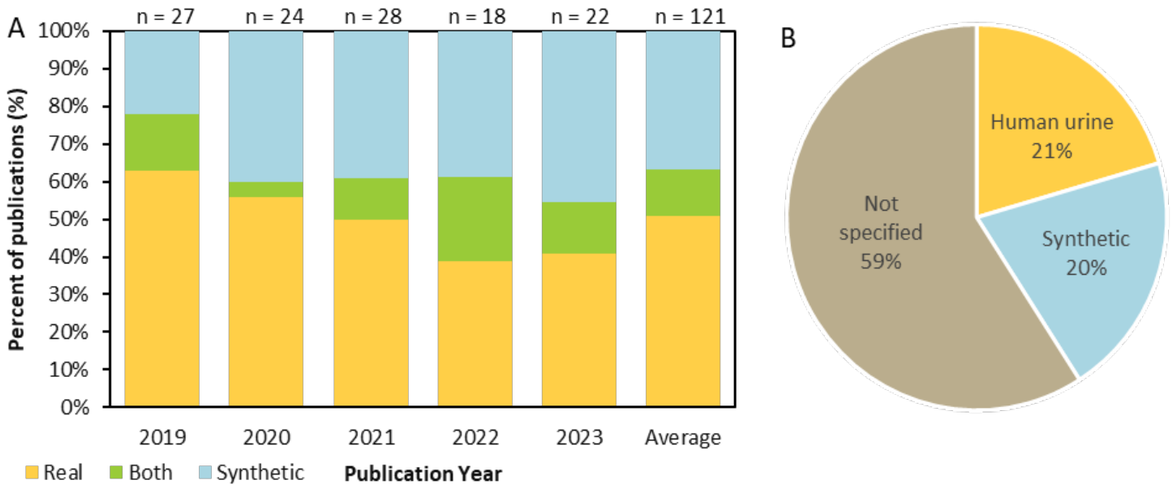
Supplementary File for "**An urgent call for using real human urine in decentralized sanitation research and advancing protocols for preparing synthetic urine".**

An analysis of urine research literature, specifically focusing on nutrient recovery, published over the past five years, shows an increasing trend in the use of synthetic urine (Supplementary Information, Fig. S1), with approximately 40% of these studies conducted exclusively with synthetic urine. Of particular concern is that among several publications that exclusively used synthetic urine, 21% referred to the type of urine used as "human urine" in the title of their publications.



Number	Year	Paper Title	DOI	Urine Type (Real or Synthetic)	Urine typology	Was typology explicitly stated?
1	**2023**	Cyanobacteria cultivation on human urine for nutrients recovery	https://doi.org/10.1016/j.algal.2023.103064	Real	Hydrolyzed	Yes
2	**2023**	Insights into the promotion of urine-diverting toilets based on the fertilizer efficiency of artificial phosphate ore recovered from source-separated urine	https://doi.org/10.1016/j.resconrec.2022.106807	Synthetic	Fresh	Yes
3	**2023**	The advantage of a two-stage nitrification method for fertilizer recovery from human urine	https://doi.org/10.1016/j.watres.2023.119932	Real	Hydrolyzed	Yes
4	**2023**	Ammonia recovery from source-separated hydrolyzed urine via a dual-membrane distillation in-series process	https://doi.org/10.1016/j.cej.2023.144215	Real	Hydrolyzed	Yes
5	**2023**	Nutrient recovery from yellow water to soil-crop systems	https://link.springer.com/article/10.1007/s11356-022-24058-6	Real	Not stated	No
6	**2023**	An integrated strategy for nutrient harvesting from hydrolyzed human urine as high-purity products: Tracking of precipitation transformation and precise regulation	https://doi.org/10.1016/j.scitotenv.2022.158721	Synthetic	Hydrolyzed	Yes
7	**2023**	Simultaneous recovery of nutrients and water from human urine by a novel thermally activated peroxydisulfate and membrane distillation integrated system	https://doi.org/10.1016/j.cej.2023.141548	Real	Fresh	Yes
8	**2023**	Concentrating stabilized human urine using eutectic freeze crystallization for liquid fertilizer production	https://doi.org/10.1016/j.watres.2023.119760	Real and Synthetic	Base stablized	Yes
9	**2023**	A novel approach for enhancing nitrogen and hydrogen recovery from urine in microbial electrochemical gas-permeable membrane system	https://doi.org/10.1016/j.scitotenv.2023.161446	Synthetic	Fresh	Yes

10	**2023**	Valorization of Human Urine with Mixed Microalgae Examined through Population Dynamics, Nutrient Removal, and Biogas Content	https://doi.org/10.3390/su15086922	Real	Collected fresh, no indication of stbailization	No
11	**2023**	Cyanophycin production in turbidostat cultivation of cyanobacteria under phosphorus limitation on synthetic urine media	https://doi.org/10.1016/j.algal.2023.103143	Synthetic	Dilute, Hydrolzed	No
12	**2023**	N, P, K recovery from hydrolysed urine by Na-chabazite adsorption integrated with ammonia stripping and (K-)struvite precipitation	https://doi.org/10.1016/j.scitotenv.2022.159277	Snythetic	Hydrolyzed	Yes
13	**2023**	Factors influencing the recovery of organic nitrogen from fresh human urine dosed with organic/inorganic acids and concentrated by evaporation in ambient conditions	https://doi.org/10.1016/j.scitotenv.2023.163053	Real	Fresh and Acid stabilized	Yes
14	**2023**	Interfacial solar evaporation toward efficient recovery of clean water and concentration of nutrients from urine with polypyrrole-based photothermal conversion films	https://doi.org/10.1016/j.resconrec.2022.106645	Synthetic	Hydrolyzed	Yes
15	**2023**	Optimization and kinetic modeling of phosphate recovery as struvite by electrocoagulation from source-separated urine	https://link.springer.com/article/10.1007/s11356-022-23446-2	Real	Fresh and hydrolyzed	Yes
16	**2023**	Urine and grey water based liquid fertilizer – Production and the response of plants	https://doi.org/10.1016/j.jenvman.2023.117248	Synthetic	Dilute possibly nitrified	No
17	**2023**	Norfloxacin degradation in synthetic human urine using nickel converter slag-laterite heterogeneous Electro-Fenton process	https://doi.org/10.1016/j.jwpe.2023.103723	Synthetic	Fresh	No,
18	**2023**	Human urine: A novel source of phosphorus for vivianite production	https://doi.org/10.1016/j.scitotenv.2023.164517	Real and Synthetic	Fresh	Yes
19	**2023**	Catalytic performance of rGO-Zeolite modified anode in clay biophotovoltaics system for effective urine treatment	https://doi.org/10.1016/j.ijhydene.2022.09.216	Real	Fresh	Yes
20	**2023**	Factors hindering the degradation of pharmaceuticals from human urine in an iron-activated persulfate system	https://doi.org/10.1016/j.jes.2022.12.022	Synthetic	Fresh and hydrolyzed	Yes
21	**2023**	Degradation of 75 organic micropollutants in fresh human urine and water by UV advanced oxidation process	https://doi.org/10.1016/j.watres.2023.120221	Synthetic and real	Fresh	Yes
22	**2023**	Simultaneous Urea and Phosphate Recovery from Synthetic Urine by Electrochemical Stabilization	https://doi.org/10.3390/membranes13080699	Synthetic	Fresh	No
23	**2022**	Concentrating stabilized urine with reverse osmosis: How does stabilization method and pre-treatment affect nutrient recovery, flux, and scaling?	https://doi.org/10.1016/j.watres.2021.117970	Synthetic and real	Acid and base stabilized	Yes
24	**2022**	Energy efficient bioelectro-concentration and recovery system of nutrients from human urine by integrating forward osmosis	https://doi.org/10.1016/j.resconrec.2022.106253	Synthetic	Dilute partially hydrolyzed	No
25	**2022**	Simultaneous nutrient-energy recovery from source-separated urine based on bioelectrically enhanced bipolar membrane-driven in-situ alkali production coupling with gas-permeable membrane system	https://doi.org/10.1016/j.cej.2021.134161	Synthetic	Dilute partially hydrolyzed	No
26	**2022**	Assessment of K-Struvite Precipitation as a Means of Nutrient Recovery from Source Separated Human Urine	https://doi.org/10.3390/su14031082	Synthetic	Unclear	No
27	**2022**	Simultaneous recovery of nutrients and power generation from source-separated urine based on bioelectrical coupling with the hydrophobic gas permeable tube system	https://doi.org/10.1016/j.scitotenv.2022.153788	Synthetic	Dilute partially hydrolyzed	Yes
28	**2022**	Unintentional release of antibiotics associated with nutrients recovery from source-separated human urine by biochar	https://doi.org/10.1016/j.chemosphere.2022.134426	Real	Dilute fresh urine (no stbailization)	Yes
29	**2022**	A hybrid nanofiltration and reverse osmosis process for urine treatment: Effect on urea recovery and purity	https://doi.org/10.1016/j.watres.2022.118851	Real and Synthetic	Base stabilized	Yes
30	**2022**	Water and nutrient recovery from stored urine by forward osmosis with an ammonium bicarbonate draw solution	https://www.frontiersin.org/articles/10.3389/fenvs.2022.937456/full	Real	Stored hydrolysed urine	Yes
31	**2022**	Donnan dialysis for phosphate recovery from diverted urine	https://doi.org/10.1016/j.watres.2022.119302	Synthetic	Fresh/and hysrolyzed	Yes
32	**2022**	Nitrogen and phosphorous recycling from human urine by household electrochemical fixed bed in sparsely populated regions	https://doi.org/10.1016/j.watres.2022.118467	Synthetic and real	Both were dilute and hydrolyzed	Yes

33	**2022**	A novel mixing mechanism for effective stabilisation of urea in urinals for subsequent nutrient recovery	https://journals.co.za/doi/abs/10.1016/j.sajce.2022.07.006	Real	Base stabilized	Yes
34	**2022**	Water and nutrients recovery from synthetic source-separated human urine using AGMD	https://doi.org/10.1016/j.jece.2022.107176	Synthetic	Fresh, acidic, and hydrolyxed	Yes
35	**2022**	Ammonia recovery and fouling mitigation of hydrolyzed human urine treated by nanofiltration and reverse osmosis	https://pubs.rsc.org/en/content/articlehtml/2022/ew/d1ew00601k	Real	Real hydrolyzed	Yes
36	**2022**	Recovering nutrients and rejecting trace organic compounds in human urine by a forward osmosis–membrane distillation (FO–MD) hybrid system	https://doi.org/10.2166/wst.2022.311	Real	Fresh	No
37	**2022**	Microbial fuel cell treatment energy-offset for fertilizer production from human urine	https://doi.org/10.1016/j.chemosphere.2022.133594	Synth and real	Hydrolyzed	Yes
38	**2022**	Recovery of ammonium nitrate solution from urine wastewater via novel free nitrous acid (FNA)-mediated two-stage processes	https://doi.org/10.1016/j.cej.2022.135826	Real	Hydrolyzed and dilute	Yes
39	**2022**	Start-up and performance of a downflow fluidised bed reactor for biological treatment of yellow wastewater and nutrient recovery	https://doi.org/10.2166/wst.2022.167	Real	Fresh	Yes
40	**2022**	Stabilization and concentration of nitrogen in synthetic urine with peracetic acid and progressive freeze concentration	https://doi.org/10.1016/j.jece.2022.107768	Synthetic	Fresh	Yes
41	**2021**	Resource Recovery from Synthetic Nitrified Urine in the Hydroponic Cultivation of Lettuce (Lactuca sativa Var. capitata L.)	https://doi.org/10.3390/agronomy11112242	Synth	Nitrified	Yes
42	**2021**	On-site urine treatment combining Ca(OH)2 dissolution and dehydration with ambient air	https://doi.org/10.1016/j.wroa.2021.100124	Real	Real base stabilized	Yes
43	**2021**	Phosphate recovery and simultaneous nitrogen removal from urine by electrochemically induced struvite precipitation	https://link.springer.com/article/10.1007/s11356-020-10924-8	Synthetic	Partially/fully hdrylyzed	No
44	**2021**	Optimised operational parameters for improved nutrient recovery from hydrolysed urine by bio-electroconcentratio	https://doi.org/10.1016/j.seppur.2021.119793	Synthetic	Hydrolyzed	Yes
45	**2021**	Demonstration of energy and nutrient recovery from urine by field-scale microbial fuel cell system	https://doi.org/10.1016/j.procbio.2020.11.014	Real	Unlcear	No
46	**2021**	Nutrient recovery and microalgae biomass production from urine by membrane photobioreactor at low biomass retention times	https://doi.org/10.1016/j.scitotenv.2021.147423	Real	Fresh	Yes
47	**2021**	Electrochemical recovery of H2 and nutrients (N, P) from synthetic source separate urine water	https://doi.org/10.1016/j.chemosphere.2020.129361	Synthetic	Dilute partially hydrolyzed	No
48	**2021**	Fertiliser recovery from source-separated urine via membrane bioreactor and heat localized solar evaporation	https://doi.org/10.1016/j.watres.2021.117810	Real	Hydrolyzed	Yes
49	**2021**	Ammonium and potassium removal from undiluted and diluted hydrolyzed urine using natural zeolites	https://doi.org/10.1016/j.chemosphere.2020.128849	Real	Hydrolzed	Yes
50	**2021**	Sustainable recovery of plant essential Nitrogen and Phosphorus from human urine using industrial coal fly ash	https://doi.org/10.1016/j.eti.2021.101985	Synth	Fresh	No
51	**2021**	Nutrients recovery from urine through struvite formation using lab-scale fluidized-bed homogeneous crystallization reactor	https://stdjsee.scienceandtechnology.com.vn/index.php/stdjsee/article/view/625	Real	Fresh	No
52	**2021**	Electro-concentration of urine designed for separation of sodium from nitrogen	https://doi.org/10.1016/j.seppur.2021.119275	Synthetic	Ureolyzed/Hydrolyzed	Yes
53	**2021**	Probing the degradation of pharmaceuticals in urine using MFC and studying their removal efficiency by UPLC-MS/MS	https://doi.org/10.1016/j.jpha.2020.04.006	Real	Collected fresh	No

54	**2021**	Urea recovery from stabilized urine using a novel ethanol evaporation and recrystallization process	https://doi.org/10.1016/j.ceja.2021.100174	Synthetic and real	Base stabilized	Yes
55	**2021**	Recovery of high quality water from human urine using a novel vertical up-flow forward osmosis reactor	https://doi.org/10.1016/j.seta.2021.101124	Real	Fresh	Yes
56	**2021**	Calcium removal from stabilized human urine by air and CO2 bubbling	https://doi.org/10.1016/j.watres.2021.117467	Real	Base stabilized	Yes
57	**2021**	Precipitation to remove calcium ions from stabilized human urine as a pre-treatment for reverse osmosis	https://doi.org/10.2166/wst.2021.479	Real and Synthetic	Base stabilized	Yes
58	**2021**	Highly efficient phosphorus and potassium recovery from urine via crystallization process in a fluidized bed reactor system	https://doi.org/10.1016/j.jece.2021.105623	Synthetic	Dilute hydrolyzed	No
59	**2021**	Electrochemical system for selective oxidation of organics over ammonia in urine	https://pubs.rsc.org/en/content/articlehtml/2021/ew/d0ew01057j	Real and Synthetic	Ureolyzed/Hydrolyzed	Yes
60	**2021**	Struvite recovery from human urine in inverse fluidized bed reactor and evaluation of its fertilizing potential on the growth of Arachis hypogaea	https://doi.org/10.1016/j.jece.2020.104965	Synthetic	Fresh	No
61	**2021**	Electrochemical In Situ pH Control Enables Chemical-Free Full Urine Nitrification with Concomitant Nitrate Extraction	https://pubs.acs.org/doi/full/10.1021/acs.est.1c00041	Real	Dilute, electorchemically stabilized	Yes
62	**2021**	Ammonia capture from human urine to harvest liquid N-P compound fertilizer by a submerged hollow fiber membrane contactor: Performance and fertilizer analysis	https://doi.org/10.1016/j.scitotenv.2020.144478	Synthetic	Hydrolzed	Yes
63	**2021**	Removal of pharmaceuticals from nitrified urine	https://doi.org/10.1016/j.chemosphere.2021.130870	Synthetic	Nitrified	Yes
64	**2021**	Critical flux on a submerged membrane bioreactor for nitrification of source separated urine	https://doi.org/10.1016/j.psep.2021.07.039	Real	Hydrolyzed	Yes
65	**2021**	Stabilization of Urea for Recovery from Source-Separated Urine Using Electrochemically Synthesized Hydrogen Peroxide	https://pubs.acs.org/doi/full/10.1021/acsestengg.1c00194	synthetic	Hydrolyzed	Yes
66	**2021**	Removal of pharmaceuticals from human urine during storage, aerobic biological treatment, and activated carbon adsorption to produce a safe fertilizer	https://doi.org/10.1016/j.resconrec.2020.105341	Real	Hydrolyzed	Yes
67	**2021**	Alkaline Dehydration of Human Urine Collected in Source-Separated Sanitation Systems Using Magnesium Oxide	https://www.frontiersin.org/articles/10.3389/fenvs.2020.619901/full?utm_source=dlvr.it&utm_medium=twitter	real	Base stabilized	Yes
68	**2021**	Drying fresh human urine in magnesium-doped alkaline substrates: Capture of free ammonia, inhibition of enzymatic urea hydrolysis & minimisation of chemical urea hydrolysis	https://doi.org/10.1016/j.cej.2021.131026	real	Base stabilized	Yes
69	**2020**	Field Testing a Pilot-Scale System for Alkaline Dehydration of Source-Separated Human Urine: A Case Study in Finland	https://www.frontiersin.org/articles/10.3389/fenvs.2020.570637/full	Real	Base stabilized	Yes
70	**2020**	Preparation and characterization of a decentralized modular yellow water nutrient recovery system	https://doi.org/10.1016/j.jenvman.2020.111345	Synthetic	Partially hydrolyzed	No
71	**2020**	Biological nutrient recovery from human urine by enriching mixed microalgal consortium for biodiesel production	https://doi.org/10.1016/j.jenvman.2020.110111	Real	Fresh dilute	Yes
72	**2020**	A green method for the simultaneous recovery of phosphate and potassium from hydrolyzed urine as value-added fertilizer using wood waste	https://doi.org/10.1016/j.resconrec.2020.104793	Real and Synthetic	Hydorlyzed	Yes
73	**2020**	Biochar-activated peroxydisulfate as an effective process to eliminate pharmaceutical and metabolite in hydrolyzed urine	https://doi.org/10.1016/j.watres.2020.115809	Synthetic	Hydrolyzed	Yes
74	**2020**	A five-stage treatment train for water recovery from urine and shower water for long-term human Space missions	https://doi.org/10.1016/j.desal.2020.114634	Real	Nitrified	Yes

75	**2020**	Stabilization of source-separated urine by heat-activated peroxydisulfate	https://doi.org/10.1016/j.scitotenv.2020.142213	real	hydroluzed	Yes
76	**2020**	Electrochemically Induced Precipitation Enables Fresh Urine Stabilization and Facilitates Source Separation	https://pubs.acs.org/doi/full/10.1021/acs.est.9b06804	Real	Fresh	Yes
77	**2020**	Alkaline dehydration of source-separated fresh human urine: Preliminary insights into using different dehydration temperature and media	https://doi.org/10.1016/j.scitotenv.2020.139313	Real	Base stabilized	Yes
78	**2020**	Comparison of the use of functional porous organic polymer (POP) and natural material zeolite for nitrogen removal and recovery from source-separated urine	https://doi.org/10.1016/j.jece.2020.104296	Synthetic	Hydrolyzed	Yes
79	**2020**	Impact of acetic acid addition on nitrogen speciation and bacterial communities during urine collection and storage	https://doi.org/10.1016/j.scitotenv.2020.141010	Real	Acid Stabilzied	Yes
80	**2020**	Ammonia Recovery from Hydrolyzed Human Urine by Forward Osmosis with Acidified Draw Solution	https://pubs.acs.org/doi/full/10.1021/acs.est.0c02751	Real	Hydrolyzed	Yes
81	**2020**	Rejection of nitrogen species in real fresh and hydrolyzed human urine by reverse osmosis and nanofiltration	https://doi.org/10.1016/j.jece.2020.103993	Real	Fresh and hydrolyzed	Yes
82	**2020**	Removal of pharmaceuticals from nitrified urine by adsorption on granular activated carbon	https://doi.org/10.1016/j.wroa.2020.100057	Real	Partially nitrified	Yes
83	**2020**	Sanitation and dewatering of human urine via membrane bioreactor and membrane distillation and its reuse for fertigation	https://doi.org/10.1016/j.jclepro.2020.122390	Real	Hydrolyzed	Yes
84	**2020**	Bio-electrochemical COD removal for energy-efficient, maximum and robust nitrogen recovery from urine through membrane aerated nitrification	https://doi.org/10.1016/j.watres.2020.116223	Real	Dilute base hydroylzed	Yes
85	**2020**	Energy recovery through reverse electrodialysis: Harnessing the salinity gradient from the flushing of human urine	https://doi.org/10.1016/j.watres.2020.116320	Real	Yes	Yes
86	**2020**	Selective Recovery of Phosphorus from Synthetic Urine Using Flow-Electrode Capacitive Deionization (FCDI)-Based Technology	https://pubs.acs.org/doi/full/10.1021/acsestwater.0c00065	Synthetic	Unclear	No
87	**2020**	Phosphorus and potassium recovery from human urine using a fluidized bed homogeneous crystallization (FBHC) process	https://doi.org/10.1016/j.cej.2019.123282	Synthetic	Hydrolyzed	Yes
88	**2020**	Novel Isothermal Membrane Distillation with Acidic Collector for Selective and Energy-Efficient Recovery of Ammonia from Urine	https://pubs.acs.org/doi/full/10.1021/acssuschemeng.0c00643	Synthetic	Hydrolyzed	Yes
89	**2020**	Recovery of ammonium nitrogen from human urine by an open-loop hollow fiber membrane contactor	https://doi.org/10.1016/j.seppur.2020.116579	Synthetic	Hydrolyzed	Yes
90	**2020**	Effect of storage on physicochemical characteristics of urine for phosphate and ammonium recovery as struvite	https://doi.org/10.1016/j.ibiod.2020.105053	Real	Fresh and then hydrolyzed	Yes
91	**2020**	Recovery of monovalent mineral salts from urine in controlled ecological life support system by nanofiltration: Feasibility study	https://doi.org/10.1016/j.desal.2020.114344	Synthetic	Fresh	No
92	**2020**	The recovery of phosphorus from source-separated urine by repeatedly usable magnetic Fe3O4@ZrO2 nanoparticles under acidic conditions	https://doi.org/10.1016/j.envint.2019.105322	Synthetic	Hydrolyzed	Yes
93	**2020**	Phosphorous removal and high-purity struvite recovery from hydrolyzed urine with spontaneous electricity production in Mg-air fuel cell	https://doi.org/10.1016/j.cej.2019.123517	Synthetic	Hydrolyzed	Yes
94	**2019**	Efficient nutrient recovery/removal from real source-separated urine by coupling vacuum thermal stripping with activated sludge processes	https://doi.org/10.1016/j.jclepro.2019.02.181	Real	Hydrolyzed	Yes
95	**2019**	Nutrient recovery and microbial diversity in human urine fed microbial fuel cel	https://doi.org/10.2166/wst.2019.089	Real	Fresh (not stabilized)	Yes
96	**2019**	Self-Powered Bioelectrochemical Nutrient Recovery for Fertilizer Generation from Human Urine	https://doi.org/10.3390/su11195490	Real	Hydrolyzed	Yes
97	**2019**	Three-stage treatment for nitrogen and phosphorus recovery from human urine: Hydrolysis, precipitation and vacuum stripping	https://doi.org/10.1016/j.jenvman.2019.109435	Real	Hydrolyzed	Yes

98	**2019**	Anaerobic ureolysis of source-separated urine for NH3 recovery enables direct removal of divalent ions at the toilet	https://doi.org/10.1016/j.watres.2018.10.021	Real	Collected fresh and then hydrolyzed	Yes
99	**2019**	Recovery of nitrogen and phosphorus from human urine using membrane and precipitation process	https://doi.org/10.1016/j.jenvman.2019.06.046	Real	Hydrolyzed	No
100	**2019**	Optimisation of a forward osmosis and membrane distillation hybrid system for the treatment of source-separated urine	https://doi.org/10.1016/j.seppur.2018.11.003	Synthetic	Fresh and stored	Yes
101	**2019**	Comparison of different K-struvite crystallization processes for simultaneous potassium and phosphate recovery from source-separated urine	https://doi.org/10.1016/j.scitotenv.2018.09.232	Real	Based stabilized	Yes
102	**2019**	Multi-functional microbial fuel cells for power, treatment and electro-osmotic purification of urine	https://doi.org/10.1002/jctb.5792	Real	Hydrolyzed	No
103	**2019**	Preliminary results for start-up and adaptation of an EGSB reactor for valorization and treatment of fresh urine	doi: 10.5004/dwt.2019.24935	Real	Partially hydrolyzed	Yes
104	**2019**	Recovery of phosphates as struvite from urine-diverting toilets: optimization of pH, Mg:PO4 ratio and contact time to improve precipitation yield and crystal morphology	https://doi.org/10.2166/wst.2019.371	Synthetic	Hydrolyzed (no urea in the recipe	No
105	**2019**	Urea recovery from fresh human urine by forward osmosis and membrane distillation (FO–MD	https://pubs.rsc.org/en/content/articlehtml/2019/ew/c9ew00720b	Real and synthetic	Base and acid stabilized	Yes
106	**2019**	Microalgae grow on source separated human urine in Nordic climate: Outdoor pilot-scale cultivation	https://doi.org/10.1016/j.jenvman.2019.02.074	Real	Hyrolzed	Yes
107	**2019**	Techno-economic feasibility of recovering phosphorus, nitrogen and water from dilute human urine via forward osmosis	https://doi.org/10.1016/j.watres.2018.11.056	Real	Fresh	Yes
108	**2019**	Optimization studies on the production of struvite from human urine – waste into value	https://www.deswater.com/DWT_articles/vol_155_papers/155_2019_134.pdf	Real and synthetic	Fresh	No
109	**2019**	Optimization of algae production on urine	https://doi.org/10.1016/j.algal.2019.101667	Real ands ynthetic	Fresh	No
110	**2019**	NUTRIENT REMOVAL FROM HUMAN URINE BY CHEMICAL PRECIPITATION	https://www.cabdirect.org/cabdirect/abstract/20193484952	real	Hydrolyzed	Yes
111	**2019**	Water recovery from hydrolysed human urine samples via direct contact membrane distillation using PVDF/PTFE membrane	https://doi.org/10.1016/j.seppur.2018.10.035	Real	hydrolyzed	Yes
112	**2019**	Alleviating Na+ effect on phosphate and potassium recovery from synthetic urine by K-struvite crystallization using different magnesium sources	https://doi.org/10.1016/j.scitotenv.2018.11.259	Snythetic	Hydrolyzed urine after ammonia stripping	Yes
113	**2019**	P-recovery in a pilot-scale struvite crystallisation reactor for source separated urine systems using seawater and magnesium chloride as magnesium sources	https://doi.org/10.1016/j.scitotenv.2019.03.485	Synthetic	Stored hydrolysed urine	Yes
114	**2019**	Membrane stripping enables effective electrochemical ammonia recovery from urine while retaining microorganisms and micropollutants	https://doi.org/10.1016/j.watres.2018.11.072	Real	Hydrolyzed	Yes
115	**2019**	Manufacturing bio-bricks using microbial induced calcium carbonate precipitation and human urine	https://doi.org/10.1016/j.watres.2019.05.069	Real	Base stsbilized	Yes
116	**2019**	Human urine as a forward osmosis draw solution for the application of microalgae dewatering	https://doi.org/10.1016/j.jhazmat.2019.06.001	Real and synthetic	Fresh and hydrolyzed	Yes
117	**2019**	Optimizing the modification of wood waste biochar via metal oxides to remove and recover phosphate from human urine	https://link.springer.com/article/10.1007/s10653-017-9986-6	Real	Hydrolyzed	Yess
118	**2019**	Oxidation of Pharmaceuticals by Ferrate(VI) in Hydrolyzed Urine: Effects of Major Inorganic Constituents	https://pubs.acs.org/doi/full/10.1021/acs.est.9b00006	Synthetic	Hydrolyzed	Yes
119	**2019**	Urine nitrification with a synthetic microbial community	https://doi.org/10.1016/j.syapm.2019.126021	Synthetic	Hydrolyzed	Yes

120	**2019**	Phosphorus recovery from urine using cooling water system effluent as a precipitant	https://doi.org/10.1016/j.jenvman.2019.05.057	Real	Fredh and hydrolysed	Yes