

2019 水環境制御研究室 研究業績一覧

○ 学術雑誌論文/Peer-reviewed papers

* 英文雑誌

- (1) Torii, Shotaro, Hashimoto, Takashi, An Thuan Do, Furumai, Hiroaki, Katayama, Hiroyuki (2019) Repeated pressurization as a potential cause of deterioration in virus removal by aged reverse osmosis membrane used in households, SCIENCE OF THE TOTAL ENVIRONMENT, 695.
- (2) Kumar, Manish, Ram, Bhagwana, Honda, Ryo, Poopipattana, Chomphunut, Vu Duc Canh, Chaminda, Tushara, Furumai, Hiroaki (2019) Concurrence of antibiotic resistant bacteria (ARB), viruses, pharmaceuticals and personal care products (PPCPs) in ambient waters of Guwahati, India: Urban vulnerability and resilience perspective, SCIENCE OF THE TOTAL ENVIRONMENT, 693.
- (3) Wu L., Y. Tajima, D. Yamazaki, Y. Shibuo, H. Sanuki, and H. Furumai (2019) Development of Real-time Assimilation Model for Prediction of Inundation on Urbanized Coastal Lowland, Proceedings of the 10th International Conference on Asian and Pacific Coasts, pp.1343-1349.
- (4) Vu Duc Canh, Furumai, Hiroaki, Katayama, Hiroyuki (2019) Removal of pepper mild mottle virus by full-scale microfiltration and slow sand filtration plants, npj Clean Water, 2(1), 1-7.
- (5) Phungsai, Phanwatt, Kurisu, Futoshi, Kasuga, Ikuro, Furumai, Hiroaki (2019) Molecular characteristics of dissolved organic matter transformed by O₃ and O₃/H₂O₂ treatments and the effects on formation of unknown disinfection by-products, WATER RESEARCH, 159, pp.214-222. [JSWE 2019 Paper Award]
- (6) Khanal, Rajendra, Furumai, Hiroaki, Nakajima, Fumiyuki, Yoshimura, Chihiro (2019) Impact of holding time on toxicity change of urban road dust during runoff process, SCIENCE OF THE TOTAL ENVIRONMENT, 668, pp.1267-1276.
- (7) Shotaro Torii, Takashi Hashimoto, An Thuan Do, Hiroaki Furumai, and Hiroyuki Katayama (2019) Impact of repeated pressurization on virus removal by reverse osmosis membranes for household water treatment, Environmental Science: Water Research & Technology, Vol.5, pp.910-919.
- (8) Nittami, T., Shoji, T., Koshiba, Y., Noguchi, M., Oshiki, M., Kuroda, M., Kindaichi, T., Fukuda, J. and Kurisu, F. (2019) Investigation of prospective factors that control Kouleothrix (Type 1851) filamentous bacterial abundance and their correlation with sludge settleability in full-scale wastewater treatment plants. Process Safety and Environmental Protection 124, 137-142.
- (9) Vu Duc Canh, Ikuro Kasuga, Hiroaki Furumai, and Hiroyuki Katayama (2019) Viability RT-qPCR combined with sodium deoxycholate pre-treatment for selective quantification of infectious viruses in drinking water samples, Food and Environmental Virology, Vol.11, No.1, pp.40-51.
- (10) Mohammad Mosleh Uddin, Futoshi Kurisu, Ikuro Kasuga, Hiroaki Furumai, S. M. Atiqul Islam (2019) Potential of biological arsenite oxidation in sand filtration units at arsenic-iron removal plants (AIRPs) in Bangladesh, Applied Water Science, 9(48), pp.2-7.
- (11) Jia Niu, Ikuro Kasuga, Futoshi Kurisu, and Hiroaki Furumai (2019) Growth competition between ammonia-oxidizing archaea and bacteria for ammonium and urea in a biological activated carbon filter used for drinking water treatment, Environmental Science: Water Research & Technology, Vol. 5 (2), 231-238.

- (12) Vitharuch Yuthawong, Ikuro Kasuga, Futoshi Kurisu and Hiroaki Furumai (2019) Molecular-level changes in dissolved organic matter compositions of Lake Inba water by KMnO₄ oxidation assessed by Orbitrap mass spectrometry, *Journal of Water and Environment Technology*, 17(1), pp.27-39.
- (13) Vu Duc Canh, Osawa, Hideki, Inoue, Kentaro, Kasuga, Ikuro, Takizawa, Satoshi, Furumai, Hiroaki, Katayama, Hiroyuki (2019) Ferrihydrite treatment to mitigate inhibition of RT-qPCR virus detection from large-volume environmental water samples, *JOURNAL OF VIROLOGICAL METHODS*, 263, pp.60-67.
- (14) Thi Nga Nguyen, Miaomiao Liu, Ikuro Kasuga and Hiroyuki Katayama (2019) Occurrence of antibiotic resistance genes as emerging contaminants in watersheds of Tama River and Lake Kasumigaura in Japan, *IOP Conference Series: Earth and Environmental Science*, Vol.266, pp. 012003. (doi: 10.1088/1755-1315/266/1/012003)

* 和文雑誌

- (1) 渋尾 欣弘, 呉 連慧, 田島 芳満, 山崎 大, 佐貫 宏, 古米 弘明(2019)管渠水位の事前計算データベースを用いたデータ同化による浸水解析の精度向上とポンプ操作の感度分析, *土木学会論文集B1(水工学)*, Vol. 75, No. 2, pp.L_199-L_204.
- (2) 吉田季生, 谷口健司, 渋尾欣弘(2019)氾濫シミュレーションに基づくリスクランク評価と避難可能時間の算定, *土木学会論文集B1(水工学)*, Vol. 75, No. 2, pp.L_1351-L_1356.
- (3) 李 星愛, 渋尾 欣弘, 古米 弘明(2019)鶴見川流域のポンプ排水区における下水道管渠内水位と電気伝導度の変動特性, *土木学会論文集G(環境)*, Vol. 75, No. 2, pp.55-64.

○ 国際学会発表/Presentations at International Conferences

- (1) Yoshihiro Shibuo, Lianhui Wu, Yoshimitsu Tajima, Dai Yamazaki, Hiroshi Sanuki, and Hiroaki Furumai (2019) Application of Databank-Based Data Assimilation and Sensitivity Analysis of Pumping Operation for Improvement of Urban Inundation Model, AGU Fall meeting 2019. (9-13 December, San Francisco, U.S.A.) [Poster]
- (2) Ikuro Kasuga, Miyu Suzuki, Futoshi Kurisu, and Hiroaki Furumai (2019) Molecular-level analysis of biodegradable organic matter supporting microbial regrowth in drinking water, 8th IWA Microbial Ecology and Water Engineering Specialist Conference. (17-20 November, Hiroshima, Japan) [Oral]
- (3) Ifita Rahmatika, Ikuro Kasuga, Futoshi Kurisu, and Hiroaki Furumai (2019) Evaluation of organic compounds migrated from polyethylene and their impacts on microbial regrowth in drinking water, 8th IWA Microbial Ecology and Water Engineering Specialist Conference, P128-D. (17-20 November, Hiroshima, Japan) [Poster] **[Best Poster Award]**
- (4) Dai Shimazaki, Takuya Nakagawa, Ikuro Kasuga, and Michihiro Akiba (2019) Endotoxin-producing capability of heterotrophic bacteria in granular activated carbon filters for advanced water purification process, 8th IWA Microbial Ecology and Water Engineering Specialist Conference, P114-D. (17-20 November, Hiroshima, Japan) [Poster]
- (5) Ikuro Kasuga (2019) Antimicrobial resistance associated with fecal pollution in water environment in Hanoi, Vietnam, 1st Symposium of JSPS Core-to-Core Program: "Center of Excellence in Health Risk Assessment for Adaptation to Climate Change". (11-12 November, Manila, Philippines).

- (6) Ifitita Rahmatika, Ikuro Kasuga, Futoshi Kurisu, and Hiroaki Furumai (2019) Dynamic changes of microbial water quality and occurrence of opportunistic pathogens during water stagnation in building plumbing, AWWA Water Quality Technology Conference 2019. (3-7 Nov, Texas, USA) [Oral]
- (7) Chomphunut Poopipattana, Motoaki Suzuki, Hiroyuki Katayama, and Hiroaki Furumai (2019) Effects of CSO discharge pattern and tidal change on spatial distribution of microbial fecal indicators and PPCPs after long-duration rainfall events, 8th IWA-ASPIRE Conference and Exhibition. (31 October - 2 November, Hong Kong) [Oral]
- (8) Motoaki Suzuki, Chomphunut Poopipattana, Hiroyuki Katayama, and Hiroaki Furumai (2019) Occurrence and persistence of fecal indicators bacteria and bacteriophages in Tokyo coastal area after rainfall events, 8th IWA-ASPIRE Conference and Exhibition. (31 October - 2 November, Hong Kong) [Poster] [Finalist Poster Award]
- (9) Yoshihiro Ishii, Jun Hatakeyama, Futoshi Kurisu, Ikuro Kasuga, and Hiroaki Furumai (2019) Tracking the fates of dissolved organic matter from river source water to finished drinking water, IWA Specialist Conference on Natural Organic Matter in Water 2019, 4362193. (7-10 October, Tokyo, Japan) [Oral]
- (10) Li Xue, Futoshi Kurisu, Ikuro Kasuga, and Hiroaki Furumai (2019) Development of a simultaneous screening analysis of organic micropollutants with various chemical properties in environmental water by high performance liquid chromatograph coupled with Orbitrap mass spectrometer, IWA Specialist Conference on Natural Organic Matter in Water 2019, 4361889. (7-10 October, Tokyo, Japan) [Oral]
- (11) Vitharuch Yuthawong, Ikuro Kasuga, Futoshi Kurisu, and Hiroaki Furumai (2019) Effects of long-term incubation on dissolved organic matter composition and permanganate chemical oxygen demand fractions in lake water assessed by Orbitrap mass spectrometry, IWA Specialist Conference on Natural Organic Matter in Water 2019, 4349518. (7-10 October, Tokyo, Japan) [Oral]
- (12) Phanwatt Phungsai, Futoshi Kurisu, Ikuro Kasuga and Hiroaki Furumai (2019) Changes In Dissolved organic matter profile and disinfection byproducts precursors by ozonation and peroxone treatments, IWA Specialist Conference on Natural Organic Matter in Water 2019, 4333220. (7-10 October, Tokyo, Japan) [Oral]
- (13) Ikuro Kasuga, Vitharuch Yuthawong, Futoshi Kurisu, and Hiroaki Furumai (2019) Molecular-level comparison of dissolved organic matter in 11 major lakes in Japan by Orbitrap mass spectrometry, IWA Specialist Conference on Natural Organic Matter in Water 2019, 4333223. (7-10 October, Tokyo, Japan) [Oral]
- (14) Ikuro Kasuga (2019) Drinking Water Quality Management After Treatment -Risks of Microbial Regrowth in Distribution System and Premise Plumbing-, The 9th International Forum Green Technology and Management (IFGTM) (27-28 September, Hanoi, Vietnam).
- (15) Lianhui Wu, Yoshimitsu Tajima, Dai Yamazaki, Yoshihiro Shibuo, Hiroaki Furumai (2019) Development of real-time assimilation model for prediction of water level distribution in urban sewerage system, The 56th Japan Annual Technical Conference on Sewerage, English session (7-8 Aug, Yokohama) [Oral]
- (16) Nga Thi Nguyen, Miaomiao Liu, Hiroyuki Katayama, and Ikuro Kasuga (2019) Prevalence of Antibiotic Resistance Genes in Different Water Environments in Hanoi, Vietnam, Water and Environment Technology Conference 2019, p.7. (13-14 July, Osaka) [Oral and Poster]

- (17) Thi Tra My Ma, Hiroyuki Katayama, Ikuro Kasuga, and The Ha Cao (2019) Fate of pathogens in lab-scale duckweed pond treatment for post-biogas swine wastewater, Water and Environment Technology Conference 2019, p.104. (13-14 July, Osaka) [Oral and Poster]
- (18) Vu Duc Canh, Hiroaki Furumai, and Hiroyuki Katayama (2019) Suitability of CDDP-qPCR to discriminate between infections and noninfectious enteric viruses in drinking water source and tap water in Japan, Water and Environment Technology Conference 2019, p.5. (13-14 July, Osaka) [Oral and Poster]
- (19) Chomphunut Poopipattana, Motoaki Suzuki, Hiroyuki Katayama, and Hiroaki Furumai (2019) Investigation of PPCPs biodegradation and other attenuation processes to explain their temporal behavior as sewage marker in Tokyo coastal area after rainfall events, Water and Environment Technology Conference 2019, p.21. (13-14 July, Osaka) [Oral and Poster]
- (20) Li Xie, Futoshi Kurisu, Ikuro Kasuga, and Hiroaki Furumai (2019) Simultaneous determination of organic micropollutants with various chemical properties in environmental water based on HPLC-high resolution mass spectrometry, Water and Environment Technology Conference 2019, p.51. (13-14 July, Osaka) [Oral and Poster]
- (21) Hop V. Phan, Futoshi Kurisu, and Hiroaki Furumai (2019) Kinetics and pathway of anaerobic degradation of benzene by methanogenic enrichment cultures, Water and Environment Technology Conference 2019, p.96. (13-14 July, Osaka) [Oral and Poster]
- (22) Ifita Rahmatika, Ikuro Kasuga, Futoshi Kurisu, and Hiroaki Furumai (2019) What is going on in pipes? – A hot spot for microbial regrowth in drinking water-, Water and Environment Technology Conference 2019, p.53. (13-14 July, Osaka) [Oral and Poster] [Excellent Presentation Award]
- (23) Chotiwat Jantarakasem, Ikuro Kasuga, Futoshi Kurisu, and Hiroaki Furumai (2019) Impacts of low water temperature on ammonium removal potential of biological activated carbon in a full-scale drinking water treatment plant, Water and Environment Technology Conference 2019, p.43. (13-14 July, Osaka) [Oral and Poster]
- (24) Miaomiao Liu, Ikuro Kasuga, Akihiko Hata (2019) Prevalence of intracellular and extracellular antibiotic resistance genes in an urban river receiving wastewater effluent, 5th International Symposium on the Environmental Dimension of Antibiotic Resistance, P72. (9-14 June, Hong Kong) [Poster]
- (25) Daniel EKHLAS, Futoshi KURISU, Ikuro KASUGA, Tomislav CERNAVA, Gabriele BERG, Miaomiao LIU, Hiroaki FURUMAI (2019), Microbial Indicators for Combined Sewer Overflow Pollution: New Insights by a Survey in An Urban River in Tokyo, 1st One Health European Joint Programme Annual Scientific Meeting (22-24th May, Dublin, Ireland) [Oral] [The Best Oral Presentation Runner-up Prize]

○ 国内学会発表/Presentations at Domestic Conferences

- (1) 春日郁朗, Nguyen Thi Nga, Liu Miaomiao, 片山浩之 (2019) ハノイの水環境における薬剤耐性遺伝子汚染の実態, 第22回水環境学会シンポジウム, pp.42-43. (9/5-6, 札幌) 【口頭】
- (2) 栗栖太, 春日郁朗 (2019) 複合微生物系と複合有機物系の水環境工学, 第22回水環境学会シンポジウム, p.180. (9/5-6, 札幌) 【口頭】
- (3) Vu Duc Canh, Ikuro Kasuga, Hiroaki Furumai, and Hiroyuki Katayama (2019) Applicability of viability qPCR to quantification of infectious viruses in drinking water, 第22回水環境学会シンポジウム, p.285. (9/5-6, 札幌) 【口頭】

- (4) 古米弘明, 李星愛, 洪尾欣弘, 中島満浩(2019)横浜市港北区内における下水幹線内水位のリアルタイム観測と降雨特性との関係, 第 56 回下水道研究発表会講演集, p.170-172. (8/6-8, 横浜)【口頭】
- (5) 小林亘, 古米弘明(2019)LPWA を用いた市街地でのリアルタイム浸水モニタリング, 第 56 回下水道研究発表会講演集, p.182-184. (8/6-8, 横浜)【口頭】
- (6) 李星愛, 洪尾欣弘, 古米弘明(2019)鶴見川流域における下水管内水位の連続観測データを用いた浸水モデルの精度検証, 第 56 回下水道研究発表会講演集, p.188-190. (8/6-8, 横浜)【口頭】
- (7) 洪尾欣弘, 谷口健司, 佐貫宏, 吉村耕平, 李星愛, 小池俊雄, 田島芳満, 古米弘明, 佐藤慎司(2019)鶴見川流域における激甚化する台風を想定した洪水・高潮・都市浸水の予測シナリオ, 第 56 回下水道研究発表会講演集, p.191-193. (8/6-8, 横浜)【口頭】
- (8) 五味菜尋, 古米弘明, 高田秀重(2019)フェノール系 PPCPs の直接誘導化による分析法の開発, 第 53 回日本水環境学会年会, p.452. (3/7-9, 甲府)【ポスター】
- (9) 田畑誠一郎, 山ノ井俊, 大中洋一, Vu Duc Canh, 古米弘明, 片山浩之(2019)各種活性炭と比較した多孔質炭素材料トリポラス TM の細孔構造とウイルス除去特性, 第 53 回日本水環境学会年会, p.100. (3/7-9, 甲府)【口頭】
- (10) 鳥居将太郎, 端昭彦, 片山浩之, 古米弘明(2019)ウイルスの塩素消毒効率に及ぼす種内耐性分布幅の影響, 第 53 回日本水環境学会年会, p.253. (3/7-9, 甲府)【口頭】
- (11) 中島泰介, 春日郁朗, 栗栖太, 古米弘明(2019)*Limnhabitans* 属細菌の代謝が湖沼溶存有機物の分子組成に及ぼす影響の評価, 第 53 回日本水環境学会年会, p.208. (3/7-9, 甲府)【口頭】**【クリタ賞】**
- (12) Hop V. Phan, Futoshi Kurisu, Koichiro Kiba and Hiroaki Furumai (2019) Correlation between benzene degrading activity and abundance of putative benzene-degrading microorganisms in methanogenic enrichment culture, 第 53 回日本水環境学会年会, p.204. (3/7-9, 甲府)【口頭】
- (13) Ifitita Rahmatika, Ikuro Kasuga, Futoshi Kurisu and Hiroaki Furumai (2019) Influence of water stagnation on microbial regrowth at different faucets in a building plumbing, 第 53 回日本水環境学会年会, p.222. (3/7-9, 甲府)【口頭】
- (14) Jantarakasem Chotiwat, Ikuro Kasuga, Futoshi Kurisu and Hiroaki Furumai (2019) Determination of volumetric ammonium removal rates of biological activated carbon for drinking water treatment, 第 53 回日本水環境学会年会, p.298. (3/7-9, 甲府)【口頭】
- (15) Miaomiao Liu and Ikuro Kasuga (2019) Fates of intra- and extra-cellular antibiotic resistance genes during wastewater treatment and water reclamation, 第 53 回日本水環境学会年会, p.102. (3/7-9, 甲府)【口頭】
- (16) Liu Xie, Futoshi Kurisu, Ikuro Kasuga and Hiroaki Furumai (2019) Development of a simultaneous quantification method with HPLC followed by high resolution mass spectrometry for “Youchousa-koumoku” to be surveyed by The Ministry of The Environment, Japan, 第 53 回日本水環境学会年会, p.145. (3/7-9, 甲府)【口頭】
- (17) 石井淑大, 栗栖太, 春日郁朗, 古米弘明(2019)精密質量分析計を用いた一斉スクリーニング分析による河川水中要調査項目の存在状況評価, 第 53 回日本水環境学会年会, p.72. (3/7-9, 甲府)【口頭】
- (18) 畠山準, 栗栖太, 春日郁朗, 古米弘明(2019)荒川支流入間川における未規制有機汚染物質の精密質量分析計を用いたノンターゲット分析, 第 53 回日本水環境学会年会, p.604. (3/7-9, 甲府)【ポスター】
- (19) 関瑛理子, 古米弘明, 片山浩之(2019)雨天時越流水発生後の都市水域における糞便指標細菌とウイルス類の消長の実測, 第 53 回日本水環境学会年会, p.630. (3/7-9, 甲府)【ポスター】
- (20) 高橋真, 久保田健吾, 佐藤幹子, 石井淑大, 栗栖太, 李玉友(2019)下水処理における微生物群集構造と溶存有機物組成の関係性の解明, 第 53 回日本水環境学会年会. (3/7-9, 甲府)

○ 招待講演/Invited Speech

- (1) Hiroaki Furumai (2019) Innovations in Urban Flood Risk Management -Fusion of Real-time Sensing, Model Simulation, and data Assimilation, 8th IWA-ASPIRE. (31 October-2 November, Hong Kong) [Plenary Keynote]
- (2) Hiroaki Furumai (2019) Stormwater management for sustainable city development in Japan, 19th IWA International Conference on Diffuse Pollution and Eutrophication. (29 October, Jeju, Korea)
- (3) Ikuro Kasuga (2019) Drinking Water Quality Management After Treatment -Risks of Microbial Regrowth in Distribution System and Premise Plumbing-, The 9th International Forum Green Technology and Management (IFGTM). (27-28 September, Hanoi, Vietnam).
- (4) 古米弘明 (2019) 都市浸水リスクの管理と制御の高度化に向けて, 第 70 回下水道新技術セミナー. (23 Aug, 日比谷コンベンションホール; 30 Aug, 大阪科学技術センター)
- (5) 古米弘明 (2019) Towards Sustainable Urban Water Use System in Adapting to Climate Change, The 11th International Symposium on Water Supply Technology in Yokohama 2019. (9-11 July, Yokohama)
- (6) Hiroaki Furumai (2019) Towards Urban Water Use System for Sustainability, Smart wastewater management and policy in Japan, International High-end Forum on Water Systems and Water Environment for Cities of the Future. (26 June, Qingdao, China)
- (7) 渋尾欣弘 (2019) 都市浸水対策の高度化への試み, NPO 法人地球環境カレッジ第 166 回定例講演会. (7 June, GE カレッジホール)
- (8) Hiroaki Furumai (2019) Smart wastewater management and policy in Japan, Thai Water International Conference 2019 “Smart Water Management for ASEAN Smart Cities”. (6 June, BITEC, Bangkok)
- (9) Ikuro Kasuga (2019) Control of microbial regrowth in premise plumbing -Challenge of aging water supply systems-, Vietnam-Japan Science and Technology Towards Sustainable Development 2019, E-6-K-085. (4 May, Hanoi) [Keynote speech]
- (10) Hiroaki Furumai (2019) Integrated Urban Flood Risk Management in Japanese Cities: Challenges, opportunities, and lessons learned for global cities, Second Technical Deep Dive(TDD) on Integrated Urban Flood Risk Management (IUFRM). (22 April, 世界銀行東京事務所)

○ 総説・解説/Reviews & Commentaries

- (1) 渋尾 欣弘, 古米 弘明 (2019) IoT を活用した河川・下水道のシームレスモデルによるリアルタイム浸水予測手法の開発 (特集 下水道分野における情報技術の活用), 下水道協会誌, 56(675), pp.32-34.

○ その他記事/Other Articles

- (1) 古米弘明 (2019) [巻頭言] 浸水リスクを意識した賢いまちづくり, 新都市, 73(11), pp.3-6.
- (2) 古米弘明 (2019) [巻頭言] オープンサイエンスとイノベーション, (一社)日本下水道施設業協会機関誌 明日の下水道, 第 76 号, p.3.

○ 受賞/Award

- (1) 水環境学会年間優秀論文賞(メタウォーター賞): Poopipatta Chomphunnut, Misaki Nakajima, Ikuro Kasuga, Futoshi Kurisu, Hiroyuki Katayama, Hiroaki Furumai (2018) Spatial-temporal distribution of PPCPs and microbial fecal indicators as sewage pollution markers in Tokyo coastal area after rainfall events, Journal of Water and Environment Technology, Vol.16, No.3, pp.149-160. (2019 年 9 月 5 日)