchanger*. *Energy*, č. 201, str. 117566, ISSN: 0360-5442, 2020.
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17. Vasičkaninová, A. [40%] – Bakošová, M. [30%] – Čirka, Ľ. [10%] – Kalúz, M. [10%] – Oravec, J. [10%]: *Robust Controller Design for a Laboratory Heat Exchanger*. *Applied Thermal Engineering*, zv. 128, str. 1297–1309, ISSN: 1359-4311, 2017.
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(IF = 3,113)
19. Oravec, J. [30%] – Klaučo, M. [30%] – Kvasnica, M. [30%] – Löfberg, J. [10%]: *Computationally Tractable Formulations for Optimal Path Planning with Interception of Targets' Neighborhoods*. *Journal of Guidance, Control, and Dynamics*, č. 5, zv. 40, str. 1221–1230, ISSN: 0731-5090, 2017.
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21. Bakošová, M. [50%] – Oravec, J. [50%]: *Robust Model Predictive Control for Heat Exchanger Network*. *Applied Thermal Engineering*, č. 1, zv. 73, str. 924–930, ISSN: 1359-4311, 2014.
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22. Bakošová, M. [40%] – Mészáros, A. [10%] – Klemeš, J. [10%] – Oravec, J. [40%]: Robust and Optimal Control Approach for Exothermic Reactor Stabilization. Theoretical Foundations of Chemical Engineering, č. 46, str. 740–746, ISSN: 0040-5795, 2012.
(IF = 0,491)

ADD – Vedecké práce v domácich karentovaných časopisoch (2)

23. Bakošová, M. [45%] – Oravec, J. [45%] – Matejičková, K. [10%]: Model Predictive Control-Based Robust Stabilization of a Chemical Reactor. Chemical Papers, č. 9, zv. 67, str. 1146–1156, ISSN: 0366-6352, 2013.
(IF = 1,193)
24. Oravec, J. [50%] – Bakošová, M. [50%]: Robust Model-Based Predictive Control of Exothermic Chemical Reactor. Chemical Papers, č. 7, zv. 69, ISSN: 0366-6352, 2015.
(IF = 1,326)

Článok v inom recenzovanom časopise (20)

ADE – Vedecké práce v ostatných zahraničných časopisoch (12)

25. Bakošová, M. [40%] – Mészáros, A. [10%] – Klemeš, J. [10%] – Oravec, J. [40%]: Comparison of Robust and Optimal Approach to Stabilization of CSTRs. Chemical Engineering Transactions, zv. 25, str. 99–104, ISBN: 978-88-95608-16-7, ISSN: 1974-9791, 2011.
26. Bakošová, M. [50%] – Oravec, J. [50%]: Robust Model Predictive Control of Heat Exchangers. Chemical Engineering Transactions, zv. 29, str. 1465–1470, ISSN: 1974-9791, 2012.
27. Bakošová, M. [50%] – Oravec, J. [50%]: Robust Model Predictive Control of Heat Exchanger Network. Chemical Engineering Transactions, zv. 35, str. 241–246, ISBN: 978-88-95608-26-6, ISSN: 1974-9791, 2013.
28. Oravec, J. [45%] – Bakošová, M. [45%] – Mészáros, A. [10%]: Comparison of Robust Model-based Control Strategies Used for a Heat Exchanger Network. Chemical Engineering Transactions, zv. 45, str. 397–402, ISBN: 978-88-95608-36-5, ISSN: 2283-9216, 2015.
29. Oravec, J. [45%] – Bakošová, M. [45%] – Mészáros, A. [10%]: Robust Model Predictive Control of Heat Exchangers in Series. Chemical Engineering Transactions, zv. 52, str. 253–258, ISBN: 978-88-95608-42-6, ISSN: 2283-9216, 2016.
30. Bakošová, M. [35%] – Oravec, J. [20%] – Vasičkaninová, A. [20%] – Mészáros, A. [5%] – Valiauga, P. [20%]: Advanced Control of a Biochemical Reactor for Yeast Fermentation. Chemical Engineering Transactions, zv. 81, str. 769–774, ISSN: 2283-9216, 2019.
31. Vasičkaninová, A. [45%] – Bakošová, M. [25%] – Oravec, J. [25%] – Mészáros, A. [5%]: Control of Heat Exchangers Using Complex Control Structures with Neural Network Predictive Controllers. Chemical Engineering Transactions, zv. 81, str. 361–366, ISSN: 2283-9216, 2019.
32. Oravec, J. [24%] – Bakošová, M. [23%] – Horváthová, M. [23%] – Galčíková, L. [10%] – Slávik, M. [10%] – Vasičkaninová, A. [5%] – Mészáros, A. [5%]: Convex-lifting-based Robust Control of a Laboratory Plate Heat Exchanger. Chemical Engineering Transactions, zv. 81, str. 733–738, ISSN: 2283-9216, 2019.

33. Vasičkaninová, A. [50%] – Bakošová, M. [30%] – Oravec, J. [10%] – Horváthová, M. [10%]: Efficient Fuzzy Control of a Biochemical Reactor. *Chemical Engineering Transactions*, zv. 81, str. 85–90, , ISSN: 2283-9216, 2020.
34. Horváthová, M. [50%] – Oravec, J. [25%] – Bakošová, M. [25%]: Efficient Convex-Lifting-Based Robust Control of a Chemical Reactor. *Chemical Engineering Transactions*, zv. 81, str. 865–870, ISSN: 2283-9216, 2020.
35. Horváthová, M. [60%] – Oravec, J. [20%] – Bakošová, M. [10%] – Mészáros, A. [10%]: Carbon Footprint Analysis of a Laboratory Plate Heat Exchanger Control. *Chemical Engineering Transactions*, zv. 88, str. 847–852, ISSN: 2283-9216, 2021.
36. Galčíková, L. [50%] – Horváthová, M. [20%] – Oravec, J. [20%] – Bakošová, M. [10%]: Self-Tunable Approximated Explicit Model Predictive Control of a Heat Exchanger. *Chemical Engineering Transactions*, zv. 94, č. 94, str. 1015–1020, ISSN: 2283-9216, 2022.

ADF – Vedecké práce v ostatných domácich časopisoch (3)

37. Oravec, J. [50%] – Bakošová, M. [50%]: PIDTOOL 2.0 – Software for Step-Response-Based Identification and PID Controller Tuning. *AT&P Journal Plus*, č. 2, str. 61–66, ISSN: 1336-5010, 2011.
38. Oravec, J. [50%] – Bakošová, M. [50%]: Robust Constrained MPC Stabilization of a CSTR. *Acta Chimica Slovaca*, č. 2, zv. 5, str. 153–158, ISSN: 1337-978X, 2012.
39. Bakošová, M. [50%] – Oravec, J. [50%]: Robust MPC of an Unstable Chemical Reactor Using the Nominal System Optimization. *Acta Chimica Slovaca*, č. 2, zv. 7, str. 87–93, ISSN: 1337-978X, 2014.

ADM – Vedecké práce v zahraničných časopisoch registrovaných v databázach Web of Science alebo SCOPUS (5)

40. Oravec, J. [25%] – Trafczynski, M. [25%] – Bakošová, M. [20%] – Markowski, M. [10%] – Mészáros, A. [10%] – Urbaniec, K. [10%]: Robust Model Predictive Control of Heat Exchanger Network in the Presence of Fouling. *Chemical Engineering Transactions*, zv. 61, str. 334–342, ISBN: 978-88-95608-51-8, ISSN: 2283-9216, 2017.
41. Bakošová, M. [30%] – Oravec, J. [30%] – Vasičkaninová, A. [30%] – Mészáros, A. [10%]: Neural-Network-Based and Robust Model-Based Predictive Control of a Tubular Heat Exchanger. *Chemical Engineering Transactions*, zv. 61, str. 301–306, ISBN: 978-88-95608-51-8, ISSN: 2283-9216, 2017.
42. Vasičkaninová, A. [50%] – Bakošová, M. [30%] – Oravec, J. [10%] – Mészáros, A. [10%]: Neural Network Predictive Controller Design for Counter-Current Tubular Heat Exchangers in Series. *Chemical Engineering Transactions*, zv. 61, str. 121-126, ISBN: 978-88-95608-51-8, ISSN: 2283-9216, 2017.
43. Oravec, J. [50%] – Bakošová, M. [30%] – Vasičkaninová, A. [10%] – Mészáros, A. [10%]: Robust Model Predictive Control of a Plate Heat Exchanger. *Chemical Engineering Transactions*, zv. 70, str. 25–30, ISBN: 978-88-95608-51-8, ISSN: 2283-9216, 2018.
44. Vasičkaninová, A. [50%] – Bakošová, M. [30%] – Oravec, J. [10%] – Mészáros, A. [10%]: Gain - Scheduled Control of Counter - Current Shell - and - Tube Heat Exchangers in Series. *Chemical Engineering Transactions*, zv. 70, str. 1399–1404, ISBN: 978-88-95608-51-8, ISSN: 2283-9216, 2018.

Publikácia v zborníku vo svetovom jazyku (60)

AED – Vedecké práce v domácich recenzovaných vedeckých zborníkoch, monografiách (1)

45. Oravec, J. [60%] – Bakošová, M. [40%]: PIDDESIGN– Software for System Identification and PID Controller Design, V Selected Topics in Modelling and Control, Editor(i): Mikleš, J., Veselý, V., Slovak University of Technology Press, č. 8, str. 88–93, ISBN: 978--80--227--3840-8, 2012.

AFC – Publikované príspevky na zahraničných vedeckých konferenciách (27)

46. Bakošová, M. [30%] – Oravec, J. [60%] – Čirka, L. [10%]: Software for PID controller tuning. V Technical Computing Prague 2009, Humusoft, s.r.o., str. 15-1–15-8, ISBN: 978-80-7080-733-0, 2009.
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49. Oravec, J. [50%] – Bakošová, M. [50%]: PIDDESIGN - Software for PID Control Education. Editor(i): R. Vilanova, A. Visioli, V IFAC Conference on Advances in PID Control, Brescia, Italy, 2012.
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54. Oravec, J. [35%] – Klaučo, M. [30%] – Kvasnica, M. [30%] – Löfberg, J. [5%]: Optimal Vehicle Routing with Interception of Targets' Neighbourhoods. V European Control Conference 2015, Linz, Austria, str. 2538–2543, 2015.
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64. Oravec, J. [40%] – Bakošová, M. [40%] – Hanulová, L. [20%]: Experimental Investigation of Robust MPC Design with Integral Action for a Continuous Stirred Tank Reactor. V 57th IEEE Conference on Decision and Control, Miami, Florida, USA, zv. 57, str. 2611–2616, ISBN: 978-1-5386-1394-8, 2018.
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66. Holaza, J. [30%] – Oravec, J. [30%] – Kvasnica, M. [10%] – Dyrská, R. [10%] – Mönnigmann, M. [10%] – Fikar, M. [10%]: *Accelerating Explicit Model Predictive Control by Constraint Sorting*. Editor(i): Rolf Findeisen, Sandra Hirche, Klaus Janschek, Martin Mönnigmann, V *Preprints of the 21st IFAC World Congress (Virtual)*, Berlin, Germany, July 12-17, 2020, zv. 21, str. 11520–11525, 2020.
67. Horváthová, M. [60%] – Oravec, J. [30%] – Bakošová, M. [10%]: *Real-Time Convex-lifting-based Robust Control Using Approximated Control Law*. V *59th IEEE Conference on Decision and Control*, Jeju Island, Republic of Korea, zv. 59, str. 2160–2165, 2020.
68. Oravec, J. [25%] – Bakaráč, P. [25%] – Pavlovičová, E. [25%] – Fikar, M. [25%]: *Smart Eco Greenhouse VESNA*. V *IFAC World Congress 2023*, Yokohama, Japan, str. 10295–10300, 2023.
69. Horváthová, M. [50%] – Galčíková, L. [20%] – Klaučo, M. [10%] – Oravec, J. [20%]: *Real-Time Optimisation-Based Robust Control: Heat Exchanger Comparative Analysis*. V *62nd IEEE Conference on Decision and Control*, IEEE, Singapore, str. 6535–6540, 2023.
70. Holaza, J. [30%] – Galčíková, L. [30%] – Oravec, J. [30%] – Kvasnica, M. [10%]: *A software package for MPC design and tuning: MPT+*. V *62nd IEEE Conference on Decision and Control*, IEEE, Singapore, str. 5688–5695, 2023.
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72. Fedorová, K. [40%] – Jiang, Y. [25%] – Oravec, J. [25%] – Jones, C. [5%] – Kvasnica, M. [5%]: *A Generalized Stopping Criterion for Real-Time MPC with Guaranteed Stability*. V *62nd IEEE Conference on Decision and Control*, IEEE, Singapore, str. 4705–4710, 2023.

AFD – Publikované príspevky na domácich vedeckých konferenciách (24)

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Skriptá, učebné texty a kapitoly v učebniciach a učebných textoch (9)

BCI – Skriptá a učebné texty (1)

105. Bakošová, M. [34%] – Závacká, J. [33%] – Oravec, J. [33%]: Automatizácia – neoddeliteľná súčasť výrobných procesov v chemickom a potravinárskom priemysle a bežného života, V Chémia pre život, Slovenská chemická knižnica FChPT STU v Bratislave, Bratislava, str. 90–101, ISBN: 978-80-89597-08-6, 2013.

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BEF – Odborné práce v domácich zborníkoch (konferenčných aj nekonferenčných) (2)

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