

Prehľad citácií vedeckých prác (bez autocitácií a citácií spoluautorov)**Počet: 371 (všetky zahraničné SCI citácie)**

R. Paulen [40%] – M. Fikar [30%] – M. A. Latifi [30%]: Dynamic Optimization of a Hybrid System: Emulsion Polymerization Reaction. *Journal of Cybernetics and Informatics*, vol. 10, pp. 31–40, 2010.

1. Gil, I.D. – Vargas, J.C. – Corriou, J.P.: Optimal nonlinear control of an industrial emulsion polymerization reactor. *Chemical Engineering Research and Design*, no. Supplment C, vol. 111, pp. 63-82, 2016.

R. Paulen [40%] – M. Fikar [30%] – M. A. Latifi [30%]: Dynamic Optimization of a Polymerization Reactor. In *18th Mediterranean Conference on Control and Automation*, Marrakech, Morocco, pp. 733–738, 2010.

2. Herrera, Andres A. – Raba, Bibiana – Rodriguez, Gerardo – Gil, Ivan D.: Dynamic optimization and experimental validation of a pilot scale emulsion polymerization reactor. *Chemical Engineering and Processing-process Intensification*, vol. 144, pp. UNSP 107635, 2019.

R. Paulen [25%] – G. Foley [25%] – M. Fikar [25%] – Z. Kovacs [15%] – P. Czermak [10%]: Minimizing the process time for ultrafiltration/diafiltration under gel polarization conditions. *Journal of Membrane Science*, no. 1-2, vol. 380, pp. 148–154, 2011.

3. Qi, Ting, Chen, Xianfu, Fan, Yiqun, Zhong, Jing: Ceramic membrane technology for the separation and purification of bioactive compounds: A critical review of applications, diafiltration modeling, and fouling prevention. *Separation and Purification Technology*, vol. 361, 2025.
4. Schmitz, Fabian – Kruse, Thomas – Minceva, Mirjana – Kampmann, Markus: Integrated double flow-through purification of monoclonal antibodies using membrane adsorbers and single-pass tangential flow filtration. *Biochemical Engineering Journal*, vol. 195, pp. 108913, 2023.
5. Silveira, Nauro – Silvestre, Wendel Paulo – Baldasso, Camila – Medeiros Cardozo, Nilo Sergio – Tessaro, Isabel Cristina – Vanin, Ana Paula: Ultrafiltration and diafiltration modeling for improved whey protein purification. *Separation Science and Technology*, 2022.
6. Qi, T. – Yang, D. – Chen, X. – Qiu, M. – Fan, Y.: Rapid removal of lactose for low-lactose milk by ceramic membranes. *Separation and Purification Technology*, vol. 289, pp. 120601, 2022.
7. Rathore, A.S. – Thori, S. – Thakur, G.: Implementing PAT for single-pass tangential flow ultrafiltration for continuous manufacturing of monoclonal antibodies. *Journal of Membrane Science*, vol. 613, pp. 118492, 2020.
8. Qi, T. – Da, X. – Zhang, Y. – Chen, X. – Cui, Z. – Qiu, M. – Fan, Y.: Modeling and optimal operation of intermittent feed diafiltration for refining oligodextran using nanoporous ceramic membranes. *Separation and Purification Technology*, vol. 253, pp. 117491, 2020.
9. Wen-qiong, W. – Yun-chao, W. – Xiao-feng, Z. – Rui-xia, G. – Mao-lin, L.: Whey protein membrane processing methods and membrane fouling mechanism analysis. *Food Chemistry*, vol. 289, pp. 468-481, 2019.
10. Pirrung, S.M. – Berends, C. – Backx, A.H. – van Beckhoven, R.F.W.C. – Eppink, M.H.M. – Ottens, M.: Model-based optimization of integrated purification sequences for biopharmaceuticals. *Chemical Engineering Science: X*, no. 100025, vol. 3, 2019.

11. Zhu, Yong – Bai, Zhishan – Luo, Wenqiang – Wang, Bingjie – Zhai, Linlin: A facile ion imprinted synthesis of selective biosorbent for Cu²⁺ via microfluidic technology. *Journal of Chemical Technology and Biotechnology*, no. 8, vol. 92, pp. 2009-2022, 2017.
 12. Saltik, M. Bahadır – Ozkan, Leyla – Jacobs, Marc – van der Padt, Albert: Dynamic modeling of ultrafiltration membranes for whey separation processes. *Computers & Chemical Engineering*, vol. 99, pp. 280-295, 2017.
 13. Gautério, G. V. – Malta, D. S. – Reginatto, L. – Feltrin, A. C. P. – Garda-Buffon, J. – Kalil, S. J.: Use of partially purified peroxidase of agricultural by-product rice bran in deoxynivalenol reduction. *Journal of Chemical Technology and Biotechnology*, no. 8, vol. 92, pp. 1998-2008, 2017.
 14. Wang, L. – Wang, L. – Xing, W. – Xu, N.: Time-optimal diafiltration processes for Cephalosporin C separated from fermentation broth under constant yield and constant concentration. *Separation and Purification Technology*, vol. 122, pp. 256-261, 2014.
 15. Prudêncio, E. S. – Müller, C. M. O. – Fritzen-Freire, C. B. – Amboni, R. D. M. C. – Petrus, J. C. C.: Effect of whey nanofiltration process combined with diafiltration on the rheological and physicochemical properties of ricotta cheese. *Food Research International*, vol. 56, pp. 92-99, 2014.
 16. Field, R.: Diafiltration under condition of quasi-constant membrane surface concentration. *Journal of Membrane Science*, no. 1-2, vol. 383, pp. 301-302, 2011.
- R. Paulen [30%] – M. Fikar [30%] – Z. Kovacs [30%] – P. Czermak [10%]: Process optimization of diafiltration with time-dependent water adding for albumin production. *Chemical Engineering and Processing: Process Intensification*, no. 8, vol. 50, pp. 815–821, 2011.
17. Worsham, Robert D., Thomas, Vaughan, Farid, Suzanne S.: Impact of ethanol on continuous inline diafiltration of liposomal drug products. *Biotechnology Journal*, 2023.
 18. Briesen, H. – Kuhn, M.: Optimizing the axial resistance profile of submerged hollow fiber membranes. *Processes*, no. 1, vol. 9, pp. 1-13, 2021.
 19. Pirrung, S.M. – Berends, C. – Backx, A.H. – van Beckhoven, R.F.W.C. – Eppink, M.H.M. – Ottens, M.: Model-based optimization of integrated purification sequences for biopharmaceuticals. *Chemical Engineering Science: X*, no. 100025, vol. 3, 2019.
 20. Ambrosi, Alan – Al-Furaiji, Mustafa – McCutcheon, Jeffrey R. – Cardozo, Nilo Sergio M. – Tessaro, Isabel Cristina: Transport of Components in the Separation of Ethanol from Aqueous Dilute Solutions by Forward Osmosis. *Industrial & Engineering Chemistry Research*, no. 8, vol. 57, pp. 2967-2975, 2018.
 21. Wang, L. – Wang, L. – Xing, W. – Xu, N.: Time-optimal diafiltration processes for Cephalosporin C separated from fermentation broth under constant yield and constant concentration. *Separation and Purification Technology*, vol. 122, pp. 256-261, 2014.
 22. Wang, Longyao – Yang, Zhengdong – Wang, Lan – Zhu, Rongshun: Minimizing the operation time for continuous feed diafiltration processes under constant concentration ratio. *Desalination*, vol. 346, pp. 100-106, 2014.
 23. Foley, G.: When should batch ultrafiltration be stopped to maximise profit in the recovery of a non-rejected solute?. *Journal of Food Engineering*, vol. 153, pp. 8-11, 2014.
 24. Buonomenna, M. G.: Membrane processes for a sustainable industrial growth. *RSC Advances*, no. 17, vol. 3, pp. 5694-5740, 2013.

25. Zhao, L. – Zhao, H. – Nguyen, P. – Li, A. – Jiang, L. – Xia, Q. – Rong, Y. – Qiu, Y. – Zhou, J.: Separation performance of multi-components solution by membrane technology in continual diafiltration mode. *Desalination*, vol. 322, pp. 113-120, 2013.

R. Paulen [35%] – M. Fikar [20%] – G. Foley [20%] – Z. Kovacs [20%] – P. Czermak [5%]: Optimal feeding strategy of diafiltration buffer in batch membrane processes. *Journal of Membrane Science*, vol. 411-412, pp. 160–172, 2012.

26. Qi, Ting, Chen, Xianfu, Fan, Yiqun, Zhong, Jing: Ceramic membrane technology for the separation and purification of bioactive compounds: A critical review of applications, diafiltration modeling, and fouling prevention. *Separation and Purification Technology*, vol. 361, 2025.

27. Ruiz, M.O. – Benito-Román, Ó. – Beltrán, S. – Sanz, M.T.: Fractionation and refining of pectic oligosaccharides derived from onion skins through continuous feed diafiltration. *Journal of Membrane Science*, vol. 708, pp. 123054, 2024.

28. Hidane, Takanori – Demura, Mikihide – Morisada, Shintaro – Ohto, Keisuke – Kawakita, Hidetaka: Efficient separation of phycocyanin of *Nostoc commune* by multistep diafiltration using ultra-filtration membrane modules. *Bioprocess and Biosystems Engineering*, no. 10, vol. 46, pp. 1447 – 1456, 2023.

29. Qi, T. – Yang, D. – Chen, X. – Qiu, M. – Fan, Y.: Rapid removal of lactose for low-lactose milk by ceramic membranes. *Separation and Purification Technology*, vol. 289, pp. 120601, 2022.

30. Briesen, H. – Kuhn, M.: Optimizing the axial resistance profile of submerged hollow fiber membranes. *Processes*, no. 1, vol. 9, pp. 1-13, 2021.

31. Qi, T. – Da, X. – Zhang, Y. – Chen, X. – Cui, Z. – Qiu, M. – Fan, Y.: Modeling and optimal operation of intermittent feed diafiltration for refining oligodextran using nanoporous ceramic membranes. *Separation and Purification Technology*, vol. 253, pp. 117491, 2020.

32. Pirrung, S.M. – Berends, C. – Backx, A.H. – van Beckhoven, R.F.W.C. – Eppink, M.H.M. – Ottens, M.: Model-based optimization of integrated purification sequences for biopharmaceuticals. *Chemical Engineering Science: X*, no. 100025, vol. 3, 2019.

33. Kumar, V. – Kaistha, N.: Invariants for optimal operation of a reactor-separator-recycle process. *Journal of Process Control*, vol. 82, pp. 1-12, 2019.

34. Saltik, M. Bahadır – Ozkan, Leyla – Jacobs, Marc – van der Padt, Albert: Dynamic modeling of ultrafiltration membranes for whey separation processes. *Computers & Chemical Engineering*, vol. 99, pp. 280-295, 2017.

35. Religaa, Pawel – Kazmierczak, Bernadetta: Desalination of chromium tannery wastewater by nanofiltration with different diafiltration mode. *Desalination and Water Treatment*, vol. 64, pp. 409-413, 2017.

36. Portugal, Carla A. M.: Control of Protein-Surface Interactions and Transport Properties: Functional Membranes and Operating Conditions. *Current Organic Chemistry*, no. 17, vol. 21, pp. 1725-1739, 2017.

37. Nguyen, D. T. N. N. – Lameloise, M. -L. – Guiga, W. – Lewandowski, R. – Bouix, M. – Fargues, C.: Optimization and modeling of diafiltration process for the detoxification of ligno-cellulosic hydrolysates - Study at pre-industrial scale. *Journal of Membrane Science*, vol. 512, pp. 111-121, 2016.

38. Carrondo, M.J.T. – Mota, J.P.B. – Alves, P.M. – Silva, R.R.J.S. – Peixoto, C. – Nestola, P.: Improved virus purification processes for vaccines and gene therapy. *Biotechnology and Bioengineering*, no. 5, vol. 112, pp. 843-857, 2015.
39. Sala, L. – Gautério, G.V. – Younan, F.F. – Brandelli, A. – Moraes, C.C. – Kalil, S.J.: Integration of ultrafiltration into an aqueous two-phase system in the keratinase purification. *Process Biochemistry*, no. 11, vol. 49, pp. 2016-2024, 2014.
40. Wang, L. – Yang, Z. – Wang, L. – Zhu, R.: Minimizing the operation time for continuous feed diafiltration processes under constant concentration ratio. *Desalination*, vol. 346, pp. 100-106, 2014.
41. Buonomenna, M. G.: Membrane processes for a sustainable industrial growth. *RSC Advances*, no. 17, vol. 3, pp. 5694-5740, 2013.

R. Paulen [40%] – M. Jelemenský [30%] – M. Fikar [15%] – Z. Kovacs [15%]: Optimal balancing of temporal and buffer costs for ultrafiltration/diafiltration processes under limiting flux conditions. *Journal of Membrane Science*, vol. 444, pp. 87–95, 2013.

42. Hidane, Takanori, Miyoshi, Haruka, Demura, Mikihide, Morisada, Shintaro, Ohto, Keisuke, Kawakita, Hidetaka: Separation of C-Phycocyanin from *Spirulina* sp. using the coupled processes of an ion-exchange resin-packed column and ultrafiltration module. *Process Biochemistry*, vol. 149, pp. 260-269, 2025.
43. Mihooliya, Kanti N., Kumar, Ambrish, Heiss, Christian, Kumari, Alka, Boniche-Alfaro, Camilla, Azadi, Parastoo, Fries, Bettina C.: Evaluating size exclusion chromatography for nucleic acid removal in *Klebsiella pneumoniae* cell surface polysaccharide purification. *Carbohydrate Polymers*, vol. 358, pp. 123531, 2025.
44. Da, X. – Qi, T. – Zhang, Y. – Chen, X. – Cui, Z. – Qiu, M. – Fan, Y.: Modeling and optimal operation of intermittent feed diafiltration for refining oligodextran using nanoporous ceramic membranes. *Separation and Purification Technology*, vol. 253, pp. 117491, 2020.
45. Kumar, V. – Kaistha, N.: Invariants for optimal operation of a reactor-separator-recycle process. *Journal of Process Control*, vol. 82, pp. 1-12, 2019.
46. Chalova, V. I. – Silva, C. L. M. – Rustad, T. – Kalaydzhev, H. – Ivanova, P.: Comparative biochemical profile of protein-rich products obtained from industrial rapeseed meal. *Emirates Journal of Food and Agriculture*, no. 3, vol. 29, pp. 170-178, 2017.
47. Chaparro, L. – Castillo, S. – Vaillant, F. – Servent, A. – Dornier, M.: Effect of microfiltration and diafiltration on carotenoid and aromatic compounds of watermelon juice (*Citrullus lanatus* L.) [Efecto de la microfiltración y diafiltración en el contenido de carotenoides y compuestos aromáticos del jugo de sandía (*Citru. Bioagro*, no. 3, vol. 29, pp. 185-196, 2017.
48. Chaparro, Luis – Dhuique-Mayer, Claudie – Castillo, Soraya – Vaillant, Fabrice – Servent, Adrien – Dornier, Manuel: Concentration and purification of lycopene from watermelon juice by integrated microfiltration-based processes. *Innovative Food Science & Emerging Technologies*, no. A, vol. 37, pp. 153-160, 2016.
49. Wei, X. – Wang, S. – Shi, Y. – Xiang, H. – Chen, J.: Application of positively charged composite hollow-fiber nanofiltration membranes for dye purification. *Industrial and Engineering Chemistry Research*, no. 36, vol. 53, pp. 14036-14045, 2014.
50. Foley, G.: When should batch ultrafiltration be stopped to maximise profit in the recovery of a non-rejected solute?. *Journal of Food Engineering*, vol. 153, pp. 8-11, 2014.

M. Jelemenský [40%] – R. Paulen [40%] – M. Fikar [15%] – Z. Kovacs [5%]: Economically Optimal Control of Batch Diafiltration Processes. In *IEEE Multi-Conference on Systems and Control*, Hyderabad, India, pp. 734–739, 2013.

51. Araromi, Dauda Olurotimi – Ajala, Olajide Olukayode – Sulayman, Aminah Abolore: Development of fuzzy-based autoregressive integrated moving average exogenous input model for filtration process. *International Journal of Fuzzy Computation and Modelling*, no. 1, vol. 3, pp. 1–15, 2020.

R. Paulen [50%] – M. Villanueva [10%] – B. Chachuat [40%]: Optimization-Based Domain Reduction in Guaranteed Parameter Estimation of Nonlinear Dynamic Systems. Editor(s): Tarbouriech, Sophie; Krstic, Miroslav, In *9th IFAC Symposium on Nonlinear Control Systems*, International Federation of Automatic Control, pp. 564–569, 2013.

52. Shaqfa, M. – Beyer, K.: A virtual microstructure generator for 3D stone masonry walls. *European Journal of Mechanics, A/Solids*, vol. 96, pp. 104656, 2022.

53. Shaqfa, M. – Beyer, K.: Pareto-like sequential sampling heuristic for global optimisation. *Soft Computing*, no. 14, vol. 25, pp. 9077-9096, 2021.

R. Paulen [45%] – M. Villanueva [20%] – M. Fikar [10%] – B. Chachuat [25%]: Guaranteed Parameter Estimation in Nonlinear Dynamic Systems using Improved Bounding Techniques. In *Proceedings of the 12th European Control Conference*, Zurich, Switzerland, pp. 4514–4519, 2013.

54. Ye, J. – Scott, J.K.: Modification and improved implementation of the RPD method for computing state relaxations for global dynamic optimization. *Journal of Global Optimization*, no. 4, vol. 89, pp. 833-861, 2024.

55. Biegler, L. T. – Thierry, D. – Rodriguez, J. S. – Short, M. – Chen, W. – García-Muñoz, S. – Schenk, C.: Introducing KIPET: A novel open-source software package for kinetic parameter estimation from experimental datasets including spectra. *Computers and Chemical Engineering*, vol. 134, 2020.

56. Hille, R. – Budman, H. M.: Simultaneous identification and optimization of biochemical processes under model-plant mismatch using output uncertainty bounds. *Computers and Chemical Engineering*, vol. 113, pp. 125-138, 2018.

57. Krebs, Stefan – Schnurr, Christoph – Pfeifer, Martin – Weigold, Joerg – Hohmann, Soeren: Reduced-order hybrid interval observer for verified state estimation of an induction machine. *Control Engineering Practice*, vol. 57, pp. 157-168, 2016.

58. Steimel, Jochen – Engell, Sebastian: Optimization-Based Support for Process Design under Uncertainty: A Case Study. *Aiche Journal*, no. 9, vol. 62, pp. 3404-3419, 2016.

R. Paulen [70%] – B. Benyahia [10%] – M. A. Latifi [10%] – M. Fikar [10%]: Analysis of optimal operation of a fed-batch emulsion copolymerization reactor used for production of particles with core-shell morphology. *Computers & Chemical Engineering*, vol. 66, pp. 233–243, 2014.

59. Yu, Jie, Ma, Qingying, Fang, Xiaoyun, Li, Yanfei, Zhao, Linyi, Lu, Quanfang: Synthesis of styrene-acrylate emulsion by glow discharge electrolysis plasma and its application for the conservation of simulated disrupting murals in Dunhuang Mogao grottoes. *Plasma Processes and Polymers*, 2023.

60. Faust, J.M.M. – Gerlinger, W. – Naeem, O. – Mhamdi, A. – Mitsos, A.: Inline Raman Spectroscopy of an Emulsion Copolymerization in an Industrial Pilot Plant Using Indirect Hard Modeling. *Chemie-Ingenieur-Technik*, 2021.
61. Faust, J.M.M. – Hamzehlou, S. – Leiza, J.R. – Asua, J.M. – Mhamdi, A. – Mitsos, A.: Dynamic optimization of a two-stage emulsion polymerization to obtain desired particle morphologies. *Chemical Engineering Journal*, vol. 359, pp. 1035-1045, 2019.
- M. Jelemenský [40%] – R. Paulen [40%] – M. Fikar [15%] – Z. Kovacs [5%]: Time-optimal Diafiltration in the Presence of Membrane Fouling. In *Preprints of the 19th IFAC World Congress Cape Town (South Africa) August 24 - August 29, 2014*, pp. 4897–4902, 2014.
62. Cywińska-Antonik, Magdalena – Chen, Zhe – Groele, Barbara – Marszałek, Krystian: Application of Emerging Techniques in Reduction of the Sugar Content of Fruit Juice: Current Challenges and Future Perspectives. *Foods*, no. 6, vol. 12, pp. 1181, 2023.
63. Gao, Yulan – Yang, Jie – Song, Xinwei – Shen, Dongmei – Wang, Wanfen – Zhang, Weimin – Jiang, Jichao: An experimental study on the use of a sequencing-batch membrane bioreactor (SBMBR) for the treatment of mixed municipal wastewater. *Water Science and Technology*, no. 6, vol. 83, pp. 1459-1469, 2021.
64. Zhang, Bopeng – Kotsalis, Georgios – Khan, Jahanzeb – Xiong, Zhaoyang – Igou, Thomas – Lan, Guanghui – Chen, Yongsheng: Backwash sequence optimization of a pilot-scale ultrafiltration membrane system using data-driven modeling for parameter forecasting. *Journal of Membrane Science*, vol. 612, pp. 118464, 2020.
- S. Lucia [50%] – R. Paulen [50%]: Robust Nonlinear Model Predictive Control with Reduction of Uncertainty Via Robust Optimal Experiment Design. In *Preprints of the 19th IFAC World Congress Cape Town (South Africa) August 24 - August 29, 2014*, pp. 1904–1909, 2014.
65. Bardow, A. – Schilling, J. – Wolff, L. – Pyschik, J. – Fleitmann, L.: Optimal experimental design of physical property measurements for optimal chemical process simulations. *Fluid Phase Equilibria*, vol. 557, pp. 113420, 2022.
66. : Nolasco, E. – Vassiliadis, V.S. – Kähm, W. – Adloor, S.D. – Ismaili, R.A. – Conejeros, R. – Espaa, T. – Gangadharan, N. – Mappas, V. – Scott, F. – Zhang, Q.: Optimal control in chemical engineering: Past, present and future. *Computers and Chemical Engineering*, vol. 155, pp. 107528, 2021.
67. Walz, Olga – Djelassi, Hatim – Mitsos, Alexander: Optimal experimental design for optimal process design: A trilevel optimization formulation. *Aiche Journal*, no. 1, vol. 66, pp. e16788, 2020.
68. Hille, R. – Budman, H.M.: Experimental Design for Batch-to-Batch Optimization under Model-Plant Mismatch. *Industrial and Engineering Chemistry Research*, 2019.
69. Thuy Thi-Thien Le – Sager, Sebastian – Jost, Felix: A Feedback Optimal Control Algorithm with Optimal Measurement Time Points. *Processes*, no. 1, vol. 5, 2017.
70. La, H. C. – Potschka, A. – Schloeder, J. P. – Bock, H. G.: DUAL CONTROL AND ONLINE OPTIMAL EXPERIMENTAL DESIGN. *Siam Journal on Scientific Computing*, no. 4, vol. 39, pp. B640-B657, 2017.
71. Van Impe, Jan – Logist, Filip – Telen, Dries – Houska, Boris: Self-Reflective Model Predictive Control. *SIAM Journal on Control and Optimization*, no. 5, vol. 55, pp. 2959-2980, 2017.

72. Krishnamoorthy, Dinesh – Foss, Bjarne – Skogestad, Sigurd: Real-Time Optimization under Uncertainty Applied to a Gas Lifted Well Network. *Processes*, no. 4, vol. 4, 2016.
73. Heirung, T. A. N. – Foss, B. – Ydstie, B. E.: MPC-based dual control with online experiment design. *Journal of Process Control*, vol. 32, pp. 64-76, 2015.
- R. Hernández [20%] – L. Simora [20%] – R. Paulen [20%] – S. Wegerhoff [10%] – R. Mazaeda [10%] – C. de Prada [10%] – S. Engell [10%]: Optimal Integrated Operation of a Sugar Production Plant. Editor(s): Jirí Jaromír Klemeš, Petar Sabev Varbanov, Peng Yen Liew, In *24th European Symposium on Computer Aided Process Engineering*, Elsevier B.V, Radarweg 29, PO Box 211, 1000 AE Amsterdam, Netherlands, vol. 2014, pp. 637–642, 2014.
74. Tkachenko, V, Serhii – Sheiko, V, Tamila – Petrenko, Vasyl V. – Anisimova, Olena M. – Kuznietsova, V, Inha – Khomichak, Lubomir M. – Obodovych, Oleksandr M.: INFLUENCE OF CRYSTALLIZING AGENT ON SUGAR QUALITY. *Acta Scientiarum Polonorum-technologia Alimentaria*, no. 4, vol. 19, pp. 457-465, 2020.
75. Khezri, R. – Golshannavaz, S. – Vakili, R. – Memar-Esfahani, B.: Multi-layer fuzzy-based under-frequency load shedding in back-pressure smart industrial microgrids. *Energy*, vol. 132, pp. 96-105, 2017.
- S. Lucia [50%] – R. Paulen [40%] – S. Engell [10%]: Multi-stage Nonlinear Model Predictive Control with Verified Robust Constraint Satisfaction. In *53rd IEEE Conference on Decision and Control*, Los Angeles, California, USA, vol. 53, pp. 2816–2821, 2014.
76. Sun, Jing-Gao – Chen, Xian-Feng – Su, Guang-Hao – Wang, Meng – Pan, Hong-Guang: Multi-stage Nonlinear Model Predictive Control with Online Scenario Update for Semi-batch Polymerization Processes. *International Journal of Control Automation and Systems*, no. 10, vol. 20, pp. 3187-3197, 2022.
77. Hanema, J. – Lazar, M. – Tóth, R.: Heterogeneously parameterized tube model predictive control for LPV systems. *Automatica*, vol. 111, 2020.
78. Holtorf, F. – Mitsos, A. – Biegler, L.T.: Multistage NMPC with on-line generated scenario trees: Application to a semi-batch polymerization process. *Journal of Process Control*, vol. 80, pp. 167-179, 2019.
79. Pitarch, J. L. – Palacin, C. G. – De Prada, C. – Voglauer, B. – Seyfriedsberger, G.: Optimisation of the resource efficiency in an industrial evaporation system. *Journal of Process Control*, vol. 56, pp. 1-12, 2017.
- R. Paulen [40%] – M. Jelemenský [25%] – Z. Kovacs [10%] – M. Fikar [25%]: Economically optimal batch diafiltration via analytical multi-objective optimal control. *Journal of Process Control*, vol. 28, pp. 73–82, 2015.
80. Gao, Yulan – Yang, Jie – Song, Xinwei – Shen, Dongmei – Wang, Wanfen – Zhang, Weimin – Jiang, Jichao: An experimental study on the use of a sequencing-batch membrane bioreactor (SBMBR) for the treatment of mixed municipal wastewater. *Water Science and Technology*, no. 6, vol. 83, pp. 1459-1469, 2021.
81. Kumar, V. – Kaistha, N.: Invariants for optimal operation of a reactor-separator-recycle process. *Journal of Process Control*, vol. 82, pp. 1-12, 2019.
82. Ge, Yulei – Li, Shurong – Shi, Yuhuan – Han, Lu: An adaptive wavelet method for solving mixed-integer dynamic optimization problems with discontinuous controls and application to

- alkali-surfactant-polymer flooding. *Engineering Optimization*, no. 6, vol. 51, pp. 1028-1048, 2019.
83. Khunnonkwao, P. – Jantama, K. – Kanchanatawee, S. – Galier, S. – Roux-de Balman, H.: A two steps membrane process for the recovery of succinic acid from fermentation broth. *Separation and Purification Technology*, vol. 207, pp. 451-460, 2018.
84. Robles, Angel – Victoria Ruano, Maria – Charfi, Amine – Lesage, Geoffroy – Heran, Marc – Harmand, Jerome – Seco, Aurora – Steyer, Jean-Philippe – Batstone, Damien J. – Kim, Jeonghwan – Ferrer, Jose: A review on anaerobic membrane bioreactors (AnMBRs) focused on modelling and control aspects. *Bioresource Technology*, vol. 270, pp. 612-626, 2018.
85. Saltik, M. Bahadir – Ozkan, Leyla – Jacobs, Marc – van der Padt, Albert: Dynamic modeling of ultrafiltration membranes for whey separation processes. *Computers & Chemical Engineering*, vol. 99, pp. 280-295, 2017.
86. Religaa, Pawel – Kazmierczak, Bernadetta: Desalination of chromium tannery wastewater by nanofiltration with different diafiltration mode. *Desalination and Water Treatment*, vol. 64, pp. 409-413, 2017.
- R. Martí [35%] – S. Lucia [25%] – D. Sarabia [10%] – R. Paulen [20%] – S. Engell [5%] – C. de Prada [5%]: Improving scenario decomposition algorithms for robust nonlinear model predictive control. *Computers & Chemical Engineering*, vol. 79, pp. 30-45, 2015.
87. Bjorvand, Simen, Jaschke, Johannes: Fast decentralized multi-stage model predictive control using sensitivity-based path-following and a nonsmooth Newton method☆. *Journal of Process Control*, vol. 156, pp. 103570, 2025.
88. Mdoe, Zawadi, Jäschke, Johannes: Sensitivity-based scenario selection for multi-stage MPC along principal components. *Computers and Chemical Engineering*, vol. 194, 2025.
89. Olivares, Benjamín, Araya, Benjamín, Quintanilla, Paulina, Navia, Daniel: Saturation regulation in heap leaching: A nonlinear model predictive control approach. *Minerals Engineering*, vol. 229, 2025.
90. Jeong, C. – Furenes, B. – Sharma, R.: Stochastic Sequential Model Predictive Control for Operating Buffer Reservoir in Hjartdøla Hydropower System under Uncertainty. *Modeling, Identification and Control*, no. 2, vol. 45, pp. 41-50, 2024.
91. Duque, A. – Tusso-Pinzón, R. – Ochoa, S.: Stochastic Plantwide Optimizing Control for an Acrylic Acid Plant. *Processes*, no. 12, vol. 12, 2024.
92. Ahmed, A. – del Rio-Chanona, E. A. – Mercangöz, M.: Linearizing nonlinear dynamics using deep learning. *Computers and Chemical Engineering*, vol. 170, 2023.
93. Bjorvand, Simen – Jaschke, Johannes: Improving Primal Decomposition for Multistage MPC Using an Extended Newton Method. *IEEE Control Systems Letters*, vol. 7, pp. 2677-2682, 2023.
94. Jeong, Changhun – Furenes, Beathe – Sharma, Roshan: Implementation of simplified sequential stochastic model predictive control for operation of hydropower system under uncertainty. *Computers & Chemical Engineering*, vol. 179, pp. 108409, 2023.
95. Alamir, M.: Learning against uncertainty in control engineering. *Annual Reviews in Control*, vol. 53, pp. 19 - 29, 2022.
96. Mathur, P. – Swartz, C.L.E. – Zyngier, D. – Welt, F.: Robust online scheduling for optimal short-term operation of cascaded hydropower systems under uncertainty. *Journal of Process Control*, vol. 98, pp. 52-65, 2021.

97. Jäschke, J. – (Joyce) Yu, Z. – Thombre, M. – Biegler, L.T.: Sensitivity-Assisted multistage nonlinear model predictive control: Robustness, stability and computational efficiency. *Computers and Chemical Engineering*, vol. 148, pp. 107269, 2021.
98. Li, H. – Swartz, C.L.E.: Robust model predictive control via multi-scenario reference trajectory optimization with closed-loop prediction. *Journal of Process Control*, vol. 100, pp. 80-92, 2021.
99. MacKinnon, L. – Li, H. – Swartz, C.L.E.: Robust model predictive control with embedded multi-scenario closed-loop prediction. *Computers and Chemical Engineering*, vol. 149, pp. 107283, 2021.
100. Nolasco, E. – Vassiliadis, V.S. – Kähm, W. – Adloor, S.D. – Ismaili, R.A. – Conejeros, R. – Espaaas, T. – Gangadharan, N. – Mappas, V. – Scott, F. – Zhang, Q.: Optimal control in chemical engineering: Past, present and future. *Computers and Chemical Engineering*, vol. 155, pp. 107528, 2021.
101. Zhang, S. – Jia, R. – You, F.: Transfer learning for end-product quality prediction of batch processes using domain-adaption joint-Y PLS. *Computers and Chemical Engineering*, vol. 140, pp. 106943, 2020.
102. Holtorf, F. – Mitsos, A. – Biegler, L.T.: Multistage NMPC with on-line generated scenario trees: Application to a semi-batch polymerization process. *Journal of Process Control*, vol. 80, pp. 167-179, 2019.
103. Garcia-Tirado, J. – Corbett, J.P. – Boiroux, D. – Jørgensen, J.B. – Breton, M.D.: Closed-loop control with unannounced exercise for adults with type 1 diabetes using the Ensemble Model Predictive Control. *Journal of Process Control*, vol. 80, pp. 202-210, 2019.
104. Krishnamoorthy, D. – Foss, B. – Skogestad, S.: A Primal decomposition algorithm for distributed multistage scenario model predictive control. *Journal of Process Control*, vol. 81, pp. 162-171, 2019.
105. Kanavalau, A. – Masters, R. – Kähm, W. – Vassiliadis, V. S.: Robust thermal stability for batch process intensification with model predictive control. *Computers and Chemical Engineering*, vol. 130, 2019.
106. Tejada-Iglesias, M. – Lappas, N.H. – Gounaris, C.E. – Ricardez-Sandoval, L.: Explicit model predictive controller under uncertainty: An adjustable robust optimization approach. *Journal of Process Control*, vol. 84, pp. 115-132, 2019.
107. Allman, Andrew – Tang, Wentao – Daoutidis, Prodromos: DeCODE: a community-based algorithm for generating high-quality decompositions of optimization problems. *Optimization and Engineering*, no. 4, SI, vol. 20, pp. 1067-1084, 2019.
108. Ribeiro, L. D. – Secchi, A. R.: A methodology to obtain analytical models that reduce the computational complexity faced in real time implementation of NMPC controllers. *Brazilian Journal of Chemical Engineering*, no. 3, vol. 36, pp. 1255-1278, 2019.
109. Kouzoupis, D. – Klintberg, E. – Diehl, M. – Gros, S.: A dual Newton strategy for scenario decomposition in robust multistage MPC. *International Journal of Robust and Nonlinear Control*, no. 6, vol. 28, pp. 2340-2355, 2018.
110. Krishnamoorthy, D. – Suwartadi, E. – Foss, B. – Skogestad, S. – Jäschke, J.: Improving Scenario Decomposition for Multistage MPC Using a Sensitivity-Based Path-Following Algorithm. *IEEE Control Systems Letters*, no. 4, vol. 2, pp. 581-586, 2018.

111. Klintberg, Emil – Gros, Sebastien: A Parallelizable Interior Point Method for Two-Stage Robust MPC. *IEEE Transactions on Control Systems Technology*, no. 6, vol. 25, pp. 2087-2097, 2017.
112. Zhang, Runfan – Chen, Diyi – Ma, Xiaoyi: Nonlinear Predictive Control of a Hydropower System Model. *Entropy*, no. 9, vol. 17, pp. 6129-6149, 2015.
- M. Jelemenský [50%] – A. Sharma [20%] – R. Paulen [20%] – M. Fikar [10%]: Time-optimal Operation of Diafiltration Processes in the Presence of Fouling. Editor(s): Krist V. Gernaey and Jakob K. Huusom and Rafiqul Gani, In *12th International Symposium on Process Systems Engineering And 25th European Symposium on Computer Aided Process Engineering*, Elsevier B.V, Copenhagen, Denmark, pp. 1577–1582, 2015.
113. Chen, Chee Xiang – Koskue, Veera – Martin, Gregory J. O. – Chen, George Q. – Freguia, Stefano: Biofouling control in reverse osmosis membranes by concentrated free ammonia in hydrolysed urine. *Desalination*, no. 117556, vol. 580, 2024.
114. Qalyoubi, L. – Al-Othman, A. – Al-Asheh, S.: Removal of ciprofloxacin antibiotic pollutants from wastewater using nano-composite adsorptive membranes. *Environmental research*, vol. 215, 2022.
- M. Jelemenský [40%] – R. Paulen [25%] – M. Fikar [25%] – Z. Kovacs [10%]: Time-Optimal Operation of Multi-Component Batch Diafiltration. *Computers & Chemical Engineering*, vol. 83, pp. 131–138, 2015.
115. Baldasso, Camila – Silvestre, Wendel Paulo – Silveira, Nauro – Vanin, Ana Paula – Medeiros Cardozo, Nilo Sergio – Tessaro, Isabel Cristina: Ultrafiltration and diafiltration modeling for improved whey protein purification. *Separation Science and Technology*, 2022.
116. Ricardez-Sandoval, Luis A. – Palma-Flores, Oscar – Andres-Martinez, Oswaldo: Optimal control and the Pontryagin's principle in chemical engineering: History, theory, and challenges. *AIChE JOURNAL*, no. 8, vol. 68, pp. e17777, 2022.
117. Religa, Pawel – Kazmierczak, Bernadetta: Desalination of chromium tannery wastewater by nanofiltration with different diafiltration mode. *Desalination and Water Treatment*, vol. 64, pp. 409-413, 2017.
118. Aguero, R. – Bringas, E. – San Roman, M. F. – Ortiz, I. – Ibanez, R.: Membrane Processes for Whey Proteins Separation and Purification. A Review. *Current Organic Chemistry*, no. 17, vol. 21, pp. 1740-1752, 2017.
119. Liu, Ping – Li, Guodong – Liu, Xinggao – Zhang, Zeyin: A NOVEL FAST DYNAMIC OPTIMIZATION APPROACH FOR COMPLEX MULTIVARIABLE CHEMICAL PROCESS SYSTEMS. *Canadian Journal of Chemical Engineering*, no. 12, vol. 94, pp. 2355-2363, 2016.
- B. Chachuat [35%] – B. Houska [15%] – R. Paulen [15%] – N. Peric [10%] – J. Rajyaguru [10%] – M. Villanueva [15%]: Set-Theoretic Approaches in Analysis, Estimation and Control of Nonlinear Systems. In *9th International Symposium on Advanced Control of Chemical Processes ADCHEM 2015 Whistler, British Columbia, Canada, 7-10 June 2015*, pp. 982–996, 2015.
120. Langiu, Marco, Dahmen, Manuel, Bongartz, Dominik, Mitsos, Alexander: MUSE-BB: a decomposition algorithm for nonconvex two-stage problems using strong multisection branching. *Journal of Global Optimization*, no. 4, vol. 92, pp. 837 – 888, 2025.

121. Nayak, Saswat Priyadarshi, Barth, Matthew: The Role of Integrity Monitoring in Connected and Automated Vehicles: Current State of Practice and Future Directions. *IEEE Intelligent Transportation Systems Magazine*, no. 6, vol. 17, pp. 93-114, 2025.
122. Nayak, Saswat Priyadarshi, Barth, Matthew: The Role of Integrity Monitoring in Connected and Automated Vehicles: Current State of Practice and Future Directions. *IEEE Intelligent Transportation Systems Magazine*, no. 6, vol. 17, pp. 93 – 114, 2025.
123. Sass, Susanne, Mitsos, Alexander, Nikolov, Nikolay I., Tsoukalas, Angelos: Out-of-sample estimation for a branch-and-bound algorithm with growing datasets. *Journal of Global Optimization*, no. 3, vol. 92, pp. 615 – 642, 2025.
124. Dewasme, L. – Mäkinen, M. – Chotteau, V.: Multivariable robust tube-based nonlinear model predictive control of mammalian cell cultures. *Computers and Chemical Engineering*, vol. 183, pp. 108592, 2024.
125. Sass, S. – Mitsos, A. – Bongartz, D. – Bell, I.H. – Nikolov, N.I. – Tsoukalas, A.: A branch-and-bound algorithm with growing datasets for large-scale parameter estimation. *European Journal of Operational Research*, no. 1, vol. 316, pp. 36-45, 2024.
126. Burre, J. – Bongartz, D. – Mitsos, A.: Comparison of MINLP formulations for global superstructure optimization. *Optimization and Engineering*, 2022.
127. Kappatou, C. D. – Bongartz, D. – Najman, J. – Sass, S. – Mitsos, A.: Global dynamic optimization with Hammerstein–Wiener models embedded. *Journal of Global Optimization*, 2022.
128. Fahr, S. – Mitsos, A. – Bongartz, D.: Simultaneous deterministic global flowsheet optimization and heat integration: Comparison of formulations. *Computers and Chemical Engineering*, vol. 162, pp. 107790, 2022.
129. Burre, J. – Kabatnik, C. – Al-Khatib, M. – Bongartz, D. – Jupke, A. – Mitsos, A.: Global flowsheet optimization for reductive dimethoxymethane production using data-driven thermodynamic models. *Computers and Chemical Engineering*, vol. 162, pp. 107806, 2022.
130. Schweidtmann, A.M. – Weber, J.M. – Wende, C. – Netze, L. – Mitsos, A.: Obey validity limits of data-driven models through topological data analysis and one-class classification. *Optimization and Engineering*, 2021.
131. Urrea-Quintero, J.-H. – Fuhg, J.N. – Marino, M. – Fau, A.: PI/PID controller stabilizing sets of uncertain nonlinear systems: an efficient surrogate model-based approach. *Nonlinear Dynamics*, no. 1, vol. 105, pp. 277-299, 2021.
132. Wessling, M. – Mitsos, A. – Ostendorf, K. – Karwe, J. – Kamp, J. – Aumeier, B. M. – Schweidtmann, A. M. – Rall, D.: Simultaneous rational design of ion separation membranes and processes. *Journal of Membrane Science*, vol. 600, pp. 117860, 2020.
133. D. Calzolari – A. Albu-Schäffer – A. M. Giordano: Error Bounds for PD-Controlled Mechanical Systems Under Bounded Disturbances Using Interval Arithmetic. *IEEE Robotics and Automation Letters*, no. 2, vol. 5, pp. 1231-1238, 2020.
134. Bongartz, D. – Najman, J. – Mitsos, A.: Deterministic global optimization of steam cycles using the IAPWS-IF97 model. *Optimization and Engineering*, 2020.
135. Huster, W.R. – Schweidtmann, A.M. – Lüthje, J.T. – Mitsos, A.: Deterministic global superstructure-based optimization of an organic Rankine cycle. *Computers and Chemical Engineering*, no. 106996, vol. 141, 2020.
136. Merhy, D. – Stoica Maniu, C. – Alamo, T. – Camacho, E.F. – Ben Chabane, S. – Chevet, T. – Makarov, M. – Hinostroza, I.: Guaranteed set-membership state estimation of an

- octorotor's position for radar applications. *International Journal of Control*, no. 11, vol. 93, pp. 2760-2770, 2020.
137. Merhy, D. – Stoica Maniu, C. – Alamo, T. – Camacho, E.F. – Ben Chabane, S. – Chevet, T. – Makarov, M. – Hinostroza, I.: Guaranteed set-membership state estimation of an octorotors position for radar applications. *International Journal of Control*, no. 11, vol. 93, pp. 2760-2770, 2020.
138. Schweidtmann, A. M. – Huster, W. R. – Lüthje, J. T. – Mitsos, A.: Deterministic global process optimization: Accurate (single-species) properties via artificial neural networks. *Computers and Chemical Engineering*, vol. 121, pp. 67-74, 2019.
139. Schweidtmann, A. M. – Mitsos, A.: Deterministic Global Optimization with Artificial Neural Networks Embedded. *Journal of Optimization Theory and Applications*, no. 3, vol. 180, pp. 925–948, 2019.
140. Bongartz, D. – Mitsos, A.: Deterministic global flowsheet optimization: Between equation-oriented and sequential-modular methods. *AIChE Journal*, no. 3, vol. 65, pp. 1022-1034, 2019.
141. Najman, J. – Mitsos, A.: Tighter McCormick relaxations through subgradient propagation. *Journal of Global Optimization*, 2019.
142. Najman, J. – Bongartz, D. – Mitsos, A.: Convex relaxations of componentwise convex functions. *Computers and Chemical Engineering*, no. 106527, vol. 130, 2019.
143. Najman, J. – Bongartz, D. – Mitsos, A.: Relaxations of thermodynamic property and costing models in process engineering. *Computers and Chemical Engineering*, vol. 130, 2019.
144. Najman, Jaromil – Mitsos, Alexander: On tightness and anchoring of McCormick and other relaxations. *Journal of Global Optimization*, no. 4, SI, vol. 74, pp. 677-703, 2019.
145. Diedam, H. – Sager, S.: Global optimal control with the direct multiple shooting method. *Optimal Control Applications & Methods*, no. 2, SI, vol. 39, pp. 449-470, 2018.
- S. Thangavel [30%] – S. Lucia [30%] – R. Paulen [30%] – S. Engell [10%]: Towards Dual Robust Nonlinear Model Predictive Control: A Multi-stage Approach. In *2015 American Control Conference, Chicago, IL, USA. July 1-3, 2015.*, pp. 428–433, 2015.
146. Rakay, R., Vagas, M.: The Comparison of Machine Vision Approaches for Standard Industrial Solutions. V Proceedings of the 2024 25th International Carpathian Control Conference, ICC 2024, 2024. Scopus SCI(z) 2024
147. Diehl, M., Horn, G., Gillis, J., Andersson, J. A. E., Rawlings, J. B.: CasADi: a software framework for nonlinear optimization and optimal control. *Mathematical Programming Computation*, no. 1, vol. 11, 2019.
148. Rossi, F. – Manenti, F. – Buzzi-Ferraris, G. – Reklaitis, G.: Stochastic NMPC/DRTO of batch operations: Batch-to-batch dynamic identification of the optimal description of model uncertainty. *Computers and Chemical Engineering*, vol. 122, pp. 395-414, 2019.
149. Lappas, N.H. – Tejada-Iglesias, M. – Gounaris, C.E. – Ricardez-Sandoval, L.: Explicit model predictive controller under uncertainty: An adjustable robust optimization approach. *Journal of Process Control*, vol. 84, pp. 115-132, 2019.
150. Paulson, Joel A. – Mesbah, Ali: An efficient method for stochastic optimal control with joint chance constraints for nonlinear systems. *International Journal of Robust and Nonlinear Control*, no. 15, SI, vol. 29, pp. 5017-5037, 2019.

151. Mesbah, A.: Stochastic model predictive control with active uncertainty learning: A Survey on dual control. *Annual Reviews in Control*, vol. 45, pp. 107-117, 2018.
152. Rossi, Francesco – Reklaitis, Gintaras – Manenti, Flavio – Buzzi-Ferraris, Guido: Multi-Scenario Robust Online Optimization and Control of Fed-Batch Systems via Dynamic Model-Based Scenario Selection. *Aiche Journal*, no. 9, vol. 62, pp. 3264-3284, 2016.
- R. Martí [30%] – S. Lucia [25%] – D. Sarabia [15%] – R. Paulen [20%] – S. Engell [5%] – C. de Prada [5%]: An Efficient Distributed Algorithm for Multi-Stage Robust Nonlinear Predictive Control. In *European Control Conference 2015*, Linz, Austria, pp. 2669–2674, 2015.
153. Liu, S. – Sadowska, A. – De Schutter, B.: A scenario-based distributed model predictive control approach for freeway networks. *Transportation Research Part C: Emerging Technologies*, vol. 136, pp. 103261, 2022.
154. Kouzoupis, D. – Klintberg, E. – Frison, G. – Gros, S. – Diehl, M.: A dual Newton strategy for tree-sparse quadratic programs and its implementation in the open-source software treeQP. *International Journal of Robust and Nonlinear Control*, no. 8, vol. 29, pp. 2438-2457, 2019.
- R. Paulen [50%] – M. Fikar [50%]: *Optimal Operation of Batch Membrane Processes*, Springer, 2016.
155. Shahidul, M.I. – Boniface, M.A. – Baini, R. – Khairi, A.A.F.B. – Huspi, H.A.: Impact of Process Control Devices on the Performance of Ultrafilter Membrane in Clean Water Production. *Journal of Advanced Research in Applied Mechanics*, no. 1, vol. 120, 2024.
156. Mierzwa, J.C. – Lemos, H.G. – Ragio, R.A. – Conceição, A.C.S. – Venancio, E.C. – Subtil, E.L.: Assessment of mixed matrix membranes (MMMs) incorporated with graphene oxide (GO) for co-treatment of wastewater and landfill leachate (LFL) in a membrane bioreactor (MBR). *Chemical Engineering Journal*, pp. 131772, 2021.
157. Hammad, Ahmed W. A. – Rey, David – Bu-Qammar, Amani – Grzybowska, Hanna – Akbarnezhad, Ali: Mathematical optimization in enhancing the sustainability of aircraft trajectory: A review. *International Journal of Sustainable Transportation*, no. 6, vol. 14, pp. 413-436, 2020.
158. Sana, Madiha – Mustahsan, Muhammad: Finite Element Approximation of Optimal Control Problem with Weighted Extended B-Splines. *Mathematics*, no. 5, vol. 7, 2019.
159. Hammad, A.W.A. – Rey, D. – Bu-Qammar, A. – Grzybowska, H. – Akbarnezhad, A.: Mathematical optimization in enhancing the sustainability of aircraft trajectory: A review. *International Journal of Sustainable Transportation*, 2019.
- M. Jelemenský [25%] – M. Klaučo [25%] – R. Paulen [25%] – J. Lauwers [5%] – F. Logist [5%] – J. Van Impe [1%] – M. Fikar [14%]: Time-Optimal Control and Parameter Estimation of Diafiltration Processes in the Presence of Membrane Fouling. In *11th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems*, vol. 11, pp. 242–247, 2016.
160. Nawaz, Alam – Saxena, Nikita – Arora, Amarpreet Singh – Yun, Choa Mun – Lee, Moonyong: Auto-Tuning of Identified Highly Sensitive Parameters for ANAMMOX System: Advanced Modeling Approach. *IEEE Transactions on Industrial Informatics*, no. 11, vol. 17, pp. 7238-7245, 2021.

161. Krewer, U. – Scholl, S. – Rehbein, M. – Xie, X. – Schenkendorf, R.: The impact of global sensitivities and design measures in model-based optimal experimental design. *Processes*, no. 4, vol. 6, 2018.
- A. Sharma [45%] – M. Jelemenský [25%] – R. Paulen [15%] – M. Fikar [15%]: Estimation of membrane fouling parameters for concentrating lactose using nanofiltration. Editor(s): Zdravko Kravanja, Miloš Bogataj, In *26th European Symposium on Computer Aided Process Engineering*, Elsevier B.V, Portorož, Slovenia, vol. 26, pp. 151–156, 2016.
162. Park, Jungsu – Cayetano, Roent Dune A. – Kwon, Yeelyung – Kim, Gi-Beom – Jo, Yura – Kim, Sang-Hyoun: Improved sludge anaerobic digestion capacity by dynamic membrane and alkaline-thermal pretreatment: Long-term continuous operation and techno-economic analysis. *Chemical Engineering Journal*, vol. 474, pp. 145735, 2023.
163. McCarthy, W.P. – Blais, H.N. – O'Callaghan, T.F. – Hossain, M. – Moloney, M. – Danaher, M. – O'Connor, C. – Tobin, J.T.: Application of nanofiltration for the removal of chlorate from skim milk. *International Dairy Journal*, vol. 128, pp. 105321, 2022.
164. Jeong, S. – Kim, D. – Lee, J. H.: *Modeling and Simulation of Autothermal Reforming Reactor of Diesel over Ni-based Catalyst in Solid Oxide Fuel Cell based Auxiliary Power Unit System*, vol. 44, 2018.
- M. Jelemenský [40%] – A. Sharma [25%] – R. Paulen [25%] – M. Fikar [10%]: Time-optimal control of diafiltration processes in the presence of membrane fouling. *Computers & Chemical Engineering*, vol. 91, pp. 343–351, 2016.
165. Chaaben, Aymen, Ellouze, Fatma, Ben Amar, Nihel, Rapaport, Alain, Heran, Marc, Harmand, Jerome: Evaluation of the Genericity of an Adaptive Optimal Control Approach to Optimize Membrane Filtration Systems. *Membranes*, no. 6, vol. 15, 2025.
166. Cherifi, Leila, Ammi, Yamina, Hanini, Salah, Hentabli, Mohamed, Belkacem, Ouafa, Harmand, Jérôme: A Novel Empirical Fractional Approach for Modeling the Clogging of Membrane Filtration During Protein Microfiltration. *Membranes*, no. 4, vol. 15, 2025.
167. Qalyoubi, L. – Al-Othman, A. – Al-Asheh, S.: Removal of ciprofloxacin antibiotic pollutants from wastewater using nano-composite adsorptive membranes. *Environmental Research*, no. 114182, vol. 215, 2022.
168. Kuhn, M. – Briesen, H.: Optimizing the axial resistance profile of submerged hollow fiber membranes. *Processes*, no. 1, vol. 9, pp. 1-13, 2021.
169. Gao, Yulan – Yang, Jie – Song, Xinwei – Shen, Dongmei – Wang, Wanfen – Zhang, Weimin – Jiang, Jichao: An experimental study on the use of a sequencing-batch membrane bioreactor (SBMBR) for the treatment of mixed municipal wastewater. *Water Science and Technology*, no. 6, vol. 83, pp. 1459-1469, 2021.
170. Zhang, Bopeng – Kotsalis, Georgios – Khan, Jahanzeb – Xiong, Zhaoyang – Igou, Thomas – Lan, Guanghui – Chen, Yongsheng: Backwash sequence optimization of a pilot-scale ultrafiltration membrane system using data-driven modeling for parameter forecasting. *Journal of Membrane Science*, vol. 612, pp. 118464, 2020.
171. Rehman, Waheed Ur – Muhammad, Amir – Khan, Qaisar Ali – Younas, Mohammad – Rezakazemi, Mashallah: Pomegranate juice concentration using osmotic distillation with membrane contactor. *Separation and Purification Technology*, vol. 224, pp. 481-489, 2019.

172. Oravec, Juraj – Bakosova, Monika – Trafczynski, Marian – Vasickaninova, Anna – Meszaros, Alajos – Markowski, Mariusz: Robust model predictive control and PID control of shell-and-tube heat exchangers. *Energy*, vol. 159, pp. 1-10, 2018.
173. Robles, Angel – Victoria Ruano, Maria – Charfi, Amine – Lesage, Geoffroy – Heran, Marc – Harmand, Jerome – Seco, Aurora – Steyer, Jean-Philippe – Batstone, Damien J. – Kim, Jeonghwan – Ferrer, Jose: A review on anaerobic membrane bioreactors (AnMBRs) focused on modelling and control aspects. *Bioresource Technology*, vol. 270, pp. 612-626, 2018.
174. Religa, Pawel – Kazmierczak, Bernadetta – Wojtkowska, Malgorzata – Rogos, Elzbieta: The influence of the nanofiltration method on the retentate composition after simulated chromium tannery wastewater concentration. *Desalination and Water Treatment*, vol. 128, pp. 187-192, 2018.
- M. Jelemenský [35%] – D. Pakšiová [20%] – R. Paulen [25%] – M. A. Latifi [10%] – M. Fikar [10%]: Combined Estimation and Optimal Control of Batch Membrane Processes. *Processes*, no. 4, vol. 4, 2016.
175. Bombek, Gorazd – Kevorkijan, Luka – Hrovat, Grega – Kuzman, Drago – Kapun, Aleks – Ravnik, Jure – Hribersek, Matjaz – Hribernik, Ales: Development of an Experimental Dead-End Microfiltration Layout and Process Repeatability Analysis. *Processes*, no. 2, vol. 12, 2024.
176. Liang, Enzhi – Zhang, Song – Liu, Bin – Qi, Bujin – Nie, Yanpei – Yuan, Zhihong: Mathematical Modeling for the Industrial 2-Mercaptobenzothiazole Batch Production Process. *ACS Omega*, no. 8, vol. 7, pp. 6963-6977, 2022.
177. Qi, B. – Liu, B. – Zhang, S. – Liang, E. – Nie, Y. – Yuan, Z.: Mathematical Modeling for the Industrial 2-Mercaptobenzothiazole Batch Production Process. *ACS Omega*, no. 8, vol. 7, pp. 6963-6977, 2021.
178. Bonvin, Dominique: Special Issue. *Processes*, no. 2, vol. 5, 2017.
- S. Thangavel [40%] – S. Lucia [20%] – R. Paulen [35%] – S. Engell [5%]: Robust Nonlinear Model Predictive Control with Reduction of Uncertainty via Dual Control. Editor(s): M. Fikar and M. Kvasnica, In *Proceedings of the 21st International Conference on Process Control*, Slovak Chemical Library, Štrbské Pleso, Slovakia, pp. 48–53, 2017.
179. Nogueira, I. B. R. – Fontes, R. M. – Ribeiro, A. M. – Pontes, K. V. – Embiruçu, M. – Martins, M. A. F.: A robustly model predictive control strategy applied in the control of a simulated industrial polyethylene polymerization process. *Computers and Chemical Engineering*, vol. 133, pp. 106664, 2020.
- A. Sharma [30%] – M. Jelemenský [20%] – R. Paulen [20%] – M. Fikar [30%]: Modeling and optimal operation of batch closed-loop diafiltration processes. *Chemical Engineering Research and Design*, vol. 122, pp. 198–210, 2017.
180. El-Ghizel, Soufian – Zeggar, Hajar – Elazhar, Fatima – Tahaikt, Mustapha – Hafsi, Mahmoud – Elmidaoui, Azzedine – Taky, Mohamed: Brine recycling impact on nitrate removal and electrochemical disinfection performances: a case study of Sidi Taibi desalination plant. *Desalination and Water Treatment*, vol. 240, pp. 63-74, 2021.

181. Al-Obaidi, M. A. – Alsarayreh, A. A. – Mujtaba, I. M. – Patel, R. – Al-Hroub, A. M.: Performance evaluation of reverse osmosis brackish water desalination plant with different recycled ratios of retentate. *Computers and Chemical Engineering*, vol. 135, pp. 106729, 2020.
182. Al-Hroub, A.M. – Al-Obaidi, M.A. – Alsarayreh, A.A. – Patel, R. – Mujtaba, I.M.: Performance Evaluation of Reverse Osmosis Brackish Water Desalination Plant with Different Recycled Ratios of Retentate. *Computer Aided Chemical Engineering*, vol. 46, pp. 181-186, 2019.
183. Wang, M. – Admassu, H. – Gasmalla, M. A. A. – Hua, X. – Yang, R.: Preparation of high-purity lactulose through efficient recycling of catalyst sodium aluminate and nanofiltration: a pilot-scale purification. *Journal of the science of food and agriculture*, no. 14, vol. 98, pp. 5352-5360, 2018.

A. R. Gottu Mukkula [40%] – R. Paulen [60%]: Model-Based Optimal Experiment Design for Nonlinear Parameter Estimation Using Exact Confidence Regions. In *Preprints of the 20th IFAC World Congress, Toulouse, France*, vol. 20, pp. 14324–14329, 2017.

184. Vering, C. – Möntenich, J. – Rätz, M. – Klebig, T. – Streblow, R. – Müller, D.: Process model design for positive displacement compressors and their experimental validation: Comparison of Optimal Experimental Design and Machine Learning [Conception de modèles de processus pour les compresseurs volumétriques et leur validation expérimentale : Comparaison de la conception expérimentale optimale et de l'apprentissage automatique]. *International Journal of Refrigeration*, vol. 157, pp. 1-11, 2024.
185. Wang, Z. – Wang, X. – Wang, Y.: Orthotope-search-expansion-based extended zonotopic Kalman filter design for a discrete-time linear parameter-varying system with a dual-noise term. *Applied Mathematics and Computation*, vol. 474, pp. 128675, 2024.
186. Bortz, M. – Asprion, N. – Oseledets, I. – Ryzhakov, G. – Karpov, G. – Vanaret, C. – Schwientek, J. – Seufert, P.: Two-phase approaches to optimal model-based design of experiments: how many experiments and which ones?. *Computers and Chemical Engineering*, vol. 146, pp. 107218, 2021.

A. R. Gottu Mukkula [35%] – R. Paulen [65%]: Model-based design of optimal experiments for nonlinear systems in the context of guaranteed parameter estimation. *Computers & Chemical Engineering*, vol. 99, pp. 198–213, 2017.

187. Stroebel, F. – Schaeufl, F. – Bohlen, O. – Palm, H.: Multi-Stage Optimal Experimental Design and Setup Strategies in Absence of System Pre-Knowledge. *IEEE Access*, vol. 12, pp. 120440-120453, 2024.
188. Quilló, G. L. – Bhonsale, S. – Collas, A. – Xiouras, C. – Van Impe, J. F. M.: Iterative model-based optimal experimental design for mixture-process variable models to predict solubility. *Chemical Engineering Research and Design*, vol. 189, pp. 768-780, 2023.
189. Casas-Orozco, Daniel – Laky, Daniel – Mackey, Jaron – Reklaitis, Gintaras – Nagy, Zoltan: Reaction kinetics determination and uncertainty analysis for the synthesis of the cancer drug lomustine. *Chemical Engineering Science*, vol. 275, pp. 118591, 2023.
190. Lei, Chon Lok – Clerx, Michael – Gavaghan, David J. – Mirams, Gary R.: Model-driven optimal experimental design for calibrating cardiac electrophysiology models. *Computer Methods and Programs in Biomedicine*, vol. 240, pp. 107690, 2023.

191. Kusumo, K. P. – Kuriyan, K. – Vaidyaraman, S. – García-Muñoz, S. – Shah, N. – Chachuat, B.: Risk mitigation in model-based experiment design: A continuous-effort approach to optimal campaigns. *Computers and Chemical Engineering*, vol. 159, pp. 107680, 2022.
192. Lam, N. N. – Docherty, P. D. – Murray, R.: Practical identifiability of parametrised models: A review of benefits and limitations of various approaches. *Mathematics and Computers in Simulation*, vol. 199, pp. 202-216, 2022.
193. Kusumo, K. P. – Kuriyan, K. – Vaidyaraman, S. – García Muñoz, S. – Shah, N. – Chachuat, B.: Probabilistic framework for optimal experimental campaigns in the presence of operational constraints. *Reaction Chemistry and Engineering*, no. 11, vol. 7, pp. 2359-2374, 2022.
194. Caspari, A. – Djelassi, H. – Mhamdi, A. – Biegler, L.T. – Mitsos, A.: Semi-infinite programming yields optimal disturbance model for offset-free nonlinear model predictive control. *Journal of Process Control*, vol. 101, pp. 35-51, 2021.
195. Petsagkourakis, P. – Galvanin, F.: Safe model-based design of experiments using Gaussian processes. *Computers and Chemical Engineering*, vol. 151, pp. 107339, 2021.
196. Krichen, E. – Rapaport, A. – Fouilland, E.: About frame estimation of growth functions and robust prediction in bioprocess modeling. *Journal of Process Control*, vol. 85, pp. 121-135, 2020.
197. Novara, C. – Karimshoushtari, M.: Design of experiments for nonlinear system identification: A set membership approach. *Automatica*, no. 109036, vol. 119, 2020.
198. Kunna, M.A. – Kadir, T.A.A. – Remli, M.A. – Ali, N.M. – Moorthy, K. – Muhammad, N.: An enhanced segment particle swarm optimization algorithm for kinetic parameters estimation of the main metabolic model of *Escherichia coli*. *Processes*, no. 8, vol. 8, pp. 963, 2020.
199. Walz, Olga – Djelassi, Hatim – Mitsos, Alexander: Optimal experimental design for optimal process design: A trilevel optimization formulation. *Aiche Journal*, no. 1, vol. 66, pp. e16788, 2020.
200. Remli, Muhammad Akmal – Mohamad, Mohd Saberi – Deris, Safaai – Samah, Azurah A. – Omatu, Sigeru – Manuel Corchado, Juan: Cooperative enhanced scatter search with opposition-based learning schemes for parameter estimation in high dimensional kinetic models of biological systems. *Expert Systems with Applications*, vol. 116, pp. 131-146, 2019.
201. Joy, Preet – Djelassi, Hatim – Mhamdi, Adel – Mitsos, Alexander: Optimization-based global structural identifiability. *Computers & Chemical Engineering*, vol. 128, pp. 417-420, 2019.
202. Jung, Falco – Janssen, Franca A. L. – Ksiazkiewicz, Agnieszka – Caspari, Adrian – Mhamdi, Adel – Pich, Andrij – Mitsos, Alexander: Identifiability Analysis and Parameter Estimation of Microgel Synthesis: A Set-Membership Approach. *Industrial & Engineering Chemistry Research*, no. 30, SI, vol. 58, pp. 13675-13685, 2019.
203. Walz, Olga – Djelassi, Hatim – Caspari, Adrian – Mitsos, Alexander: Bounded-error optimal experimental design via global solution of constrained min-max program. *Computers & Chemical Engineering*, vol. 111, pp. 92-101, 2018.
204. Budman, H. M. – Hille, R.: Simultaneous identification and optimization of biochemical processes under model-plant mismatch using output uncertainty bounds. *Computers and Chemical Engineering*, vol. 113, pp. 125-138, 2018.

- R. Paulen [50%] – M. Villanueva [10%] – B. Chachuat [40%]: Guaranteed parameter estimation of non-linear dynamic systems using high-order bounding techniques with domain and CPU-time reduction strategies. *IMA Journal of Mathematical Control and Information*, no. 3, vol. 33, pp. 563–587, 2016.
205. El Wajeh, Mohammad – Jung, Falco – Bongartz, Dominik – Kappatou, Chrysoula Dimitra – Laleh, Narmin Ghaffari – Mitsos, Alexander – Kather, Jakob Nikolas: Can the Kuznetsov Model Replicate and Predict Cancer Growth in Humans?. *Bulletin of Mathematical Biology*, no. 11, vol. 84, pp. 130, 2022.
206. Walz, Olga – Djelassi, Hatim – Mitsos, Alexander: Optimal experimental design for optimal process design: A trilevel optimization formulation. *Aiche Journal*, no. 1, vol. 66, pp. e16788, 2020.
207. Merhy, D. – Stoica Maniu, C. – Alamo, T. – Camacho, E.F. – Ben Chabane, S. – Chevet, T. – Makarov, M. – Hinostroza, I.: Guaranteed set-membership state estimation of an octorotor's position for radar applications. *International Journal of Control*, no. 11, vol. 93, pp. 2760-2770, 2020.
208. Merhy, D. – Stoica Maniu, C. – Alamo, T. – Camacho, E.F. – Ben Chabane, S. – Chevet, T. – Makarov, M. – Hinostroza, I.: Guaranteed set-membership state estimation of an octorotor's position for radar applications. *International Journal of Control*, no. 11, vol. 93, pp. 2760-2770, 2020.
209. Jung, Falco – Janssen, Franca A. L. – Ksiaskiewicz, Agnieszka – Caspari, Adrian – Mhamdi, Adel – Pich, Andrij – Mitsos, Alexander: Identifiability Analysis and Parameter Estimation of Microgel Synthesis: A Set-Membership Approach. *Industrial & Engineering Chemistry Research*, no. 30, SI, vol. 58, pp. 13675-13685, 2019.
210. Walz, Olga – Djelassi, Hatim – Caspari, Adrian – Mitsos, Alexander: Bounded-error optimal experimental design via global solution of constrained min-max program. *Computers & Chemical Engineering*, vol. 111, pp. 92-101, 2018.
- S. Wenzel [55%] – R. Paulen [25%] – B. Beisheim [5%] – S. Krämer [5%] – S. Engell [10%]: Market-Based Coordination of Shared Resources in Cyber-physical Production Sites. *Chemie Ingenieur Technik*, no. 5, vol. 89, pp. 636–644, 2017.
211. Galembeck, Fernando: Synergy in food, energy and advanced materials production from biomass. *Pure and Applied Chemistry*, no. 1, vol. 90, pp. 109-119, 2018.
- S. Wenzel [50%] – R. Paulen [25%] – G. Stojanovski [5%] – S. Krämer [5%] – B. Beisheim [5%] – S. Engell [10%]: Optimal resource allocation in industrial complexes by distributed optimization and dynamic pricing. *at - Automatisierungstechnik*, no. 6, vol. 64, pp. 428–442, 2016.
212. Pérez-Perales, D. – Boza, A. – Alarcón, F. – Gómez-Gasquet, P.: Mathematical programming-based methodology for the evaluation of supply chain collaborative planning scenarios. *Annals of Operations Research*, no. 1, vol. 337, pp. 261-312, 2024.
213. Leenders, L. – Hagedorn, D.F. – Djelassi, H. – Bardow, A. – Mitsos, A.: Bilevel optimization for joint scheduling of production and energy systems. *Optimization and Engineering*, 2022.

214. Dirza, R. – Matias, J. – Skogestad, S. – Krishnamoorthy, D.: Experimental validation of distributed feedback-based real-time optimization in a gas-lifted oil well rig. *Control Engineering Practice*, vol. 126, pp. 105253, 2022.
215. Krishnamoorthy, D.: A distributed feedback-based online process optimization framework for optimal resource sharing. *Journal of Process Control*, vol. 97, pp. 72-83, 2021.
216. Marchetti, Alejandro G. – Francois, Gregory – Faulwasser, Timm – Bonvin, Dominique: Modifier Adaptation for Real-Time Optimization-Methods and Applications. *Processes*, no. 4, vol. 4, 2016.
- A. R. Gottu Mukkula [35%] – R. Paulen [65%]: Robust model-based design of experiments for guaranteed parameter estimation. Editor(s): Antonio Espuña, Moisès Graells and Luis Puigjaner, In *27th European Symposium on Computer-Aided Process Engineering*, Elsevier, pp. 1639–1644, 2017.
217. Duarte, Belmiro P. M. – Atkinson, Anthony C. – Granjo, Jose F. O. – Oliveira, Nuno M. C.: A model-based framework assisting the design of vapor-liquid equilibrium experimental plans. *Computers & Chemical Engineering*, vol. 145, pp. 107168, 2021.
218. Walz, Olga – Djelassi, Hatim – Mitsos, Alexander: Optimal experimental design for optimal process design: A trilevel optimization formulation. *Aiche Journal*, no. 1, vol. 66, pp. e16788, 2020.
- S. Engell [30%] – R. Paulen [15%] – M. Reniers [15%] – C. Sonntag [10%] – H. Thompson [30%]: *Core Research and Innovation Areas in Cyber-Physical Systems of Systems*, In *Cyber Physical Systems. Design, Modeling, and Evaluation*, Editor(s): Christian Berger and Mohammad Reza Mousavi, Springer, vol. 9361, pp. 40–56, 2015.
219. van Zomeren, Mark, Deane, Felicity, Joiner, Keith F., Qiao, Li, Horne, Rachel, Suprun, Emiliya: Regulating Cyberworthiness: Governance Frameworks for Safety-Critical Cyber-Physical Systems. *Systems*, no. 10, vol. 13, 2025.
220. Pedroso, Leonardo, Batista, Pedro, Heemels, W.P.M.H. (Maurice): Distributed design of ultra large-scale control systems: Progress, Challenges, and Prospects. *Annual Reviews in Control*, vol. 59, 2025.
221. Eichmann, O.C. – Lamm, J.G. – Melzer, S. – Weilkiens, T. – God, R.: Development of functional architectures for cyber-physical systems using interconnectable models. *Systems Engineering*, no. 6, vol. 27, pp. 993-1011, 2024.
222. Horváth, I. – Erden, Z.: What to Consider at the Development of Educational Programs and Courses About Next-Generation Cyber-Physical Systems?. *Journal of Computing and Information Science in Engineering*, no. 10, vol. 24, 2024.
223. Novoselnik, B. – Baotić, M.: Distributed power system coordination via parametric optimization and ADMM. *Sustainable Energy, Grids and Networks*, no. 101456, vol. 39, 2024.
224. Pirani, M. – Carbonari, A. – Cucchiarelli, A. – Giretti, A. – Spalazzi, L.: The Meta Holonic Management Tree: review, steps, and roadmap to industrial Cybernetics 5.0. *Journal of Intelligent Manufacturing*, 2024.
225. Jiang, T. – Zhou, J. – Wang, M. – Li, E. – Zhang, S.: SoS applications in production/manufacturing domain: a review and discussion. *International Journal of Advanced Manufacturing Technology*, no. 5-6, vol. 130, pp. 2219-2239, 2024.

226. Chen, Zhiwei – Zhao, Tingdi – Jiao, Jian – Chu, Jiayun: Performance-threshold-based resilience analysis of system of systems by considering dynamic reconfiguration. *Proceedings of the Institution of Mechanical Engineers Part B-journal of Engineering Manufacture*, no. 14, SI, vol. 236, pp. 1828-1838, 2022.
227. Şekercioğlu, A. – Arvin, F. – Elmenreich, W. – Schmickl, T. – Di Caro, G.A. – Schranz, M. – Sende, M.: Swarm Intelligence and cyber-physical systems: Concepts, challenges and future trends. *Swarm and Evolutionary Computation*, vol. 60, pp. 100762, 2021.
228. Leenders, Ludger – Ganz, Kirstin – Bahl, Bjoern – Hennen, Maike – Baumgaertner, Nils – Bardow, Andre: Scheduling coordination of multiple production and utility systems in a multi-leader multi-follower Stackelberg game. *Computers & Chemical Engineering*, vol. 150, pp. 107321, 2021.
229. Novoselnik, Branimir – Spudic, Vedrana – Baotic, Mato: Parametric Optimization Based MPC for Systems of Systems With Affine Coordination Constraints. *IEEE Transactions on Automatic Control*, no. 2, vol. 65, pp. 649-663, 2020.
230. Cimini, Chiara – Pirola, Fabiana – Pinto, Roberto – Cavalieri, Sergio: A human-in-the-loop manufacturing control architecture for the next generation of production systems. *Journal of Manufacturing Systems*, vol. 54, pp. 258-271, 2020.
231. Vassalos, D. – Boulougouris, E. – Bujorianu, L. M. – Theotokatos, G. – Bolbot, V.: Vulnerabilities and safety assurance methods in Cyber-Physical Systems: A comprehensive review. *Reliability Engineering and System Safety*, vol. 182, pp. 179-193, 2019.
232. Iannino, Vincenzo – Colla, Valentina – Denker, Joachim – Goettsche, Marc: A CPS-Based Simulation Platform for Long Production Factories. *Metals*, no. 10, vol. 9, 2019.
233. Tepjit, Sirasak – Horváth, Imre – Rusák, Zoltán: The state of framework development for implementing reasoning mechanisms in smart cyber-physical systems: A literature review. *Journal of Computational Design and Engineering*, no. 4, vol. 6, pp. 527-541, 2019.
234. Fele, F. – Debada, E. – Maestre, J. M. – Camacho, E. F.: Coalitional Control for Self-Organizing Agents. *IEEE Transactions on Automatic Control*, no. 9, vol. 63, pp. 2883-2897, 2018.
235. Colombo, A. W. – Karnouskos, S. – Kaynak, O. – Shi, Y. – Yin, S.: Industrial Cyberphysical Systems: A Backbone of the Fourth Industrial Revolution. *IEEE Industrial Electronics Magazine*, no. 1, vol. 11, pp. 6-16, 2017.
- A. R. Gottu Mukkula [40%] – R. Paulen [60%]: Optimal dynamic experiment design for guaranteed parameter estimation. Editor(s): Zdravko Kravanja, Miloš Bogataj, In *26th European Symposium on Computer Aided Process Engineering*, Elsevier B.V, Portorož, Slovenia, vol. 26, pp. 757–762, 2016.
236. Walz, Olga – Djelassi, Hatim – Caspari, Adrian – Mitsos, Alexander: Bounded-error optimal experimental design via global solution of constrained min-max program. *Computers & Chemical Engineering*, vol. 111, pp. 92-101, 2018.
- A. R. Gottu Mukkula [40%] – R. Paulen [60%]: Optimal Design of Dynamic Experiments for Guaranteed Parameter Estimation. In *American Control Conference*, Boston, Massachusetts, USA, pp. 1826–1831, 2016.

237. Walz, Olga – Djelassi, Hatim – Caspari, Adrian – Mitsos, Alexander: Bounded-error optimal experimental design via global solution of constrained min-max program. *Computers & Chemical Engineering*, vol. 111, pp. 92-101, 2018.

Paulen, R. [40%] – Nazari, S. [25%] – Shahidi, S. [15%] – Sonntag, C. [10%] – Engell, S. [10%]: Primal and Dual Decomposition for Distributed MPC – Theory, Implementation, and Comparison in a SoS Simulation Framework. V 24th Mediterranean Conference on Control and Automation (MED'16), IEEE, Athens, Greece, vol. 24, pp. 286–291, 2016.

238. von Esch, Maximilian Pierer, Voelz, Andreas, Graichen, Knut: Sensitivity-Based Distributed Model Predictive Control for Non-Linear Systems Under Inexact Optimization. *Optimal Control Applications & Methods*, no. 4, vol. 46, pp. 1538-1558, 2025.

S. Wenzel [60%] – R. Paulen [25%] – S. Krämer [5%] – B. Beisheim [5%] – S. Engell [5%]: Shared Resource Allocation in an Integrated Petrochemical Site by Price-based Coordination Using Quadratic Approximation. In *European Control Conference 2016*, Aalborg, Denmark, pp. 1045–1050, 2016.

239. Pérez-Perales, D. – Boza, A. – Alarcón, F. – Gómez-Gasquet, P.: Mathematical programming-based methodology for the evaluation of supply chain collaborative planning scenarios. *Annals of Operations Research*, no. 1, vol. 337, pp. 261-312, 2024.

240. Zhang, Q. – Allman, A.: Distributed cooperative industrial demand response. *Journal of Process Control*, vol. 86, pp. 81-93, 2020.

S. Wenzel [60%] – R. Paulen [25%] – S. Krämer [5%] – B. Beisheim [5%] – S. Engell [5%]: Price Adjustment in Price-based Coordination Using Quadratic Approximation. Editor(s): Zdravko Kravanja, Miloš Bogataj, In *26th European Symposium on Computer Aided Process Engineering*, Elsevier B.V, Portorož, Slovenia, vol. 26, pp. 193–198, 2016.

241. Schneider, Rene – Milosavljevic, Predrag – Bonvin, Dominique: Distributed modifier-adaptation schemes for the real-time optimisation of uncertain interconnected systems. *International Journal of Control*, no. 5, vol. 92, pp. 1123-1136, 2019.

F. Shamim [30%] – R. Hernández [30%] – R. Paulen [30%] – S. Engell [10%]: A hierarchical coordination approach to the optimal operation of a sugar crystallization process. Editor(s): Zdravko Kravanja, Miloš Bogataj, In *26th European Symposium on Computer Aided Process Engineering*, Elsevier B.V, Portorož, Slovenia, vol. 26, pp. 703–708, 2016.

242. Morales, H. – di Sciascio, F. – Aguirre-Zapata, E. – Amicarelli, A.: Crystallization Process in the Sugar Industry: A Discussion On Fundamentals, Industrial Practices, Modeling, Estimation and Control. *Food Engineering Reviews*, no. 3, vol. 16, 2024.

243. de Castro, Bruno J. C. – Marciniuk Junior, Meloci – Giulietti, Marco – Bernardo, Andre: SUCROSE CRYSTALLIZATION: MODELING AND EVALUATION OF PRODUCTION RESPONSES TO TYPICAL PROCESS FLUCTUATIONS. *Brazilian Journal of Chemical Engineering*, no. 3, vol. 36, pp. 1237-1253, 2019.

U. Sharma [40%] – S. Thangavel [15%] – A. R. Gottu Mukkula [15%] – R. Paulen [30%]: Effective Recursive Parallelotopic Bounding for Robust Output-Feedback Control. In *18th IFAC Symposium on System Identification*, IFAC, pp. 1032–1035, 2018.

244. Zhang, Shuai – Wang, Zi-Yun – Wang, Yan – Ji, Zhi-Cheng: A Novel Set-valued Observer Based State Estimation Algorithm for Nonlinear Systems. *INTERNATIONAL JOURNAL OF CONTROL AUTOMATION AND SYSTEMS*, no. 4, vol. 20, pp. 1266-1274, 2022.

S. Thangavel [40%] – M. Aboelnour [20%] – S. Lucia [15%] – R. Paulen [15%] – S. Engell [10%]: Robust Dual Multi-stage NMPC using Guaranteed Parameter Estimation. In *Preprints of the 6th IFAC Conference on Nonlinear Model Predictive Control*, Madison, Wisconsin, USA, pp. 74–79, 2018.

245. Wehbeh, J. – Sharf, I.: Nonlinear scenario-based model predictive control for quadrotors with bidirectional thrust. *International Journal of Robust and Nonlinear Control*, no. 18, vol. 34, pp. 12450-12475, 2024.

S. Subramanian [40%] – S. Lucia [30%] – S. A. Baradaran Birjandi [10%] – R. Paulen [10%] – S. Engell [10%]: A Combined Multi-stage and Tube-based MPC Scheme for Constrained Linear Systems. In *Preprints of the 6th IFAC Conference on Nonlinear Model Predictive Control*, Madison, Wisconsin, USA, pp. 577–582, 2018.

246. Jeong, Changhun – Furenes, Beathe – Sharma, Roshan: Implementation of simplified sequential stochastic model predictive control for operation of hydropower system under uncertainty. *Computers & Chemical Engineering*, no. 108409, vol. 179, pp. 108409, 2023.

247. Hanema, J. – Lazar, M. – Tóth, R.: Heterogeneously parameterized tube model predictive control for LPV systems. *Automatica*, vol. 111, 2020.

N. Peric [20%] – R. Paulen [30%] – M. Villanueva [10%] – B. Chachuat [40%]: Set-membership nonlinear regression approach to parameter estimation. *Journal of Process Control*, vol. 70, pp. 80–95, 2018.

248. Liu, Xin – Wang, Chen – Han, Guangjie: LPV Time-Delay System Identification and Its Application to the Centralized Heat-Supply System. *IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT*, vol. 71, pp. 3507111, 2022.

249. Liu, Z. – Wang, Z. – Wang, Y. – Ji, Z.: Optimal Zonotopic Kalman Filter-based State Estimation and Fault-diagnosis Algorithm for Linear Discrete-time System with Time Delay. *International Journal of Control, Automation and Systems*, 2022.

250. Li, Wenyu – Hegde, Arun – Oreluk, James – Packard, Andrew – Frenklach, Michael: Representing Model Discrepancy in Bound-to-Bound Data Collaboration. *Siam-asa Journal on Uncertainty Quantification*, no. 1, vol. 9, pp. 231-259, 2021.

251. Petsagkourakis, P. – Galvanin, F.: Safe model-based design of experiments using Gaussian processes. *Computers and Chemical Engineering*, vol. 151, pp. 107339, 2021.

252. Krichen, E. – Rapaport, A. – Fouilland, E.: About frame estimation of growth functions and robust prediction in bioprocess modeling. *Journal of Process Control*, vol. 85, pp. 121-135, 2020.

253. Walz, Olga – Djelassi, Hatim – Mitsos, Alexander: Optimal experimental design for optimal process design: A trilevel optimization formulation. *Aiche Journal*, no. 1, vol. 66, pp. e16788, 2020.

S. Thangavel [30%] – S. Lucia [30%] – R. Paulen [30%] – S. Engell [10%]: Dual robust nonlinear model predictive control: A multi-stage approach. *Journal of Process Control*, vol. 72, pp. 39–51, 2018.

254. Mathis, Andrew C., Carretero, Juan A., Sensinger, Jonathon W.: Beyond Adaptive Control: A Control Method for Nonlinear Systems With Uncertainties, Applied to COVID-19. *IEEE ACCess*, vol. 13, pp. 34667 – 34676, 2025.

255. Sass, Susanne, Mitsos, Alexander: Obscured by terminology: Hidden parallels in direct methods for open-loop optimal control. *Journal of Process Control*, vol. 154, 2025.

256. Ren, H. – Li, Y. – Wang, Y. – Chen, C.-K. – Yang, L. – Zhao, Y.: Learning-based model predictive control for safe path planning and control. *Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering*, 2024.

257. Arana-Jimenez, Manuel – Medvedev, Alexander V. – Chzhan, Ekaterina: A Nonparametric Dual Control Algorithm of Multidimensional Objects with Interval-Valued Observations. *Axioms*, no. 2, vol. 12, pp. 193, 2023.

258. Soloperto, Raffaele – Mueller, Matthias A. – Allgoewer, Frank: Guaranteed Closed-Loop Learning in Model Predictive Control. *IEEE Transactions on Automatic Control*, no. 2, vol. 68, pp. 991-1006, 2023.

259. Casas, Carlos Andres Elorza – Valipour, Mahshad – Sandoval, Luis A. Ricardez: Multi-scenario and multi-stage robust NMPC with state estimation application on the Tennessee-Eastman process. *Control Engineering Practice*, vol. 139, pp. 105635, 2023.

260. Byun, Ha-Eun – Kim, Boeun – Lee, Jay H.: Embedding active learning in batch-to-batch optimization using reinforcement learning. *Automatica*, vol. 157, pp. 111260, 2023.

261. Melatti, Igor – Mari, Federico – Mancini, Toni – Prodanovic, Milan – Tronci, Enrico: A Two-Layer Near-Optimal Strategy for Substation Constraint Management via Home Batteries. *IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS*, no. 8, vol. 69, pp. 8566-8578, 2022.

262. Sun, Jing-Gao – Chen, Xian-Feng – Su, Guang-Hao – Wang, Meng – Pan, Hong-Guang: Multi-stage Nonlinear Model Predictive Control with Online Scenario Update for Semi-batch Polymerization Processes. *International Journal of Control Automation and Systems*, no. 10, vol. 20, pp. 3187-3197, 2022.

263. Yoo, H. – Kim, B. – Kim, J.W. – Lee, J.H.: Reinforcement learning based optimal control of batch processes using Monte-Carlo deep deterministic policy gradient with phase segmentation. *Computers and Chemical Engineering*, vol. 144, pp. 107133, 2021.

264. Hu, J. – Zheng, S. – Liu, X. – Deng, J. – Wang, M. – Yan, F.: Optimizing the fault diagnosis and fault-tolerant control of selective catalytic reduction hydrothermal aging using the Unscented Kalman Filter observer. *Fuel*, vol. 288, pp. 119827, 2021.

265. Mappas, V. – Gangadharan, N. – Espasas, T. – Conejeros, R. – Ismaili, R.A. – Adloor, S.D. – Kähm, W. – Vassiliadis, V.S. – Nolasco, E. – Scott, F. – Zhang, Q.: Optimal control in chemical engineering: Past, present and future. *Computers and Chemical Engineering*, vol. 155, pp. 107528, 2021.

266. Mitrovic, A. – Clayton, G.M. – Leang, K.K.: Analysis and experimental comparison of range-based control for dual-stage nanopositioners. *Mechatronics*, no. 102371, vol. 69, 2020.
267. Varga, T. – Nagy, L. – Kummer, A.: NMPC-based control scheme for a semi-batch reactor under parameter uncertainty. *Computers and Chemical Engineering*, vol. 141, pp. 106998, 2020.
268. Koehler, Johannes – Koetting, Peter – Soloperto, Raffaele – Allgoewer, Frank – Mueller, Matthias A.: A robust adaptive model predictive control framework for nonlinear uncertain systems. *International Journal of Robust and Nonlinear Control*, 2020.
269. Piceno-Diaz, Ennio R. – Ricardez-Sandoval, Luis A. – Gutierrez-Limon, Miguel A. – Mendez-Acosta, Hugo O. – Puebla, Hector: Robust Nonlinear Model Predictive Control for Two-Stage Anaerobic Digesters. *Industrial & Engineering Chemistry Research*, no. 52, vol. 59, pp. 22559-22572, 2020.

A. Sharma [60%] – R. Valo [5%] – M. Kalúz [5%] – R. Paulen [10%] – M. Fikar [20%]: Implementation of optimal strategy to economically improve batch membrane separation. *Journal of Process Control*, vol. 76, pp. 155–164, 2019.

270. Trystram, G.: *Automatic control of industrial food processes*, pp. 351-390, 2022.
271. Wu, Xiaolong – Han, Honggui – Qiao, Junfei: Data-Driven Intelligent Warning Method for Membrane Fouling. *IEEE Transactions on Neural Networks and Learning Systems*, no. 8, vol. 32, pp. 3318-3329, 2021.
272. Wu, Xiao-Long – Han, Hong-Gui – Zhang, Hui-Juan – Qiao, Jun-Fei: Intelligent Warning of Membrane Fouling Based on Robust Deep Neural Network. *International Journal of Fuzzy Systems*, 2021.

W. Daosud [40%] – P. Kittisupakorn [5%] – M. Fikar [5%] – S. Lucia [10%] – R. Paulen [40%]: Efficient robust nonlinear model predictive control via approximate multi-stage programming: A neural networks based approach. Editor(s): Anton A. Kiss, Edwin Zondervan, Richard Lakerveld, Leyla Özkan, In *29th European Symposium on Computer Aided Process Engineering*, Elsevier, vol. 29, pp. 571–576, 2019.

273. Thombre, M. – (Joyce) Yu, Z. – Jäschke, J. – Biegler, L.T.: Sensitivity-Assisted multistage nonlinear model predictive control: Robustness, stability and computational efficiency. *Computers and Chemical Engineering*, vol. 148, pp. 107269, 2021.
274. Mitsos, A. – Kevrekidis, I.G. – Mhamdi, A. – Caspari, A. – Hamacher, N.C. – Vaupel, Y.: Accelerating nonlinear model predictive control through machine learning. *Journal of Process Control*, vol. 92, pp. 261-270, 2020.

M. Villanueva [40%] – X. Feng [30%] – R. Paulen [5%] – B. Chachuat [5%] – B. Houska [20%]: Convex Enclosures for Constrained Reachability Tubes. In *12th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems DYCOPS 2019*, Elsevier, pp. 118–123, 2019.

275. Scott, J. K. – Shen, K.: Exploiting nonlinear invariants and path constraints to achieve tighter reachable set enclosures using differential inequalities. *Mathematics of Control, Signals, and Systems*, no. 1, vol. 32, pp. 101-127, 2020.

P. Valiauga [50%] – R. Paulen [50%]: Moving-horizon Guaranteed Parameter Estimation. In *12th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems DYCOPS 2019*, Elsevier, pp. 112–117, 2019.

276. Houska, Boris, Müller, Matthias A., Villanueva, Mario Eduardo: Polyhedral control design: Theory and methods. *Annual Reviews in Control*, vol. 60, 2025.
277. Bernardi, E. – Morato, M.M. – Mendes, P.R.C. – Normey-Rico, J.E. – Adam, E.J.: Fault-tolerant energy management for an industrial microgrid: A compact optimization method. *International Journal of Electrical Power and Energy Systems*, vol. 124, pp. 106342, 2021.

Valero, C. E. [50%] – Paulen, R. [50%]: Effective Recursive Set-membership State Estimation for Robust Linear MPC. V *12th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems DYCOPS 2019*, Elsevier, pp. 486–491, 2019.

278. Wang, Zi-Yun, Wang, Yue, Wang, Yan: ZSM-IMM and ZPRM-IMM: Two novel interacting multiple model based state estimation algorithms for stochastic switching systems under unknown but bounded noise. *Isa Transactions*, vol. 163, pp. 131 – 138, 2025.

R. Paulen [95%] – M. Fikar [5%]: Dynamic real-time optimization of batch processes using Pontryagin's minimum principle and set-membership adaptation. *Computers & Chemical Engineering*, vol. 128, pp. 488–495, 2019.

279. Palma-Flores, Oscar – Andres-Martinez, Oswaldo – Ricardez-Sandoval, Luis A.: Optimal control and the Pontryagin's principle in chemical engineering: History, theory, and challenges. *AIChE JOURNAL*, no. 8, vol. 68, pp. e17777, 2022.
280. Zhang, L. – Li, P. – Chen, L. – Xia, S. – Kong, R. – Ge, Y. – Feng, H.: Entropy generation rate minimization for steam methane reforming reactor heated by molten salt. *Energy Reports*, vol. 6, pp. 685-697, 2020.
281. You, F. – Zhang, S. – Jia, R.: Transfer learning for end-product quality prediction of batch processes using domain-adaption joint-Y PLS. *Computers and Chemical Engineering*, no. 106943, vol. 140, 2020.

A. R. Gottu Mukkula [50%] – R. Paulen [50%]: Optimal experiment design in nonlinear parameter estimation with exact confidence regions. *Journal of Process Control*, vol. 83, pp. 187–195, 2019.

282. Bubel, Martin, Seufert, Philipp, Karpov, Gleb, Schwientek, Jan, Bortz, Michael, Oseledets, Ivan: Optimal experimental design: from design point to design region. *Statistical Papers*, no. 5, vol. 66, 2025.
283. Lyu, Wenyao, Galvanin, Federico: DoE-SINDy: an automated framework for model generation and selection in kinetic studies. *Computers and Chemical Engineering*, vol. 202, 2025.
284. Bubel, M. – Schmid, J. – Kozachynskyi, V. – Esche, E. – Bortz, M.: Sequential optimal experimental design for vapor-liquid equilibrium modeling. *Chemical Engineering Science*, vol. 300, pp. 120566, 2024.
285. Herrero, E.R. – Llata, J.R. – Sainz, J.J. – Velasco, F.J. – Renteria, L.A.: Experiment design for model basin tests with a remotely operated vehicle. *Ocean Engineering*, vol. 307, pp. 118215, 2024.

286. Reddy, R.S. – Arepally, D. – Datta, A.K.: Inverse problems in food engineering: A review. *Journal of Food Engineering*, vol. 319, pp. 110909, 2022.

287.

K. Kusumo [30%] – L. Gomoescu [25%] – R. Paulen [15%] – S. García Muñoz [5%] – C. C. Pantelides [5%] – N. Shah [5%] – B. Chachuat [15%]: Bayesian Approach to Probabilistic Design Space Characterization: A Nested Sampling Strategy. *Industrial & Engineering Chemistry Research*, no. 6, vol. 59, pp. 2396–2408, 2020.

288. Kay, Sam, Zhu, Mengjia, Lane, Amanda, Shaw, Jane, Zhang, Dongda: A Surrogate-Enhanced Framework for flexible and optimal operational space identification under uncertainty. *Chemical Engineering Science*, no. C, vol. 321, 2026.

289. Narciso, Diogo A. C., Sachio, Steven, Papathanasiou, Maria M.: A novel framework for flexibility assessment in design spaces defined by a set of affine bounds. *Computers & Chemical Engineering*, vol. 200, pp. 109189, 2025.

290. Sarkis, Miriam, Sachio, Steven, Papathanasiou, Maria M.: A Process Systems Engineering approach towards responsive and sustainable (bio-)pharmaceutical supply chains. *Computers and Chemical Engineering*, vol. 201, 2025.

291. Meng, Qingbo, Bogle, David, Charitopoulos, Vassilis M.: Probabilistic design space exploration and optimization via bayesian approach for a fluid bed drying process. *European Journal of Pharmaceutical Sciences*, vol. 210, pp. 107116, 2025.

292. Tayebi, Seyed Saeid, Hoare, Todd, Mhaskar, Prashant: Fast-tracking design space identification with the prediction reliability enhancing parameter (PREP). *Computers & Chemical Engineering*, vol. 199, pp. 109159, 2025.

293. Duarte, Joana Galvao, Duarte, Maria Galvao, Piedade, Ana Paula, Mascarenhas-Melo, Filipa: Rethinking Pharmaceutical Industry with Quality by Design: Application in Research, Development, Manufacturing, and Quality Assurance. *Aaps Journal*, no. 4, vol. 27, 2025.

294. Shahab, Mohammad, Bachawala, Sunidhi, Gonzalez, Marcial, Nagy, Zoltan, Reklaitis, Gintaras: A hybrid system for design space estimation in a rotary tablet press. *International Journal of Pharmaceutics*, vol. 678, pp. 125663, 2025.

295. Moshiritabrizi, Iman, McMullen, Jonathan P., Wyvratt, Brian M., McAuley, Kimberley B.: A Comparative Study of Strategies for Incorporating Uncertainty in Design Space Determination for Pharmaceutical Manufacturing. *Industrial & Engineering Chemistry Research*, no. 45, vol. 64, pp. 21658-21668, 2025.

296. Hirono, Keita, Hayashi, Yusuke, Kino-oka, Masahiro, Sugiyama, Hirokazu: Model-based design of mesenchymal stem cell seeding-cultivation-passage processes considering dynamics and variabilities. *Computers & Chemical Engineering*, vol. 200, pp. 109165, 2025.

297. Huayu Tian – Jnana Sai Jagana – Qi Zhang – Marianthi Ierapetritou: Feasibility/Flexibility-based optimization for process design and operations. *Computers & Chemical Engineering*, vol. 180, pp. 108461, 2024.

298. Chang, H. – Domagalski, N. – Tabora, J.E. – Tom, J.W.: Bayesian data-driven models for pharmaceutical process development. *Current Opinion in Chemical Engineering*, vol. 45, pp. 101034, 2024.

299. Friso, A. – Galvanin, F.: An optimization-free Fisher information driven approach for online design of experiments. *Computers and Chemical Engineering*, vol. 187, pp. 108724, 2024.

300. Zhu, Q. – Zhao, Z. – Liu, F.: Product Design for Batch Processes Based on Iterative Learning-Latent Variable Model Inversion (IL-LVMI). *Industrial and Engineering Chemistry Research*, no. 25, vol. 63, pp. 11057-11068, 2024.
301. Gibson, L.A. – McAuley, K.B.: Bayesian parameter estimation using truncated normal distributions as priors for parameters in fundamental models of chemical processes. *Canadian Journal of Chemical Engineering*, 2024.
302. Oberleitner, T. – Zahel, T. – Herwig, C.: Identifying design spaces as linear combinations of parameter ranges for biopharmaceutical control strategies. *Computers and Chemical Engineering*, vol. 183, 2024.
303. Peterson, John J.: Response surfaces, blocking, and split plots: A predictive distribution case study. *Quality Engineering*, no. 1, vol. 35, pp. 172-191, 2023.
304. Steven Sachio – Cleo Kontoravdi – Maria M. Papathanasiou: A model-based approach towards accelerated process development: A case study on chromatography. *Chemical Engineering Research and Design*, vol. 197, pp. 800-820, 2023.
305. Jiang, S. -. – Papageorgiou, L. G. – Bogle, I. D. L. – Charitopoulos, V. M.: Investigating the Trade-Off between Design and Operational Flexibility in Continuous Manufacturing of Pharmaceutical Tablets: A Case Study of the Fluid Bed Dryer. *Processes*, no. 3, vol. 10, pp. 454, 2022.
306. Destro, F. – Barolo, M.: A review on the modernization of pharmaceutical development and manufacturing – Trends, perspectives, and the role of mathematical modeling. *International journal of pharmaceutics*, vol. 620, pp. 121715, 2022.
307. Saadeh, Q. – Naujok, P. – Wu, M. – Philipsen, V. – Thakare, D. – Scholze, F. – Buchholz, C. – Stadelhoff, C. – Wiesner, T. – Soltwisch, V.: Nested Sampling aided determination of tantalum optical constants in the EUV spectral range. *Applied Optics*, no. 33, vol. 61, pp. 10032-10042, 2022.
308. Granados-Ortiz, F.-J. – Ortega-Casanova, J.: Machine learning-aided design optimization of a mechanical micromixer. *Physics of Fluids*, no. 6, vol. 33, pp. 063604, 2021.
309. Vandercammen, A. – Dessoy, S. – Sanders, M. – Pysik, A. – Geldhof, G. – Schenkendorf, R. – von Stosch, M. – Mariti, M. – Varsakelis, C.: Working within the design space: Do our static process characterization methods suffice?. *Pharmaceutics*, no. 6, vol. 12, pp. 1-15, 2020.
- S. Thangavel [60%] – R. Paulen [30%] – S. Engell [10%]: Adaptive multi-stage NMPC using sigma point principles. In *European Control Conference 2020*, pp. 196–201, 2020.
310. Landgraf, Daniel – Voelz, Andreas – Berkel, Felix – Schmidt, Kevin – Specker, Thomas – Graichen, Knut: Probabilistic prediction methods for nonlinear systems with application to stochastic model predictive control. *Annual Reviews in Control*, no. 100905, vol. 56, 2023.
311. Meng, F. – Shen, X. – Karimi, H. R.: Emerging methodologies in stability and optimization problems of learning-based nonlinear model predictive control: A survey. *International Journal of Circuit Theory and Applications*, no. 11, vol. 50, pp. 4146-4170, 2022.
312. Bonzanini, A.D. – Paulson, J.A. – Makrygiorgos, G. – Mesbah, A.: Fast approximate learning-based multistage nonlinear model predictive control using Gaussian processes and deep neural networks. *Computers and Chemical Engineering*, pp. 107174, 2021.

S. Thangavel [75%] – R. Paulen [15%] – S. Engell [10%]: Robust Multi-Stage Nonlinear Model Predictive Control Using Sigma Points. *Processes*, no. 7, vol. 8, pp. 0851, 2020.

313. Naik, Sakshi, Ghilardi, Lavinia, Parker, Robert, Biegler, Lorenz T.: Multistage economic MPC for systems with a cyclic steady state: A gas network case study. *Chemical Engineering Science*, vol. 319, 2026.
314. Mathis, Andrew C., Carretero, Juan A., Sensinger, Jonathon W.: Beyond Adaptive Control: A Control Method for Nonlinear Systems With Uncertainties, Applied to COVID-19. *IEEE Access*, vol. 13, pp. 34667 – 34676, 2025.
315. Soloperto, Raffaele – Muller, Matthias A. – Allgower, Frank: Guaranteed Closed-Loop Learning in Model Predictive Control. *IEEE Transactions on Automatic Control*, no. 2, vol. 68, pp. 991-1006, 2023.
316. Casas, Carlos Andres Elorza – Valipour, Mahshad – Sandoval, Luis A. Ricardez: Multi-scenario and multi-stage robust NMPC with state estimation application on the Tennessee-Eastman process. *Control Engineering Practice*, vol. 139, pp. 105635, 2023.
317. Kaplan, Ido – Erew, Muhammad – Piasetzky, Yonatan – Goldstein, Moshe – Oz, Yaron – Suchowski, Haim: Segmented composite design of robust single-qubit quantum gates. *Physical Review A*, vol. 108, pp. 042401, 2023.
318. Polcz, P. – Csutak, B. – Szederkényi, G.: Reconstruction of Epidemiological Data in Hungary Using Stochastic Model Predictive Control. *Applied Sciences (Switzerland)*, no. 3, vol. 12, pp. 1113, 2022.
319. Propson, T. – Jackson, B. E. – Koch, J. – Manchester, Z. – Schuster, D. I.: Robust Quantum Optimal Control with Trajectory Optimization. *Physical Review Applied*, no. 1, vol. 17, pp. 014036, 2022.

S. Thangavel [60%] – R. Paulen [30%] – S. Engell [10%]: Multi-stage NMPC using sigma point principles. In *6th Conference on Advances in Control and Optimization of Dynamical Systems ACODS 2020*, Elsevier, vol. 53, pp. 386–391, 2020.

320. de Oliveira, Rafael D., Jaschke, Johannes: Multi-stage Economic Nonlinear Model Predictive Control of bioreactors using dynamic flux balance analysis models. *Journal of Process Control*, vol. 157, pp. 103595, 2026.
321. Mathis, Andrew C., Carretero, Juan A., Sensinger, Jonathon W.: Beyond Adaptive Control: A Control Method for Nonlinear Systems With Uncertainties, Applied to COVID-19. *IEEE Access*, vol. 13, pp. 34667 – 34676, 2025.
322. Panda, A. – Thirunavukarasu, N. – Panda, R.C.: Predictive control scheme by integrating event-triggered mechanism and disturbance observer under actuator failure and sensor fault. *Proceedings of the Institution of Mechanical Engineers. Part I: Journal of Systems and Control Engineering*, no. 4, vol. 238, pp. 621-647, 2024.
323. Landgraf, Daniel – Voelz, Andreas – Berkel, Felix – Schmidt, Kevin – Specker, Thomas – Graichen, Knut: Probabilistic prediction methods for nonlinear systems with application to stochastic model predictive control. *Annual Reviews in Control*, no. 100905, vol. 56, 2023.

S. Thangavel [60%] – R. Paulen [30%] – S. Engell [10%]: Dual multi-stage NMPC using sigma point principles. Editor(s): Rolf Findeisen, Sandra Hirche, Klaus Janschek, Martin Mönnigmann, In *Preprints of the 21st IFAC World Congress (Virtual), Berlin, Germany, July 12-17, 2020*, vol. 21, pp. 11394–11401, 2020.

324. Polcz, P. – Csutak, B. – Szederkényi, G.: Reconstruction of Epidemiological Data in Hungary Using Stochastic Model Predictive Control. *Applied Sciences (Switzerland)*, no. 3, vol. 12, pp. 1113, 2022.
- Valero, C. E. [25%] – Villanueva, M. [25%] – Houska, B. [25%] – Paulen, R. [25%]: Set-Based State Estimation: A Polytopic Approach. 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, vol. 21, pp. 11428–11433, 2020.
325. Pouthier, Florian, Durand, Sylvain, Marchand, Nicolas, Dumon, Jonathan, Ndoye, Abdoullah, Negre, Amaury, Susbielle, Pierre, Castillo-Zamora, Jose J., Guerrero Castellanos, J. Fermi, Ruffier, Franck: Guaranteed Self-Triggered Control of Disturbed Systems: A Set Invariance Approach. *International Journal of Robust and Nonlinear Control*, no. 15, vol. 35, pp. 6429 – 6443, 2025.
- K. Kusumo [25%] – L. Gomoescu [25%] – R. Paulen [15%] – S. García Muñoz [5%] – C. C. Pantelides [5%] – N. Shah [5%] – B. Chachuat [20%]: Nested Sampling Strategy for Bayesian Design Space Characterization. Editor(s): Sauro Pierucci, Flavio Manenti, Giulia Luisa Bozzano, Davide Manca, In *30th European Symposium on Computer Aided Process Engineering*, Elsevier, vol. 30, pp. 1957–1962, 2020.
326. Pathirannahalage, Pasindu Herath, Nabetani, Ayumu, Kato, Shota, Sato, Kanta, Yaginuma, Keita, Tanabe, Shuichi, Kano, Manabu: Proactive-residence time distribution method for determining low-risk setpoints of critical material attributes in pharmaceutical continuous manufacturing. *International Journal of Pharmaceutics*, vol. 682, 2025.
327. Udugama, Isuru A. – Badr, Sara – Hirono, Keita – Scholz, Benedikt X. – Hayashi, Yusuke – Kino-oka, Masahiro – Sugiyama, Hirokazu: The role of process systems engineering in applying quality by design (QbD) in mesenchymal stem cell production. *Computers & Chemical Engineering*, vol. 172, pp. 108144, 2023.
328. Kino-Oka, M. – Hayashi, Y. – A. Udugama, I. – Hirono, K. – Sugiyama, H.: A Dynamic and Probabilistic Design Space Determination Method for Mesenchymal Stem Cell Cultivation Processes. *Industrial and Engineering Chemistry Research*, no. 20, vol. 61, pp. 7009 - 7019, 2022.
329. Kaiya, Y. – Tamura, R. – Tsuda, K.: Understanding Chemical Processes with Entropic Sampling. *Organic Process Research and Development*, no. 12, vol. 26, pp. 3276-3282, 2022.
- H. Thompson [20%] – R. Paulen [20%] – M. Reniers [20%] – C. Sonntag [20%] – S. Engell [20%]: Analysis of the State-of-the-Art and Future Challenges in Cyber-physical Systems of Systems. 2015.
330. Rojas, Rafael A. – Rauch, Erwin: From a literature review to a conceptual framework of enablers for smart manufacturing control. *International Journal of Advanced Manufacturing Technology*, no. 1-4, vol. 104, pp. 517-533, 2019.
331. Lucia, Sergio – Koegel, Markus – Zometa, Pablo – Quevedo, Daniel E. – Findeisen, Rolf: Predictive control, embedded cyberphysical systems and systems of systems - A perspective. *Annual Reviews in Control*, vol. 41, pp. 193-207, 2016.
- S. Subramanian [40%] – S. Lucia [30%] – R. Paulen [20%] – S. Engell [10%]: Tube-enhanced multi-stage model predictive control for flexible robust control of constrained linear systems with additive

and parametric uncertainties. *International Journal of Robust and Nonlinear Control*, no. 9, vol. 31, pp. 4458–4487, 2021.

332. Bastos, Guaraci, Franco, Enrico: Dynamic tube model predictive control for a class of soft manipulators with fluidic actuation. *International Journal of Robust and Nonlinear Control*, no. 7, vol. 35, pp. 2780 – 2799, 2025.
333. Schwenkel, Lukas – Koehler, Johannes – Mueller, Matthias A. A. – Allgoewer, Frank: Model Predictive Control for Linear Uncertain Systems Using Integral Quadratic Constraints. *IEEE Transactions on Automatic Control*, no. 1, vol. 68, pp. 355-368, 2023.
334. Bastos, G., Jr. – Franco, E.: Dynamic tube model predictive control for a class of soft manipulators with fluidic actuation. *International Journal of Robust and Nonlinear Control*, 2023.
335. Sebghati, Ashkan – Esfahani, Mahyar Madani – Shamaghdari, Saeed: On the design of efficient optimal tube-based robust model predictive control: Quasi- H_{∞} approach. *Iet Control Theory and Applications*, no. 12, vol. 17, pp. 1703-1719, 2023.
336. Zhang, Qiang – Liu, Ping – Chen, Yu – Deng, Quan – Tong, Angxin: Disturbance Observer-Based Terminal Sliding Mode Tracking Control for a Class of Nonlinear SISO Systems with Input Saturation. *Processes*, no. 7, vol. 11, 2023.
337. Li, Yang – Vilathgamuwa, D. Mahinda – Quevedo, Daniel E. – Lee, Chih Feng – Zou, Changfu: Ensemble Nonlinear Model Predictive Control for Residential Solar Battery Energy Management. *IEEE Transactions on Control Systems Technology*, no. 5, vol. 31, pp. 2188-2200, 2023.
338. Janatian, Nima – Sharma, Roshan: A robust model predictive control with constraint modification for gas lift allocation optimization. *Journal of Process Control*, vol. 128, pp. 102996, 2023.
339. Zhou, Chengyu – Jia, Li – Zhou, Yang: Tube-based batch model predictive control for polystyrene polymerization reaction process. *Asia-pacific Journal of Chemical Engineering*, no. e2906, 2023.
340. Mowbray, M. – Petsagkourakis, P. – del Rio-Chanona, E.A. – Zhang, D.: Safe chance constrained reinforcement learning for batch process control. *Computers and Chemical Engineering*, vol. 157, pp. 107630, 2022.
341. Alvarado, I. – Krupa, P. – Limon, D. – Alamo, T.: Tractable robust MPC design based on nominal predictions. *Journal of Process Control*, vol. 111, pp. 75-85, 2022.
342. Farajzadeh Devin, M. G. – Hosseini Sani, S. K.: Two-loop robust model predictive control with improved tube for industrial applications. *International Journal of Systems Science*, 2022.
343. Parihar, Sushma – Shah, Pritesh – Sekhar, Ravi – Lagoo, Jui: Model Predictive Control and Its Role in Biomedical Therapeutic Automation: A Brief Review. *Applied System Innovation*, no. 6, vol. 5, pp. 118, 2022.
344. Shi, Y. – Zhang, K.: Advanced model predictive control framework for autonomous intelligent mechatronic systems: A tutorial overview and perspectives. *Annual Reviews in Control*, vol. 52, pp. 170-196, 2021.

M. Mojto [40%] – K. Lubušký [10%] – M. Fikar [20%] – R. Paulen [30%]: Data-based Industrial Soft-sensor Design via Optimal Subset Selection. Editor(i): Metin Türkay, Rafiqul Gani, V 31st

European Symposium on Computer Aided Process Engineering, Elsevier, vol. 31, pp. 1247–1252, 2021.

345. Sildir, H., Boy, O.C., Sarrafi, S.: A Mixed-Integer Formulation for the Simultaneous Input Selection and Outlier Filtering in Soft Sensor Training. *Information Systems Frontiers*, 2024.

M. Mojto [40%] – K. Lubušký [10%] – M. Fikar [20%] – R. Paulen [30%]: Data-based design of inferential sensors for petrochemical industry. *Computers & Chemical Engineering*, vol. 153, pp. 107437, 2021.

346. Wang, Feng, Zhao, Hui, Li, Xiaozhi, Bian, Jing: Monitoring and early warning method for abnormal conditions in complex processes based on bidirectional causal reasoning and its application in diesel hydrotreating plants. *Journal of Loss Prevention in the Process Industries*, no. 105771, vol. 99, 2026.

347. Snegirev, Oleg, Klimchenko, Vladimir, Shtakin, Denis, Torgashov, Andrei, Yang, Fan: Multivariable soft sensor with a predictor of mutually dependent errors applied to an industrial fractionator. *Journal of Process Control*, no. 103555, vol. 155, 2025.

348. Wang, Ziyuan, Liu, Yishun, Yang, Chunhua: Spatiotemporal uncertainty-aware predictive control for industrial distributed parameters systems. *Computers & Chemical Engineering*, pp. 109307, vol. 202, 2025.

349. Dai, Siyang – Cao, Deshun – Li, Na – Guo, Yian – Wang, Hao: Multiphysics modeling and experimental analysis of corrosion-assisted degradation in industrial pressure transducer packages under thermomechanical fatigue. *Materials Chemistry and Physics*, no. 129811, vol. 326, 2024.

350. Sanseverinatti, Carlos I. – Perdomo, Mariano M. – Clementi, Luis A. – Vega, Jorge R.: An Adaptive Soft Sensor for On-Line Monitoring the Mass Conversion in the Emulsion Copolymerization of the Continuous SBR Process. *Macromolecular Reaction Engineering*, 2023.

351. Ikonen, Teemu J. – Bergman, Samuli – Corona, Francesco: A Bayesian inferential sensor for predicting the reactant concentration in an exothermic chemical process. *Chemometrics and Intelligent Laboratory Systems*, vol. 241, pp. 104942, 2023.

A. R. Gottu Mukkula [20%] – M. Mateáš [5%] – M. Fikar [5%] – R. Paulen [70%]: Robust multi-stage model-based design of optimal experiments for nonlinear estimation. *Computers & Chemical Engineering*, vol. 155, pp. 107499, 2021.

352. Bubel, Martin, Seufert, Philipp, Karpov, Gleb, Schwientek, Jan, Bortz, Michael, Oseledets, Ivan: Optimal experimental design: from design point to design region. *Statistical Papers*, no. 5, vol. 66, 2025.

353. Elsayed, Mahmoud Naguib, De Silva, Oscar, Jayasiri, Awantha, Mann, George K.I., Gosine, Raymond: Optimization-Based Maneuvering Target Tracking Using Multiple Model Horizon Scenario Tree With Model Interaction. *IEEE Transactions on Aerospace and Electronic Systems*, no. 6, vol. 61, pp. 15341 – 15357, 2025.

354. Bubel, Martin – Schmid, Jochen – Kozachynskiy, Volodymyr – Esche, Erik – Bortz, Michael: Sequential optimal experimental design for vapor-liquid equilibrium modeling. *Chemical Engineering Science*, no. 120566, vol. 300, 2024.

355. Gibson, Lauren A. – Liu, Fei F. – Harris, Thomas J. – McAuley, Kimberley B.: Simple Method for Incorporating Prior Parameter Information during Model-Based D-Optimal

- Design of Experiments for Multi-Response Chemical Process Models. *Industrial & Engineering Chemistry Research*, no. 24, vol. 63, pp. 10651-10665, 2024.
356. Stroebel, Florian – Schaeufl, Florian – Bohlen, Oliver – Palm, Herbert: Multi-Stage Optimal Experimental Design and Setup Strategies in Absence of System Pre-Knowledge. *IEEE Access*, vol. 12, pp. 120440-120453, 2024.
357. Huang, Chunbing – Cattani, Federica – Galvanin, Federico: An optimal experimental design strategy for improving parameter estimation in stochastic models. *Computers & Chemical Engineering*, vol. 170, pp. 108133, 2023.
358. Carlos {de la Calle-Arroyo} – Mariano Amo-Salas – Jesús López-Fidalgo – Licesio J. Rodríguez-Aragón – Weng Kee Wong: A methodology to D-augment experimental designs. *Chemometrics and Intelligent Laboratory Systems*, vol. 237, pp. 104822, 2023.
359. Fleitmann, L. – Pyschik, J. – Wolff, L. – Schilling, J. – Bardow, A.: Optimal experimental design of physical property measurements for optimal chemical process simulations. *Fluid Phase Equilibria*, vol. 557, pp. 113420, 2022.
360. Wang, J. – Dowling, A. W.: Pyomo.DOE: An open-source package for model-based design of experiments in Python. *AIChE Journal*, 2022.
361. Lu, Q.: Molecular structure recognition by blob detection. *RSC Advances*, no. 57, vol. 11, pp. 35879-35886, 2021.
- Gottu Mukkula, A. R. [40%] – Paulen, R. [60%]: Robust Design of Optimal Experiments Considering Consecutive Re-Designs. Editor(i): Luis Ricardez-Sandoval, Jesus Pico, V 13th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems, IFAC, pp. 14–19, 2022.
362. Sugianto, W., Haq, R.H.A., Rahman, M.N.B.A.: Automobile Workshop Queue System Optimization Using Response Surface. *International Journal of Industrial Engineering and Production Research*, no. 1, vol. 35, 2024.
- M. Mojto [40%] – K. Lubušký [5%] – M. Fikar [20%] – R. Paulen [35%]: Support Vector Machine-based Design of Multi-model Inferential Sensors. Editor(s): Ludovic Montastruc, Stephane Negny, In *32nd European Symposium on Computer Aided Process Engineering*, Elsevier, no. 1, vol. 32, pp. 1045–1050, 2022.
363. Liu, T. – Chen, S. – Yang, P. – Zhu, Y. – Mercangoz, M. – Harris, C.J.: Lifelong Learning Meets Dynamic Processes: An Emerging Streaming Process Prediction Framework With Delayed Process Output Measurement. *IEEE Transactions on Control Systems Technology*, no. 2, vol. 32, pp. 384-398, 2024.
364. Kappatou, Chrysoula D. – Odgers, James – García-Muñoz, Salvador – Misener, Ruth: An Optimization Approach Coupling Preprocessing with Model Regression for Enhanced Chemometrics. *Industrial and Engineering Chemistry Research*, 2022.
- M. Mojto [45%] – K. Lubušký [5%] – M. Fikar [10%] – R. Paulen [40%]: Data-Driven Indication of Flooding in an Industrial Debutanizer Column. Editor(s): Antonis Kokossis, Michael C. Georgiadis, Efstratios N. Pistikopoulos, In *33rd European Symposium on Computer Aided Process Engineering*, Elsevier, no. 1, vol. 33, pp. 1001–1006, 2023.
365. Abdullah, A.S. – Ayoob, H.W. – Homod, R.Z. – Mohammed, H.I.: Enhancing liquefied petroleum gas production through debutanizer column optimization. *Chemical Engineering Research and Design*, vol. 206, pp. 242-250, 2024.

Mojto, M. [40%] – Lubušký, K. [10%] – Fikar, M. [10%] – Paulen, R. [40%]: Data-Based Design of Multi-Model Inferential Sensors. *Computers & Chemical Engineering*, vol. 178, 2023.

366. Wang, Feng, Zhao, Hui, Li, Xiaozhi, Bian, Jing: Monitoring and early warning method for abnormal conditions in complex processes based on bidirectional causal reasoning and its application in diesel hydrotreating plants. *Journal of Loss Prevention in the Process Industries*, pp. 105771, vol. 99, 2026.
367. Sezer, Emine, Dokuzparmak, Emre, Ozcelik, Hilal, Yasar, Esra, Kaya, Tarik, Guner, Timucin, Akgol, Sinan: Harnessing Machine Learning to Revolutionize Electrochemical Detection of Vitamin E Acetate in E-Liquids. *Acs Omega*, no. 25, vol. 10, pp. 27098-27111, 2025.
368. Safikou, Efi, Pattipati, Krishna R., Bolas, George M.: On the Optimization of Hard and Soft Sensing via Symbolic Regression for Enhanced Fault Detection in Feedback Control Systems, *IEEE Transactions on Control Systems Technology*, 2026, doi: 10.1109/TCST.2026.3653926.

Maidi, A. [70%] – Paulen, R. [15%] – Corriou, J. [15%]: Velocity control design of hyperbolic distributed parameter systems using zeroing dynamics and zeroing-gradient dynamics methods. *Journal of Process Control*, vol. 138, pp. 103210, 2024.

369. Meng, Zhongchen, Jiang, Yushan, Dong, Nier, Wang, Wanyue, Chang, Yunxiao, Ma, Ruoxiang: On the Canonical Form of Singular Distributed Parameter Systems. *Axioms*, no. 8, vol. 14, 2025.
370. Tang, Xinhui, Zhou, Chenchen, Su, Hongxin, Cao, Yi, Yang, Shuang-Hua: Late lumping controlled variable design for transport reaction processes. *Journal of Process Control*, vol. 152, pp. 103464, 2025.
371. Iavorschi, Eugen, Milici, Laurentiu Dan, Atanasoae, Pavel, Ungureanu, Constantin: An Experimental and Numerical Investigation of a Passive Façade and Proposals for Improving Its Energy Performance. *Energies*, no. 2, vol. 18, 2025.

V Bratislave, dňa 31. 1. 2026

prof. Ing. Miroslav Fikar, DrSc.

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