

Kris Villez

Publication List

Underlined text: supervised students and postdoctoral researchers

Peer-reviewed publications

- 1 Gagnon, A, **Villez, K**, Bott, C (2023). Application of Step-Response Lambda Tuning to Proportional-Integral (PI) Controllers in Water Resource Recovery Facilities. *Wat Sci Technol*, 18(9), 2080–2095.
- 2 Derlon, N, **Villez, K** (2023). Editorial: Water resource recovery modelling 2021 (WRRmod2021 conference). *Wat Sci Technol*, 87(12), iii–iv.
- 3 Klandermann, M C, Lee, J, **Villez, K**, Cath, T, Hering, A (2023). Adaptive Online Multivariate Signal Extraction with Locally Weighted Robust Polynomial Regression. *Data Science in Science*, 2(1), 1–15.
- 4 Aguado, D, Blumensaat, F, Baeza, J A, **Villez, K**, Ruano, M V, Samuelsson, O, Plana, Q, Alferez, J (2023). El valor de los metadatos para las estaciones de recuperación de recursos del agua. (The value of metadata for water resource recovery facilities, in Spanish). *Ribagua*, 9(1), 1–9.
- 5 Chowdhury, D, **Villez, K** (2023). Qualitative trend analysis based on a mixed-integer representation. *Comp Chem Eng*, 170, 108109.
- 6 Schneider, M Y, Harada, H, **Villez, K**, Maurer, M (2023). Several Small or Single Large? Quantifying the Catchment-Wide Performance of On-Site Wastewater Treatment Plants with Inaccurate Sensors. *Environ Sci Technol*, 57(2), 1114–1122.
- 7 Kerkez, B, **Villez, K**, Volcke, E I P (2022). Editorial: Themed issue on data-intensive water systems management and operation. *Environ Sci: Water Res Technol*, 8, 2032–2033.
- 8 Russo, S, Besmer, M D, Blumensaat, F, Bouffard, D, Disch, A, Hammes, F, Hess, A, Lürig, M, Matthews, B, Minaudo, C, Morgenroth, E, Tran-Khac, V, **Villez, K** (2021). The value of human data annotation for machine learning based anomaly detection in environmental systems. *Wat Res*, 206, 117695.
- 9 Russo, S, Lürig, M, Hao, W, Matthews, B, **Villez, K** (2020). Active learning for anomaly detection in environmental data. *Environ Modell and Softw*, 134, 104869.
- 10 Schneider, M Y, Furrer, V, Sprenger, E, Carbajal, J P, **Villez, K**, Maurer, M (2020). Benchmarking soft-sensors for remote monitoring of on-site wastewater treatment plants. *Environ Sci Technol*, 54, 10840–10849.

- 11 **Villez, K**, Del Giudice, D, Neumann, M B, Rieckermann, J (2020). Accounting for erroneous model structures in biokinetic process models. *Reliab Eng Syst Saf*, 203, 107075.
- 12 Britschgi, L, **Villez, K**, Schrems, P, Udert, K M (2020). Electrochemical nitrite sensing for urine nitrification. *Wat Res X*, 9, 100055.
- 13 **Villez, K**, Vanrolleghem, P A, Corominas, L I (2020). A general-purpose method for Pareto optimal placement of flow rate and concentration sensors in networked systems – With application to wastewater treatment plants. *Comp Chem Eng*, 139, 106880.
- 14 Ohmura, K, Thürlmann, C M, Kipf, M, Carbajal, J P, **Villez, K** (2019). Characterizing long-term wear and tear of ion-selective pH sensors. *Wat Sci Technol*, 80(3), 541–550.
- 15 Gruber, W, **Villez, K**, Kipf, M, Wunderlin, P, Siegrist, H, Vogt, L, Joss, A (2019). N₂O emission in full-scale wastewater treatment: Proposing a refined monitoring strategy. *Sci Total Environ*, 699, 134157.
- 16 Thürlmann, C M, Udert, K M, Morgenroth, E, **Villez, K** (2019). Stabilizing control of a urine nitrification process in the presence of sensor drift. *Wat Res*, 165, 114958.
- 17 Russo, S, Li, G, **Villez, K** (2019). Automated model selection in principal component analysis: A new approach based on the cross-validated ignorance score. *Ind Eng Chem Res*, 58(30), 13448–13468.
- 18 Schneider, M Y, Carbajal, J P, Furrer, V, Maurer, M, **Villez, K** (2019). Beyond signal quality: The value of unmaintained pH, dissolved oxygen, and oxidation-reduction potential sensors for remote performance monitoring of on-site sequencing batch reactors. *Wat Res*, 161, 639–651.
- 19 Blumensaat, F, Leitao, J P, Ort, C, Rieckermann, J, Shaw, A, Vanrolleghem, P A, **Villez, K** (2019). How urban water management prepares for emerging opportunities and threats: Digital transformation, ubiquitous sensing, new data sources, and beyond – A horizon scan. *Environ Sci Technol*, 53(15), 8488–8498.
- 20 Mansfeldt, C, Achermann, S, Men, Y, Walser, J-C, **Villez, K**, Joss, A, Johnson, D R, Fenner, K (2019). Microbial residence time is a controlling parameter of the taxonomic composition and functional profile of microbial communities. *The ISME Journal*, 13(6), 1589–1601.
- 21 **Villez, K**, Billeter, J, Bonvin, D (2019). Incremental parameter estimation under rank-deficient measurement conditions. *Processes*, 7(2), 75.
- 22 Laureni, M, Weissbrodt, D G, **Villez, K**, Robin, O, de Jonge, N, Rosenthal, A, Wells, G, Nielsen, J L, Morgenroth, E, Joss, A (2019). Biomass segregation between biofilm and flocs improves the control of nitrite-oxidizing bacteria in mainstream partial nitritation and anammox processes. *Wat Res*, 154, 104–116.

- 23 Regmi, P, Stewart, H, Amerlinck, Y, Arnell, M, Juan Garcia, P , Johnson, B, Maere, T, Miletic, I, Miller, M W , Rieger, L, Samstag, R, Santoro, D, Schraa, O, Srinivasan, S, Takács, I, Torfs, E, van Loosdrecht, M C M , Vanrolleghem, P A, **Villez, K**, Volcke, E I P, Weijers, S, Grau, P, Jimenez, J, Rosso, D (2018). The future of WRRF modelling – Outlook and challenges. *Wat Sci Technol*, 79, 1.
- 24 Corominas, LI, Garrido-Baserba, M, **Villez, K**, Olsson, G, Cortes, U, Poch, M (2018). Transforming data into knowledge for improved wastewater treatment operation: A critical review of techniques. *Environ Modell and Softw*, 106, 89–103.
- 25 Thürlimann, C M, Dürrenmatt, D J, **Villez, K** (2018). Soft-sensing with qualitative trend analysis for wastewater treatment plant control. *Control Eng Pract*, 70, 121–133.
- 26 Thürlimann, C M, **Villez, K** (2017). Input estimation as a qualitative trend analysis problem. *Comp Chem Eng*, 107, 333–342.
- 27 Mašić, A, Srinivasan, S, Billeter, J, Bonvin, D, **Villez, K** (2017). Identification of biokinetic models using the concept of extents. *Environ Sci Technol*, 51(13), 7520–7513.
- 28 Derlon, N, Thürlimann, C M, Dürrenmatt, D J, **Villez, K** (2017). Batch settling curve registration via image data modeling. *Wat Res*, 114, 327–337.
- 29 Mašić, A, Srinivasan, S, Billeter, J, Bonvin, D, **Villez, K** (2017). Shape constrained splines as transparent black-box models for bioprocess modeling. *Comp Chem Eng*, 99, 96–105.
- 30 Mašić, A, Udert, K, **Villez, K** (2016). Global parameter optimization for biokinetic modeling of simple batch experiments. *Environ Modell and Softw*, 85, 356–373.
- 31 **Villez, K**, Vanrolleghem, P A, Corominas, LI (2016). Optimal flow sensor placement on wastewater treatment plants. *Wat Res*, 101, 75–83.
- 32 **Villez, K**, Habermacher, J (2016). Shape anomaly detection for process monitoring of a sequencing batch reactor. *Comp Chem Eng*, 91, 365–379.
- 33 Mears, L, Noerregård, R, Stocks, S M, Albaek, M O, Sin, G, Gernaey, K V, **Villez, K** (2016). Functional unfold principal component regression methodology for analysis of industrial batch process data. *AIChE J*, 62, 1986–1994.
- 34 Mašić, A, Santos, A T L, Etter, B, Udert, K M, **Villez, K** (2015). Estimation of nitrite in source-separated nitrified urine with UV spectrophotometry. *Wat Res*, 85, 244–254.
- 35 Wall, S K, Gross, J J, Kessler, E C, **Villez, K**, Bruckmaier, R M (2015). Blood-derived proteins in milk at start of lactation: Indicators of active or passive transfer. *J Dairy Sci*, 98(11), 7748–7756.
- 36 Schielke-Jenni, S, **Villez, K**, Morgenroth, E, Udert, K M (2015). Observability of anammox activity in single-stage nitritation/anammox reactors using mass balances. *Environ Sci: Water Res Technol*, 1, 523–534.
- 37 **Villez, K** (2015). Qualitative path estimation: A fast and reliable algorithm for qualitative trend analysis. *AIChE J*, 61, 1535–1546.

- 38 Lin, W-C, Villez, K R E, Garcia, H (2014). Experimental validation of a resilient monitoring and control system. *J Process Contr*, 24, 624–639.
- 39 **Villez, K**, Venkatasubramanian, V, Rengaswamy, R (2013). Generalized shape constrained spline fitting for qualitative analysis of trends. *Comp Chem Eng*, 58, 116–134.
- 40 Baert, A, **Villez, K**, Steppe, K (2013). Automatic drought stress detection in plants without using conventional reference values. *Plant Soil*, 369, 439–452.
- 41 **Villez, K**, Rosén, C, Anctil, F, Duchesne, C, Vanrolleghem, P A (2013). Qualitative representation of trends (QRT): Extended method for identification of consecutive inflection points. *Comp Chem Eng*, 48, 187–199.
- 42 Maere, T, **Villez, K**, Marsili-Libelli, S, Naessens, W, Nopens, I (2012). Membrane bioreactor fouling behaviour assessment through principal component analysis and fuzzy clustering. *Wat Res*, 46, 6132–6142.
- 43 Baert, A, **Villez, K**, Steppe, K (2012). Functional unfold principal component analysis for automatic plant-based stress detection in grapevine. *Funct Plant Biol*, 39, 519–530.
- 44 **Villez, K**, Rieger, L, Keser, B, Venkatasubramanian, V (2012). Probabilistic qualitative analysis for fault detection and identification of an on-line phosphate analyzer. *Int J Adv Eng Sci Appl Math*, 4, 67–77.
- 45 Monroy, I, **Villez, K**, Graells, M, Venkatasubramanian, V (2012). Fault diagnosis of a benchmark fermentation process: A comparative study of feature extraction and classification techniques. *Biosyst Eng*, 35, 689–704.
- 46 **Villez, K**, Srinivasan, B, Rengaswamy, R, Narasimhan, S, Venkatasubramanian, V (2011). Kalman-based strategies for fault detection and identification (FDI): Extensions and critical evaluation for a buffer tank system. *Comp Chem Eng*, 35(5), 806–816.
- 47 Corominas, LI, **Villez, K**, Aguado, D, Rieger, L, Rosén, C, Vanrolleghem, P A (2011). Performance evaluation of fault detection methods for wastewater treatment processes. *Biotechnol Bioeng*, 108, 333–344.
- 48 Rieger, L, Takács, I, **Villez, K**, Siegrist, H, Lessard, P, Vanrolleghem, P A, Comeau, Y (2010). Data reconciliation for wastewater treatment plant simulation studies – Planning for high-quality data and typical sources of errors. *Water Environ Res*, 82, 426–433.
- 49 **Villez, K**, Rosén, C, D'hooge, E, Vanrolleghem, P A (2010). Online phase length optimization for a sequencing batch reactor by means of the Hotelling's T₂ statistic. *Ind Eng Chem Res*, 49, 180–188.
- 50 Belia, E, Amerlinck, Y, Benedetti, L, Johnson, B, Sin, G, Vanrolleghem, P A, Gernaey, K, Gillot, S, Neumann, M B, Rieger, L, Shaw, A, **Villez, K** (2009). Wastewater treatment modelling: Dealing with uncertainties. *Wat Sci Technol*, 60(8), 1929–1941.
- 51 **Villez, K**, Steppe, K, De Pauw, D J W (2009). Use of unfold PCA for on-line plant stress monitoring and sensor failure detection. *Biosyst Eng*, 103, 23–34.

- 52 **Villez, K**, Ruiz, M, Sin, G, Rosén, C, Colomer, J, Vanrolleghem, P A (2008). Combining multiway principal component analysis (MPCA) and clustering for efficient data mining of historical data sets of SBR processes. *Wat Sci Technol*, 57(10), 1659–1666.
- 53 **Villez, K**, Rosén, C, Anctil, F, Duchesne, C, Vanrolleghem, P A (2008). Qualitative representation of trends: An alternative approach to on-line process diagnosis and control of SBR's for nutrient removal. *Wat Sci Technol*, 57(10), 1525–1532.
- 54 Yoo, C K, **Villez, K**, Van Hulle, S W H, Lee, I-B, Vanrolleghem, P A (2007). Enhanced process monitoring for wastewater treatment systems. *Environmetrics*, 19(6), 602–617.
- 55 **Villez, K**, Pelletier, G, Rosén, C, Anctil, F, Duchesne, C, Vanrolleghem, P A (2007). Comparison of two wavelet-based tools for data mining of urban water networks time series. *Wat Sci Technol*, 56(6), 57–64.
- 56 Yoo, C K, **Villez, K**, Lee, I-B, Rosén, C, Vanrolleghem, P A (2006). Multi-model statistical process monitoring and diagnosis of a sequencing batch reactor. *Biotechnol Bioeng*, 96(4), 687–701.
- 57 Yoo, C K, **Villez, K**, Lee, I-B, Vanrolleghem, P A (2006). Multivariate nonlinear statistical monitoring of a sequencing batch reactor. *J Chem Eng Jpn*, 39(1), 43–51.
- 58 Yoo, C K, **Villez, K**, Lee, I-B, Van Hulle, S W H, Vanrolleghem, P A (2006). Sensor validation and reconciliation for a partial nitrification process. *Wat Sci Technol*, 53(4–5), 513–521.
- 59 Sin, G, **Villez, K**, Vanrolleghem, P A (2006). Application of a model-based optimisation methodology for nutrient removing SBRs leads to falsification of the model. *Wat Sci Technol*, 53(4–5), 95–103.
- 60 Van Hulle, S W H, Van Den Broeck, S, Maertens, J, **Villez, K**, Donckels, B, Schelstraete, G, Volcke, E I P, Vanrolleghem, P A (2005). Construction, start-up and operation of a continuously aerated laboratory-scale SHARON reactor in view of coupling with an Anammox reactor. *Water SA*, 31, 327–334.

Conference proceedings

- 1 Wadidie, A, Studer, G, **Villez, K** (2023). Automated layer identification in large area additive manufacturing (LAAM): A comparison of image thresholding and edge detection techniques. *Proceedings of the 34th Annual International Solid Freeform Fabrication Symposium*, Austin, TX, USA, August 14–16, 2023, 1629–1641.
- 2 Borzooei, S, Froemelt, A, Gaublomme, D, Quaghebeur, W, Saagi, R, Schneider, M Y, Torfs, E, **Villez, K**, Zhu, J (2022). How to build and use hybrid models for water resource recovery facilities?. *Proceedings of the 8th Water Resource Recovery Modelling Seminar (WRRmod2022)*, Stellenbosch, South Africa, January 18–22, 2023, 19–21.
- 3 Chowdhury, D, Kuras, A, Weix, D, Cath, T, Melin, A, Polsky, Y, Hering, A, Cath, T, **Villez, K** (2022). Black-box optimization of a closed-circuit reverse osmosis system for desalination through extremum seeking control. *Proceedings of the 13th IWA Specialized Conference on Instrumentation, Control and Automation (ICA2022)*, Beijing, China, October 17–21, 2022, Oral presentation.
- 4 Aguado, D, Blumensaat, F, Baeza, J A, **Villez, K**, Ruano, M V, Samuelsson, O, Plana, Q, Alferez, J (2022). Metadata: a must for the digital transition of wastewater treatment plants. *Proceedings of the 2nd International Joint Conference in Water Distribution Systems Analysis & Computing and Control in the Water Industry (WDSC / CCWI)*, Valencia, Spain, July 18–22, 2022, Oral presentation.
- 5 Chowdhury, D, McClain, M, **Villez, K** (2021). Selection of Combined Index Weights to Optimize Anomaly Detection in Big Area Additive Manufacturing. *Proceedings of the 2021 AIChE Annual meeting*, Boston, MA, USA, November 7–19, 2021, Oral presentation.
- 6 McClain, M, Chowdhury, D, **Villez, K** (2021). Automated Dimension Reduction with Principal Component Analysis Using Area Under Curve. *Proceedings of the 2021 AIChE Annual meeting*, Boston, MA, USA, November 7–19, 2021, Oral presentation.
- 7 Aguado, D, Blumensaat, F, Plana, Q, Ruano, V, Samuelsson, O, **Villez, K** (2021). Metadata and their role in the digital transformation of Water Resource Recovery Facility operations. *NordIWA 2021*, virtual conference, Oral presentation.
- 8 Chowdhury, D, Melin, A, **Villez, K** (2021). Automatic Drift Correction through Nonlinear Sensing. *Resilience Week 2021*, Washington, DC, USA, September 26–29, 2021, 2021 Resilience Week (RWS).
- 9 Brupbacher, A, Menniti, A, **Villez, K** (2019). Can machines learn what we know? And should they?. *Water Environment Federation's 93rd Annual Technical Exhibition & Conference (WEFTEC2020)*, New Orleans, LA, USA, October 3–7, 2020, Oral presentation.
- 10 Russo, S, Disch, A, Blumensaat, F, **Villez, K** (2019). Anomaly detection using deep autoencoders for in-situ wastewater systems monitoring data. *Proceedings of the 10th IWA Symposium on Systems Analysis and Integrated Assessment (Watermatex2019)*, Copenhagen, Denmark, September 1–4, 2019, Oral presentation.

- 11 Russo, S, Li, G, **Villez, K** (2019). Objective dimensionality selection in principal component analysis of high-dimensional data sets. *Proceedings of the 10th IWA Symposium on Systems Analysis and Integrated Assessment (Watermatex2019)*, Copenhagen, Denmark, September 1–4, 2019, Plenary presentation.
- 12 Russo, S, Blumensaat, F, Bouffard, D, Hammes, F, Matthews, B, Morgenroth, E, Pomati, F, **Villez, K** (2019). ADASen: Anomaly detection for adaptive sensor network management. *1st Swiss Workshop on Machine Learning for Environmental and Geosciences 2019*, Dübendorf, January 16–17, 2019, Spotlight talk + poster presentation.
- 13 Schneider, M Y, Carbajal, J P, Furrer, V, **Villez, K**, Maurer, M (2018). Identifying the performance of on-site wastewater treatment plants. *15th International Specialised Conferences on Small Water and Wastewater Systems and 7th IWA Conference on Resources Oriented Sanitation (SWWS2018)*, Haifa, Israel, October 14–18, 2018, Oral presentation.
- 14 Moy de Vitry, M, Kramer, S, **Villez, K**, Wegner, J D, Leitao, J P (2018). Calibrating urban flood models with qualitative probabilistic flooding information extracted from CCTV footage. *11th International Conference on Urban Drainage Modelling (UDM2018)*, Palermo, Italy, September 23–26, 2018, Oral presentation.
- 15 Rieckermann, J, Blumensaat, F, Leitao, J P, Ort, C, Scheidegger, A, Vanrolleghem, P A, **Villez, K** (2018). Frontiers in urban drainage – How will ubiquitous sensing change urban drainage management?. *11th International Conference on Urban Drainage Modelling (UDM2018)*, Palermo, Italy, September 23–26, 2018, Oral presentation.
- 16 Ohmura, K, Thürlmann, C M, Kipf, M, **Villez, K** (2018). Keeping track of pH sensors in biological wastewater treatment systems. *Water Environment Federation's 91st Annual Technical Exhibition & Conference (WEFTEC2018)*, New Orleans, LA, USA, September 29–October 3, 2018, Oral presentation.
- 17 Thürlmann, C M, Udert, K M, Morgenroth, E, **Villez, K** (2018). Assessment of two qualitative trend analysis tools for process control. *4th IWA Specialized International Conference Ecotechnologies for Wastewater Treatment (EcoSTP2018)*, London, ON, Canada, June 25–27, 2018, Oral presentation.
- 18 **Villez, K** (2017). Data reconciliation with inequality constraints induces bias: A cause for concern?. *Proceedings of the 2017 AIChE Annual meeting*, Minneapolis, MN, USA, October 29–November 3, 2017, Oral presentation.
- 19 Mašić, A, Billeter, J, Bonvin, D, **Villez, K** (2017). Extent computation under rank-deficient conditions. *IFAC-PapersOnLine*, 50(1), 3929–3934.
- 20 Valverde-Perez, B, Wagner, D S, Steidl, M, **Villez, K**, Plosz, B Gy (2017). In-situ UV-Vis probe to monitor algal photobioreactors treating municipal wastewater. *Proceedings of the 12th IWA Specialized Conference on Instrumentation, Control and Automation (ICA2017)*, Québec, QC, Canada, 11–14 June 2017, 55–59.

- 21 Garrido-Baserba, M, Corominas, LI, **Villez, K**, Olsson, G, Cortes, U, Poch, M (2017). Turning passive data into knowledge – A review of wastewater treatment monitoring methods. *Proceedings of the 12th IWA Specialized Conference on Instrumentation, Control and Automation (ICA2017)*, Québec, QC, Canada, 11–14 June 2017, 47–50.
- 22 **Thürlmann, C M**, Brouckaert, C, Udert, K M, Morgenroth, E, **Villez, K** (2017). Qualitative control for stable and efficient urine nitrification. *Proceedings of the 12th IWA Specialized Conference on Instrumentation, Control and Automation (ICA2017)*, Québec, QC, Canada, 11–14 June 2017, 287–290.
- 23 **Villez, K**, **Thürlmann, C M**, Brouckaert, C, Mašić, A (2017). Soft-sensing nitrite in a urine nitrification system for resource recovery. *Proceedings of the 12th IWA Specialized Conference on Instrumentation, Control and Automation (ICA2017)*, Québec, QC, Canada, 11–14 June 2017, 99–102.
- 24 **Villez, K**, **Thürlmann, C M**, Kaufmann, M (2017). Observing the observer: Monitoring pH sensors by means of step response experiments. *Proceedings of the 12th IWA Specialized Conference on Instrumentation, Control and Automation (ICA2017)*, Québec, QC, Canada, 11–14 June 2017, 27–30.
- 25 **Mašić, A**, Billeter, J, Bonvin, D, **Villez, K** (2017). Reaction extents: A divide-and-conquer approach for kinetic model identification. *Proceedings of the Frontiers International Conference on Wastewater Treatment (FICWTM2017)*, Palermo, Italy, May 21–24, 2017, 134–138.
- 26 Laureni, M, Weissbrodt, D G, **Villez, K**, Robin, O, de Jonge, N, Rosenthal, A, Wells, G, Nielsen, J L, Morgenroth, E, Joss, A (2017). Robust NOB control in hybrid biofilm systems operated for mainstream partial nitritation and anammox: An experimental and modelling study. *Frontiers International Conference on Wastewater Treatment (FICWTM2017)*, Palermo, Italy, May 21–24, 2017, 745–749.
- 27 Laureni, M, Weissbrodt, D G, **Villez, K**, Robin, O, de Jonge, N, Rosenthal, A, Wells, G, Nielsen, J L, Morgenroth, E, Joss, A (2017). Biomass segregation in hybrid biofilm systems improves NOB control in mainstream partial nitritation and anammox. *10th International Conference on Biofilm Reactors (Biofilm2017)*, Dublin, Ireland, May 9–12, 2017, appeared on USB stick.
- 28 **Thürlmann, C M**, Udert, K M, Morgenroth, E, **Villez, K** (2016). Nitrite sensing in a urine nitrification reactor with in-situ UV-Vis spectrometry. *3rd IWA New Developments in IT in Water Conference*, Telford, UK, November 1–3, 2016, oral presentation.
- 29 Derlon, N, **Thürlmann, C M**, Dürrenmatt, D J, **Villez, K** (2016). Batch settling curve registration via shape constrained spline-based image analysis. *3rd IWA New Developments in IT in Water Conference*, Telford, UK, November 1–3, 2016, oral presentation.
- 30 **Thürlmann, C M**, **Villez, K** (2016). In-situ nitrite sensing in a urine nitrification reactor by means of UV-Vis spectrometry. *WEF/IWA Nutrient Removal and Recovery 2016 Conference (NRR2016)*, Denver, CO, USA, July 10–13, 2016, appeared on USB stick.

- 31 Mašić, A, Srinivasan, S, Billeter, J, Bonvin, D, **Villez, K** (2016). Biokinetic process model diagnosis with shape-constrained spline functions. *3rd IWA Specialized International Conference Ecotechnologies for Wastewater Treatment (ecoSTP16)*, Cambridge, UK, June 27–30, 2016, appeared on USB stick.
- 32 Mašić, A, Srinivasan, S, Billeter, J, Bonvin, D, **Villez, K** (2016). On the use of shape-constrained splines for biokinetic process modeling. *IFAC-PapersOnLine*, 49(7), 1145–1150.
- 33 Mašić, A, Srinivasan, S, Billeter, J, Bonvin, D, **Villez, K** (2016). Biokinetic model identification via extents of reaction. *5th IWA/WEF Wastewater Treatment Modelling Seminar (WWTmod2016)*, Annecy, France, April 2–6, 2016, appeared on USB-stick.
- 34 Mears, L, Noerregård, R, Stocks, S M, Albaek, M O, Sin, G, Gernaey, K, **Villez, K** (2015). Functional unfold principal component analysis methodology for industrial scale fermentation data. *10th European Congress of Chemical Engineering - 3rd European Congress of Applied Biotechnology - 5th European Process Intensification Conference (ECCE10+ECAB3+EPIC5)*, Nice, France, September 27 – October 1, 2015, presented.
- 35 **Villez, K**, Vanrolleghem, P A, Corominas, LI (2015). Optimizing observability and redundancy by means of globally optimal measurement selection. *Proceedings of the 9th IWA Symposium on Systems Analysis and Integrated Assessment (Watermatex2015)*, Gold Coast, Queensland, Australia, June 14–17, 2015, appeared on-line.
- 36 Mašić, A, Santos, A T L, Hess, A, Thürlmann, C M, Etter, B, Udert, K M, **Villez, K** (2015). Nitrite estimation in nitrified urine by UV spectroscopy of weak nitrite/nitrate absorbance peaks. *Proceedings of the 9th IWA Symposium on Systems Analysis and Integrated Assessment (Watermatex2015)*, Gold Coast, Queensland, Australia, June 14–17, 2015, appeared on-line.
- 37 **Villez, K**, Habermacher, J (2015). Qualitative trend analysis for fault detection in batch processes. *Proceedings of the 9th IWA Symposium on Systems Analysis and Integrated Assessment (Watermatex2015)*, Gold Coast, Queensland, Australia, June 14–17, 2015, appeared on-line.
- 38 **Villez, K**, Del Giudice, D, Neumann, M B, Rieckermann, J (2015). The statistical description of model bias as a method to account for model structure errors. *Proceedings of the 9th IWA Symposium on Systems Analysis and Integrated Assessment (Watermatex2015)*, Gold Coast, Queensland, Australia, June 14–17, 2015, appeared on-line.
- 39 Mears, L, Noerregård, R, Stocks, S M, Albaek, M O, Sin, G, Gernaey, K, **Villez, K** (2015). Multivariate analysis of industrial scale fermentation data. *Computer Aided Chemical Engineering*, 37, 1667–1672.
- 40 **Villez, K**, Habermacher, J (2015). Shape constrained splines with discontinuities for anomaly detection in a batch process. *Computer Aided Chemical Engineering*, 37, 1805–1810.

- 41 Thürlimann, C M, Dürrenmatt, D J, **Villez, K** (2015). Evaluation of qualitative trend analysis as a tool for automation. *Computer Aided Chemical Engineering*, 37, 2531–2536.
- 42 Mašić, A, Santos, A T L, Etter, B, Udert, K, **Villez, K** (2015). Estimation of nitrite concentration in a urine nitrification reactor by means of UV spectrophotometry. *Proceedings of the 2015 IWA Nutrient Removal and Recovery Conference (NRR2015)*, Gdańsk, Poland, May 18–21, 2015, 754–756.
- 43 Mears, L, Noerregård, R, Stocks, S M, Sin, G, Gernaey, K, **Villez, K** (2015). Application of multivariate analysis tools to industrial scale fermentation data. *Proceedings of the Advances in Process Analytics and Control Technology Conference (APACT15)*, Manchester, UK, April 22–24, 2014, appeared on USB–stick.
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