

2021 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) Bisheng XU, Hiroaki FURUMAI and Yoshihiro SHIBUO (2021) EVALUATION OF STORMWATER RUNOFF REDUCTION BY GREEN INFRASTRUCTURE DURING SHORT-TERM HEAVY RAINFALLS, Journal of Japan Society of Civil Engineers, Ser. B1 (Hydraulic Engineering), Vol. 77, No. 2, 1_271-1_276.
- (2) Lianhui Wu, Yoshimitsu Tajima, Hiroshi Sanuki, Yoshihiro Shibuo, Hiroaki Furumai (2021) A novel approach for determining integrated water discharge from the ground surface to trunk sewer networks for fast prediction of urban floods. Journal of Flood Risk Management, e12773.
<https://doi.org/10.1111/jfr3.12773>
- (3) Hop V. Phan, Futoshi Kurisu, Koichiro Kiba, Hiroaki Furumai (2021) Optimized Cultivation and Syntrophic Relationship of Anaerobic Benzene-Degrading Enrichment Cultures under Methanogenic Conditions. Microbes and environments, 36(3), ME21028, 11pages.
<https://doi.org/10.1264/jsme2.ME21028>
- (4) Chomphunut Poopipattana and Hiroaki Furumai (2021) Fate Evaluation of CSO-derived PPCPs and Escherichia coli in Tokyo Coastal Area after Rainfall Events by a Three-dimensional Water Quality Model, Journal of Water and Environment Technology, 19(4), pp.251-265.
<https://doi.org/10.2965/jwet.20-139>
- (5) Aki Hirabayashi, Trung Duc Dao, Taichiro Takemura, Futoshi Hasebe, Le Thi Trang, Nguyen Ha Thanh, Hoang Huy Tran, Keigo Shibayama, Ikuro Kasuga and Masato Suzuki (2021) A Transferable IncC-IncX3 Hybrid Plasmid Cocarrying bla NDM-4, tet (X), and tmexCD3-toprJ3 Confers Resistance to Carbapenem and Tigecycline. Msphere, 6(4), e00592-21.
<https://doi.org/10.1128/mSphere.00592-21>
- (6) Ikuro Kasuga, Hitomi Nakamura, Futoshi Kurisu, Hiroaki Furumai (2021) Characterization of microbial regrowth potential shaped by advanced drinking water treatment. H2Open Journal, 4(1), 157-166. <https://doi.org/10.2166/h2oj.2021.103>
- (7) Li Xie, Fumiyuki Nakajima, Ikuro Kasuga, and Futoshi Kurisu (2021) Simultaneous screening for chemically diverse micropollutants in public water bodies in Japan by high-performance liquid chromatography–Orbitrap mass spectrometry, Chemosphere, Vol.273, 128524.
<https://doi.org/10.1016/j.chemosphere.2020.128524>
- (8) Vu Duc Canh, Seiichiro Tabata, Shun Yamanoi, Yoichi Onaka, Toshiyuki Yokoi, Hiroaki Furumai and Hiroyuki Katayama (2021) Evaluation of Porous Carbon Adsorbents Made from Rice Husks for Virus Removal in Water, Water, 13, 1280. <https://doi.org/10.3390/w13091280>
- (9) Masaya SUGIURA, Hideshige TAKADA, Naohiko TAKADA, Kaoruko MIZUKAWA, Shumpei TSUYUKI, Hiroaki FURUMAI (2021) Microplastics in urban wastewater and estuarine water: Importance of street runoff, Environmental Monitoring and Contaminants Research, Vol.1, pp.54-65. <https://doi.org/10.5985/emcr.20200006>

- (10) Yoshihiro Shibuo and Hiroaki Furumai (2021) Advances in Urban Stormwater Management in Japan: A Review, *Journal of Disaster Research*, Vol.16, No.3, pp. 310-320. <https://doi.org/10.20965/jdr.2021.p0310>
- (11) Kyuhyun Park, Yoshihiro Shibuo, Junichi Katayama, Shinji Baba, and Hiroaki Furumai (2021) Applicability of High-Resolution Geospatial Data Obtained by UAV Photogrammetry to Develop Drainage System Models for Pluvial Flood Analysis, *Journal of Disaster Research*, Vol.16, No.3, pp. 371-380. <https://doi.org/10.20965/jdr.2021.p0371>
- (12) Kentaro Fukumori, Yu Kurita, and Hiroaki Furumai (2021) Validation of Inundation Damage Reduction by a Pump Gate with the New Type of Horizontal Axial Submersible Pump, *Journal of Disaster Research*, Vol.16, No.3, pp. 381-386. <https://doi.org/10.20965/jdr.2021.p0381>
- (13) Daniel Ekhlas, Futoshi Kurisu, Ikuro Kasuga, Tomislav Cemava, Gabriele Berg, Miaomiao Liu, and Hiroaki Furumai (2021) Identification of new eligible indicator organisms for combined sewer overflow via 16S rRNA gene amplicon sequencing in Kanda River, Tokyo, *Journal of Environmental Management*, Vol.284, 112059.
- (14) Nga Thi Nguyen, Miaomiao Liu, Hiroyuki Katayama, Taichiro Takemura, and Ikuro Kasuga (2021) Association of the colistin resistance gene *mcr-1* with fecal pollution in water environments in Hanoi, Vietnam, *Letters in Applied Microbiology*, Vol.72, No.3, pp.275-282.
- (15) Shotaro Torii, Hiroaki Furumai, Hiroyuki Katayama. (2021) Applicability of polyethylene glycol precipitation followed by acid guanidinium thiocyanate-phenol-chloroform extraction for the detection of SARS-CoV-2 RNA from municipal wastewater, *Science of the Total Environment*, Vol. 756, 143067.
- (16) Vu Duc Canh, Shotaro Torii, Hiroaki Furumai, and Hiroyuki Katayama (2021) Application of Capsid Integrity (RT-)qPCR to Assessing Occurrence of Intact Viruses in Surface Water and Tap Water in Japan, *Water Research*, Vol. 189, 116674.
- (17) Yoshihiro Ishii, Futoshi Kurisu, Ikuro Kasuga, and Hiroaki Furumai (2021) Competition for growth substrates in river water between *Escherichia coli* and indigenous bacteria illustrated by high resolution mass spectrometry, *Letters in Applied Microbiology*, Vol.72, No.2, pp.133-140.
- (18) Thirawit Prasert, Yoshihiro Ishii, Futoshi Kurisu, Charongpun Musikavong, and Phanwatt Phungsai (2021) Characterization of lower Phong river dissolved organic matters and formations of unknown chlorine dioxide and chlorine disinfection by-products by Orbitrap mass spectrometry, *Chemosphere*, Vol. 265, 128653.
- (19) Chomphunut Poopipattana, Motoaki Suzuki, Hiroaki Furumai (2021) Impact of long-duration CSO events under different tidal change conditions on distribution of microbial indicators and PPCPs in Sumida river estuary of Tokyo Bay, Japan. *Environmental Science and Pollution Research*, 28(6), 7212-7225.
- (20) Warangkana Na Phatthalung, Oramas Suttinun, Phanwatt Phungsai, Ikuro Kasuga, Futoshi Kurisu, Hiroaki Furumai, Charongpun Musikavong (2021) Non-target screening of dissolved organic matter in raw water, coagulated water, and chlorinated water by Orbitrap mass spectrometry, *Chemosphere* Vol 264, Part 2, 128437.
- (21) Phanwatt Phungsai, Futoshi Kurisu, Ikuro Kasuga, Hiroaki Furumai (2021) Changes in dissolved organic matter during water treatment by sequential solid-phase extraction and unknown screening analysis, *Chemosphere* Vol 263, 128278.

* 和文雑誌

- (1) 上原悠太郎・栗栖太・春日郁朗・古米弘明 (2021) 高分解能 LC/MS による河川水中溶存有機物の網羅的ノンターゲット分析のための試料前処理法, 土木学会論文集(G) Vol.77, No.7, III_251-III_260.
- (2) 佐伯健, 古米弘明(2021)水道広域化による事業基盤強化効果の業務指標を用いた定量的評価,水道協会雑誌, 90(10), 11-19.
http://www.jwwa.or.jp/syuppan/system_file/magazine_file_20211104001.pdf
- (3) 伊藤 優一, 北村 隆光, 古米 弘明 (2021) 下水道事業におけるグリーンインフラ活用の現状と課題に関する考察, 下水道協会誌, 58(707), pp.64-76. https://doi.org/10.24748/jswa.58.707_64
- (4) 北山 千鶴, 森田 健二, 福地 広識, 李 星愛, 古米 弘明 (2021) 糞便汚染指標を基にしたお台場海浜公園における海水浴予報システムの試行運用, 水環境学会誌 44(3), pp.59-68.
<https://doi.org/10.2965/jswe.44.59>
- (5) 吉田季生, 渋尾欣弘, 谷口健司 (2021) 複数河川の同時氾濫を考慮した氾濫シミュレーションと水災害リスク評価. 土木学会論文集 B1 (水工学), 77(1), 12-23.
- (6) 尾崎 則篤, 和田 桂子, 村上 道夫, 中島 典之, 古米 弘明 (2021) 公表調査データの統計解析による市街地ノンポイント汚濁負荷流出量の予測とその信頼性評価 -負荷量の統計的推定および新規入手データを用いたモデルの検証と改良-, 水環境学会誌 44(1), pp.1-8.

○ 国際学会発表/Presentations at International Conferences

- (1) Chomphunut POOPIPATTANA, Hiroaki FURUMAI (2021) A model-based study on influence of tidal conditions on temporal changes in E. coli concentration at Odaiba seaside park after various rainfall events, IFAWET-4. (10-11 Dec, online/Hong Kong) [Oral and Poster]
- (2) Xinyue LIU, Futoshi KURISU, Kumiko OGUMA, Hiroaki FURUMAI (2021) Relationships between Structural Properties of Organic Compounds and Preferences for Radicals in UV/Cl₂ Treatment, IFAWET-4. (10-11 Dec, online/Hong Kong) [Oral and Poster] [Best Poster Presentation Award]
- (3) Aishwarya Pandey, Futoshi Kurisu, Ikuro Kasuga, Hiroaki Furumai (2021) Non-target screening to assess the effect of secondary treatment and chlorination on the organic micropollutants in effluent from domestic wastewater treatment plants, IFAWET-4. (10-11 Dec, online/Hong Kong) [Oral and Poster]
- (4) Lianhui Wu, Yoshimitsu Tajima, Dai Yamazaki, Yoshihiro Shibuo, Hiroshi Sanuki, Mitsuhiro Nakashima, Hiroaki Furumai (2021) Application of databank-based assimilation for development of real-time urban inundation prediction system, ICUD 2021. (25-28 Oct, online) [Oral]
- (5) Hiroaki Furumai, Yoshihiro Shibuo, Mitsuhiro Nakashima (2021) Real-time monitoring of water levels in a lowland drainage network in Yokohama and relationship between water level and rainfall characteristics, ICUD 2021. (25-28 Oct, online) [Oral]
- (6) Chomphunut Poopipattana, Motoaki Suzuki, Hiroaki Furumai (2021) Evaluation of fecal contamination in Tokyo coastal area after CSO events and prevention of waterfront by aquatic filter barrier, ICUD 2021. (25-28 Oct, online) [Oral]
- (7) Iftita Rahmatika, Ikuro Kasuga, Futoshi Kurisu, Hiroaki Furumai (2021) Dynamic changes of microbial communities from source to tap in chlorinated drinking water supply system, The 9th Microbial Ecology & Water Engineering Specialist Conference. (18-20 Oct, online) [Poster]

- (8) Yalan GAN, Ifitita RAHMATIKA, Ikuro KASUGA, Futoshi KURISU, Hiroaki FURUMAI (2021) Removal Efficiency of Nontuberculous Mycobacteria in A Full-scale Drinking Water Treatment Plant, WET2021-online. (11-12 August, online) [Oral and Poster] **[Best poster award]**
- (9) Ifitita Rahmatika, Ikuro Kasuga, Futoshi Kurisu and Hiroaki Furumai (2021) Diversity of Nontuberculous Mycobacteria in Drinking Water in Premise Plumbing, WET2021-online. (11-12 August, online) [Oral and Poster] **[Best poster award]**
- (10) Chomphunut Poopipattana and Hiroaki Furumai (2021) Influence of Tidal Conditions on Temporal Change in E. coli Concentration at Odaiba Seaside Park after Rainfall Events: A Modelling-based Study, WET2021-online. (11-12 August, online) [Oral and Poster]
- (11) Xinyue LIU, Futoshi KURISU, Kumiko OGUMA and Hiroaki FURUMAI (2021) Optimization of Data Pre-processing Parameters for Non-target Screening Analysis Using Solutions with 57 Compounds, WET2021-online. (11-12 August, online) [Oral and Poster]
- (12) Aishwarya Pandey, Hayato Sugawa, Ikuro Kasuga, Futoshi Kurisu and Hiroaki Furumai (2021) Target Screening Analysis of Emerging Contaminants items to be Surveyed in Domestic Wastewater Treatment Plants, WET2021-online. (11-12 August, online) [Oral and Poster]
- (13) Chomphunut Poopipattana, Motoaki Suzuki, Hiroaki Furumai (2021) Laboratory and modelling based studies to explain the fate of sewage markers in the Tokyo coastal area after rainfall events, IWA Digital World Water Congress. (24 May - 4 June, online) [Oral]

○ 国内学会発表/Presentations at Domestic Conferences

- (1) 渋尾欣弘(2021)日本における都市雨水管理の進展:レビュー, JDR 特集号「未来型の都市浸水リスク研究への取り組み」記念シンポジウム. (11/25, online) **【口頭】**
- (2) Kyu-Hyun Park(2021)内水氾濫解析用の排水システムモデル開発のための UAV 写真測量による高解像度地理空間データの適用性, JDR 特集号「未来型の都市浸水リスク研究への取り組み」記念シンポジウム. (11/25, online) **【口頭】**
- (3) 森田健二, 市橋拓弥, 古米弘明(2021)大腸菌濃度のモデル計算結果を活用したお台場海水浴予報システムの試行と今後の課題, 第 58 回環境工学研究フォーラム. (11/16-18, online) **【口頭・ポスター】** **【優秀ポスター発表賞】**
- (4) 古米弘明・Chomphunut POOPIPATTANA(2021)お台場海浜公園における降雨後の大腸菌濃度変化に及ぼす潮汐影響のモデル評価, 第 58 回環境工学研究フォーラム. (11/16-18, online) **【口頭・ポスター】**
- (5) 小室黎汰, 春日郁朗, 栗栖太, 古米弘明(2021)様々な生物学的浄水処理における完全アンモニア酸化細菌(comammox)の存在量と多様性の評価, 日本水処理生物学会第 57 回大会. (10/28-30, 神奈川/online) **【口頭】** **【ベストプレゼンテーション賞】**
- (6) 鈴木研志, 上原悠太郎, 栗栖太, 野尻秀昭(2021)基質競合下における代謝ネットワークの進化と微生物共存, 第 73 回生物工学会大会. (10/27-29, online)
- (7) 古米弘明(2021)面源汚濁負荷量の把握とその削減対策の方向性, 第 24 回日本水環境学会シンポジウム, pp.48-49 (9/14-15, online)
- (8) 春日郁朗, Ifitita Rahmatika, 栗栖太, 古米弘明(2021)給水管における微生物再増殖と水質管理, 第 24 回日本水環境学会シンポジウム, p.121 (9/14-15, online)
- (9) 古米弘明(2021)台場周辺海域における雨天時越流水による糞便汚染の評価と予測, 第 24 回日本水環境学会シンポジウム, pp.269-270 (9/14-15, online)

- (10) 古米弘明, 渋尾欣弘, 朴奎炫, 馬場真司, 片山順一(2021)無人航空機による空中写真情報を活用した用排水路を含む氾濫解析モデルの構築, 第 58 回下水道研究発表会. (8/17-19, 大阪/online) 【口頭】
- (11) 山科健一, 馬場真司, 片山順一, 渋尾欣弘, 古米弘明(2021)平成 30 年 7 月豪雨における丹波篠山市京口ポンプ場の浸水対策のモデル評価, 第 58 回下水道研究発表会. (8/17-19, 大阪/online) 【口頭】
- (12) 新田見匡, 甲田紘紀, 加藤愛, 武田穰, 金田一智規, 飛野 智宏, 栗栖 太(2021)バルキング活性汚泥に優占する type1863 糸状性細菌に特異的な FISH プローブの開発, 第 55 回日本水環境学会年会, p.67. (3/10-12, online) 【口頭】
- (13) 長澤杏香, 春日郁朗, 栗栖 太, 古米弘明(2021)Class 1 インテグロンを指標とした都市河川における薬剤耐性遺伝子汚染の評価, 第 55 回日本水環境学会年会, p.164. (3/10-12, online) 【口頭】 **【クリタ賞】**
- (14) 石井淑大, 栗栖 太, 春日郁朗, 古米弘明(2021)荒川上中下流の浄水場における溶存有機物除去のノンターゲットスクリーニング分析による評価, 第 55 回日本水環境学会年会, p.186. (3/10-12, online) 【口頭】
- (15) 小室黎汰, 春日郁朗, 古米弘明, 栗栖 太(2021)上向流式生物接触ろ過担体に付着する Commamox 細菌の存在量の評価, 第 55 回日本水環境学会年会, p.246. (3/10-12, online) 【口頭】
- (16) Pandey Aishwarya, Kurisu Futoshi, Kasuga Ikuro, Furumai Hiraoki(2021)Comparison of various solid phase extraction methods for target and non-target screening analyses of emerging contaminants in wastewater, 第 55 回日本水環境学会年会, p.363. (3/10-12, online) 【口頭】
- (17) 上原悠太郎, 栗栖 太, 春日郁朗, 古米弘明(2021)高分解能 LC/MS による都市河川水中溶存有機物のノンターゲット分析に適した濃縮・脱塩方法の検討, 第 55 回日本水環境学会年会, p.367. (3/10-12, online) 【口頭】

○ 招待講演/Invited Speech

- (1) 栗栖太(2021)精密質量分析計を用いた未規制環境汚染物質の監視手法の開発, 第 30 回(2021 年度)環境安全研究センターシンポジウム (12/23, online).
- (2) 古米弘明(2021)持続可能な都市圏水利用システムに向けて, 東大水フォーラム [基調講演] (12/8, online)
- (3) 栗栖太(2021)排水中・環境水中の有機物と微生物の理解に基づく制御を目指して, 土木学会環境工学委員会環境技術思想小委員会講演会 (9/28, online).
- (4) Yoshihiro Shibuo (2021) Topic: Flood [Theme 5: Hybrid Infrastructure for Urban Sustainability], Online Workshop 2021 on Sustainable Development, Stockholm-Tokyo University Partnership (9/27-28, online)
- (5) 渋尾欣弘(2021)話題提供 [研究討論会(17) 地下空間研究委員会／気候変動と地下空間 ～頻発する豪雨災害に対する地下施設への影響とその対応～], 土木学会 令和 3 年度全国大会 研究討論会 (9/6-7, online)
- (6) 古米弘明(2021)気候変動適応に向けた戦略的な都市浸水管理, 東大 EDGE-NEXT 第 3 回(防災) (5/21, online)
- (7) 古米弘明(2021)気候変動を踏まえた都市浸水対策と雨水の活用, 第二回気候変動と雨水活用シンポジウム「雨水活用の普及と基準や制度を考える」[基調講演] (5/1-12, 事前配信)
- (8) 古米弘明(2021)気候変動を踏まえた都市浸水対策の方向性, 第 25 回「震災対策技術展」横浜 (3/17-18, 横浜)

- (9) 洪尾欣弘(2021)都市浸水のリアルタイム予測, 東大水フォーラム公開シンポジウム 水害予測・防災・減災に関する最新研究動向 (3/2, online)

○ 総説・解説/Reviews & Commentaries

- (1) 古米弘明(2021)気候変動を踏まえた下水道による都市浸水対策(特集:流域治水の実現に向けて), 月刊下水道, 44(6), pp.6-10.
- (2) 春日郁朗(2021)ベトナムから考える社会インフラとしての下水道の役割(環境技術思想—持続可能な社会に向かって 第10講), 月刊下水道, 44(4), pp.72-78.
- (3) 古米弘明(2021)未来型の都市浸水リスク管理に向けて, 水循環:貯留と浸透, Vol.119, pp.3-7.

○ その他記事/Other Articles

- (1) 古米弘明(2021)[インタビュー] 水没するまちを救う, ACE 建設業界, 11(12), pp.6-11.
- (2) 古米弘明(2021)[インタビュー] 総力を挙げて取り組む流域治水(特集:流域治水に資する下水道浸水対策), 日本下水道新聞, 2021.12.1.
- (3) 洪尾欣弘(2021)[新聞寄稿] 日本下水道新聞特集号「流域治水への実現へ」2021.7.21.