

Academic development support for implementing CDIO

Kase, Kärt; Kasuk, Tiina; Rüütmann, Tiia; Sonk, Kaimo; Sell, Raivo; Annus, Ivar 18th CDIO : International Conference : proceedings - full papers 2022 / p. 634-646 https://en.ru.is/media/cdio2022/CDIO_2022_Proceedings.pdf

Air pocket dynamics under bridging of stratified flow during rapid filling of a horizontal pipe

Kaur, Katrin; Laanearu, Janek; Annus, Ivar Journal of hydraulic engineering 2023 / art. 04022030, 11 p. : ill [https://doi.org/10.1061/\(ASCE\)HY.1943-7900.0002021](https://doi.org/10.1061/(ASCE)HY.1943-7900.0002021) [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Andmepõhine maailm vajab insenere rohkem kui kunagi varem

Rammus, Kristin; Annus, Ivar Trialoog 2025 <https://trialoog.taltech.ee/andmepohine-maailm-vajab-insenere-rohkem-kui-kunagi-varem/>

An assessment framework for evaluating the digitalisation potential of stormwater management and monitoring in small- and medium-sized water utilities

Suits, Kristjan; Annus, Ivar; Kändler, Nils; Kaur, Katrin; Kõiv, Kerta; Arm, Liisi; Barndöck, Helen Urban Water Journal 2025 <https://doi.org/10.1080/1573062X.2025.2511810>

Automatic calibration module for an urban drainage system model

Annus, Ivar; Vassiljev, Anatoli; Kändler, Nils; Kaur, Katrin Water 2021 / art. 1419 <https://doi.org/10.3390/w13101419> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Automatic calibration toolbox for SWMM5

Vassiljev, Anatoli; Suits, Kristjan; Kaur, Katrin; Kändler, Nils; Truu, Murel; Annus, Ivar Advances in engineering software 2023 / art. 103528 <https://doi.org/10.1016/j.advengsoft.2023.103528> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

ChangeMakers – promoting engineering through developing the soft skills of youngsters

Annus, Ivar; Kaur, Katrin Futureproofing Engineering Education for Global Responsibility : Proceedings of the 27th International Conference on Interactive Collaborative Learning (ICL 2024) ; vol. 3 2025 / p. 184-194 https://doi.org/10.1007/978-3-031-83523-0_17

Controlling peak runoff from plots by coupling street storage with distributed real time control

Kändler, Nils; Annus, Ivar; Vassiljev, Anatoli Urban water journal 2022 / p. 97-108 : ill <https://doi.org/10.1080/1573062X.2021.1958235> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Controlling stormwater runoff from impermeable areas by using smart inlets

Kändler, Nils; Annus, Ivar; Vassiljev, Anatoli; Puust, Raido; Kaur, Katrin New trends in urban drainage modelling : UDM 2018 : Conference proceedings 2019 / p. 263-268 https://doi.org/10.1007/978-3-319-99867-1_44 [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Decentralized real-time control platform for urban drainage systems in climate proof smart cities = Sademeveesüsteemide detsentraliseeritud juhtimissüsteemi platvorm kliimakindlates tarkades linnades

Kändler, Nils 2021 https://www.ester.ee/record=b5434231*est <https://digikogu.taltech.ee/et/Item/f02a02b2-da6e-4341-a69c-eba8d029e433> <https://doi.org/10.23658/taltech.32/2021>

Determination of the corresponding roughness height in a WDS model containing old rough pipes

Annus, Ivar; Vassiljev, Anatoli; Kändler, Nils; Kaur, Katrin Journal of water supply : research and technology - AQUA 2020 / p. 201–209 <https://doi.org/10.2166/aqua.2019.080>

Determination of water distribution network resistance coefficient and hydraulic capacity

Vaabel, Joonas; Koppel, Tiit; Sarv, Laur; Annus, Ivar Procedia engineering 2014 / p. 679-684 : ill <https://doi.org/10.1016/j.proeng.2014.11.494> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Developing a framework for smart stormwater management in Tallinn, Estonia

Suits, Kristjan; Vassiljev, Anatoli; Kaur, Katrin; Kõiv, Kerta; Kändler, Nils; Annus, Ivar Engineering Proceedings 2024 / art. 23 <https://doi.org/10.3390/engproc2024069023> [Journal metrics at Scopus](#) [Article at Scopus](#)

Development of accelerating pipe flow starting from rest

Annus, Ivar; Koppel, Tiit; Sarv, Laur; Ainola, Leo Journal of fluids engineering 2013 / p. 111204-1 - 111204-10 : ill <https://doi.org/10.1115/1.4025256> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Development of accelerating pipe flow starting from rest = Paigalseisust algava kiireneva voolamise areng torus

Annus, Ivar; Koppel, Tiit 2011 http://www.ester.ee/record=b2723494*est

Development of radial velocity component in accelerating start-up pipe flow

Annus, Ivar; Koppel, Tiit European journal of mechanics B. Fluids 2015 / p. 48-54 : ill <https://doi.org/10.1016/j.euromechflu.2015.04.001>

[Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Developments and applications of IoT-based sensors for wastewater and drainage systems : editorial

Sitzenfrei, Robert; **Annus, Ivar**; Langeveld, Jeroen; Rieckermann, Jörg; Rauch, Wolfgang Water science and technology Water science & technology 2024 / p. 3-5 <https://doi.org/10.2166/wst.2024.058> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Different approaches for calibration of an operational water distribution system containing old pipes

Annus, Ivar; Vassiljev, Anatoli Procedia engineering 2015 / p. 526-534 : ill <https://doi.org/10.1016/j.proeng.2015.08.900> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Dynamic processes of air-water flows in urban water systems = Õhu ja vee koosvoolamise dünaamilised protsessid linna veesüsteemides

Kaur, Katrin 2022 <https://doi.org/10.23658/taltech.68/2022> <https://digikogu.taltech.ee/et/Item/0a655a67-74aa-457e-8640-e7b3ab212695> https://www.ester.ee/record=b5527832*est

Eesti linnad ja põllumehed peavad harjuma üha tugevamate vihmasadudega

Piir, Rait novaator.err.ee 2025 <https://novaator.err.ee/1609644656/eesti-linnad-ja-pollumehed-peavad-harjuma-uha-tugevamate-vihmasadudega>

Eesti teadlased muudavad veetorude rekonstrueerimine efektiivsemaks

ehitusuudised.ee 2023 [Eesti teadlased muudavad veetorude rekonstrueerimine efektiivsemaks](#)

Empirical evaluation of NB-IoT and CAT-M coverage for underground water system

Roosipuu, Priit; Annus, Ivar; Kuusik, Alar; Kändler, Nils; Alam, Muhammad Mahtab; Mürsepp, Ivo IEEE Access 2024 / p. 187290-187301 <https://doi.org/10.1109/ACCESS.2024.3478733> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Emptying of large-scale pipeline by pressurized air

Laanearu, Janek; Annus, Ivar; Koppel, Tiit; Bergant, Anton; Vučkovic, Sašo; Hou, Qingzhi; Tijsseling, Arris S.; Anderson, Alexander; Westende, Jos M.C.van't Journal of hydraulic engineering 2012 / p. 1090-1100 : ill https://www.win.tue.nl/~atijssel/pdf_files/Laanearu-et-al_2012.pdf

Evaluation of low power wide area network technologies for smart urban drainage systems

Malik, Hassan; Kändler, Nils; Alam, Muhammad Mahtab; Annus, Ivar; Le Moullec, Yannick; Kuusik, Alar 2018 IEEE : International Conference on Environmental Engineering, March 12-14, 2018 Milan Italy : conference proceedings 2018 / 5 p. : ill <https://doi.org/10.1109/EE1.2018.8385262>

Excel-based tool for automatic calibration of urban drainage system models

Vassiljev, Anatoli; Annus, Ivar; Kändler, Nils; Truu, Murel; Kaur, Katrin; Suits, Kristjan Environmental Sciences Proceedings 2022 / art. 30 <https://doi.org/10.3390/environsciproc2022021030>

Experimental investigation on rapid filling of a large-scale pipeline

Hou, Qingzhi; Tijsseling, Arris S.; **Laanearu, Janek; Annus, Ivar; Koppel, Tiit** Journal of hydraulic engineering 2014 / art. 04014053, p. 1-14 : ill [https://doi.org/10.1061/\(ASCE\)HY.1943-7900.0000914](https://doi.org/10.1061/(ASCE)HY.1943-7900.0000914) [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Experimental investigation on rapid filling of a large-scale pipeline

Hou, Qingzhi; Tijsseling, Arris S.; **Laanearu, Janek; Annus, Ivar; Koppel, Tiit** 2013

Experimental measurements of momentum changes at hydraulic jump in a transparent horizontal pipe

Kaur, Katrin; Annus, Ivar; Laanearu, Janek Papers presented at 13th International Conference on Pressure Surges, Bordeaux, France, 14th-16th November, 2018 ; volume 2 2018 / p. 925-935 : ill

Experimental study of filling and emptying of a large-scale pipeline

Hou, Qingzhi; Tijsseling, Arris S.; **Laanearu, Janek; Annus, Ivar; Koppel, Tiit**; Bergant, Anton; Vučkovič, S.; Gale, Janez; Anderson, A.; Westende, Jos M.C.van't; Pandula, Zoltan; Ruprecht, A. 2012 https://www.researchgate.net/publication/254810149_Experimental_study_of_filling_and_emptying_of_a_large-scale_pipeline

Experts: Faulty construction led to Kuressaare's 2023 water contamination

err.ee 2025 <https://news.err.ee/1609635455/experts-faulty-construction-led-to-kuressaare-s-2023-water-contamination>

Flow dynamics in a pipe containing uneven roughness elements

Kaur, Katrin; Vassiljev, Anatoli; Annus, Ivar; Truu, Murel; Kändler, Nils WDSA CCWI : proceedings book 2022 / 11 p. : ill <https://drive.google.com/file/d/1sTPCrwLPmq-2C0-NX8siSfWp9WLd54A/view>

Flow dynamics in a pipe with a sudden change in diameter

Annus, Ivar; Kaur, Katrin; Vassiljev, Anatoli; Laanearu, Janek; Šanin, Märt 14th International CCWI Conference : 7-9 November 2016 / [8] p. : ill

Geoanalytical method for linking base wastewater flows with a sanitary sewer model

Kändler, Nils; Annus, Ivar; Kaur, Katrin; Koor, Margus Urban water journal 2025 / p. 109-120
<https://doi.org/10.1080/1573062X.2024.2445119>

GIS-integrated pluvial flood risk assessment methodology for urban areas

Truu, Murel; Annus, Ivar; Kändler, Nils WDSA CCWI : proceedings book 2022 / 14 p. : ill
https://drive.google.com/file/d/19mrdk9_LLOy5mfYDT9IGgmlsW5FFw4f/view

Hoone kanalisatsioon [Võrguteavik] = Draining system inside buildings / Eesti Standardimis- ja Akrediteerimiskeskus

2021 https://www.ester.ee/record=b5449156*est

Inseneriteaduskond võimestab koostööd ettevõtetega

Mätlik, Eva-Liina TööstusEST 2025 / lk. 9 https://www.ester.ee/record=b4481084*est

Insights gained from stormwater e-monitoring in Viimsi, Estonia

Suits, Kristjan; Rajarao, Gunaratna K.; Kändler, Nils; Vassiljev, Anatoli; Annus, Ivar CEST Proceedings 2023 / 4 p
<https://doi.org/10.30955/gnc2023.00303>

Integrated decision support system for pluvial flood-resilient spatial planning in urban areas

Truu, Murel; Annus, Ivar; Roosimägi, Janet; Kändler, Nils; Vassiljev, Anatoli; Kaur, Katrin Water 2021 / art. 3340, 19 p. : ill
<https://doi.org/10.3390/w13233340> Journal metrics at Scopus Article at Scopus Journal metrics at WOS Article at WOS

Integrating drone-captured sub-catchment topography with multiphase CFD modelling to enhance urban stormwater management

Kaur, Katrin; Annus, Ivar; Truu, Murel; Kändler, Nils; Paalmäe, Iris The 3rd International Joint Conference on Water Distribution Systems Analysis & Computing and Control for the Water Industry (WDSA/CCWI 2024) 2024 / art. 31
<https://doi.org/10.3390/engproc2024069031> Conference proceedings at Scopus Article at Scopus

Inter-cell interference reduction scheme for uplink transmission in NB-IoT Systems

Mwakwata, Collins Burton; Elgarhy, Osama Mohamed Mostafa; Le Moullec, Yannick; Alam, Muhammad Mahtab; Päränd, Sven; Annus, Ivar IWCMC 2021 Wireless Sensors & IoT: 2021 International Wireless Communications and Mobile Computing (IWCMC), Harbin, China, June 28 - July 2, 2021 / p. 400-405 <https://doi.org/10.1109/IWCMC51323.2021.9498970>

Investigating airflow patterns near supply and exhaust vents of room-based ventilation unit using laser doppler anemometry

Simson, Raimo; Annus, Ivar; Mikola, Alo; Kõiv, Teet-Andrus European scientific journal 2014 / p. 227-236 : ill

Investigation of possible nutrient sources in Estonian rivers

Vassiljev, Anatoli; Margus, Gertu; Annus, Ivar; Stalnacke, Per Procedia engineering 2016 / p. 188-195 : ill
<https://doi.org/10.1016/j.proeng.2016.11.038> Conference Proceedings at Scopus Article at Scopus Article at WOS

Is water quality based stormwater management actually feasible? A SWMM-based study on the trade-offs of various stormwater management approaches

Suits, Kristjan; Vassiljev, Anatoli; Annus, Ivar; Kändler, Nils WDSA CCWI : proceedings book 2022 / 11 p. : ill
<https://drive.google.com/file/d/1sTPCwLPmq-2C0-NX8siSfWp9WLd54A/view>

Ivar Annus: andmepõhine maailm vajab insenere rohkem kui kunagi varem

Annus, Ivar delfi.ee 2025 <https://arileht.delfi.ee/artikkel/120374512/ivar-annus-andmepohine-maailm-vajab-insenere-rohkem-kui-kunagi-varem>

Ivar Annus: vaja on kliimakindlaid ehitisi ja palju insenere

Annus, Ivar err.ee 2023 var.annus.vaja.on.kliimakindlaid.ehitisi.ja.palju.insenere [Vaja on kliimakindlaid ehitisi ja palju insenere](http://vaja.on.kliimakindlaid.ehitisi.ja.palju.insenere)

12 uut positsiooni

Salupere, Andrus; Sergejev, Fjodor; Kallaste, Kadri; Pihel, Hele-Riin; Tärnov, Külle; Anton, Maia-Liisa; Annus, Ivar; Kanger, Tõnis; Kerikmäe, Tanel; Illing, Sven; Uutar, Aivar Mente et Manu 2020 / lk. 54-59 : portr https://www.ester.ee/record=b1242496*est
<https://dea.digar.ee/article/AKmenteetmanu/2020/09/0/21.1>

Kooliõpilased loovad ülikooli kaasabil jätkusuutlikke idufirmasid

Kaur, Katrin; Truu, Murel; Annus, Ivar; Kallau, Kädi Mente et Manu 2020 / lk. 41 <https://dea.digar.ee/cgi-bin/dea?a=is&oid=AKmenteetmanu202011&type=staticpdf>

Kui teadlased Tartu viaduktini jõudsid, oli piirkond juba veeuputuse alla jäänud

Leitmaa, Dannar Õhtuleht 2024 / lk. 4-5 <https://dea.digar.ee/article/oh tuleht/2024/08/10/2.13>

Kuidas ehitusinseneride õppel läheb

Kurnitski, Jarek; Lill, Irene; Annus, Ivar Eesti Ehituskonsultatsiooniettevõtete Liit, EKEL : [aastaraamat] = Estonian Association of Architectural and Consulting Engineering Companies, EAACEC 2019 2019 / lk. 19-24 : ill https://www.ester.ee/record=b1222961*est <https://ekel.ee/et/valjaanded>

Kuidas päästa linnad üleujutustest? Ivar Annuse töögrupil on käsil kümme projekti, mis kõik tegelevad kliimakindlate veesüsteemide loomisega

Annus, Ivar ehitusleht.ee 2024 [Kuidas päästa linnad üleujutustest? Ivar Annuse töögrupil on käsil kümme projekti, mis kõik tegelevad kliimakindlate veesüsteemide loomisega](#)

Kuressaare veereostuse eel ei tehtud läbipesu ega mõõtmisi

err.ee 2025 <https://www.err.ee/1609635407/kuressaare-veereostuse-eel-ei-tehtud-labipesu-ega-mootmisi>

Kõige kõrgema palgaga insenerialadel on ka suurim töökäte puudus

Annus, Ivar; Sergejev, Fjodor; Voll, Hendrik postimees.ee 2024 [Kõige kõrgema palgaga insenerialadel on ka suurim töökäte puudus](#)

Magalate torustik vajab vahetust = Трубопроводы спальных районов требуют замены

Trell, Kristel Elamu 2021 / lk. 7-9 : fot; c. 29-31 : фот https://www.ester.ee/record=b1072137*est

Mida teha, kui tänavad muutuvad mägijõgedeks? Probleemile otsib lahendust NOAH

Vill, Ants Director. Inseneeria 2020 / lk. 54-57 : fot http://www.ester.ee/record=b2336521*est <https://director.ee/2020/05/28/mida-teha-kui-tanavad-muutuvad-magijogedeks-probleemile-otsib-lahendust-noah/>

Modelling of nitrogen concentrations in water from drained peat soils

Vassiljev, Anatoli; Annus, Ivar; Kändler, Nils; Kaur, Katrin Journal of water supply : research and technology - AQUA 2019 <https://doi.org/10.2166/aqua.2019.104>

Modelling of nitrogen leaching from watersheds with large drained peat areas

Vassiljev, Anatoli; Kaur, Katrin; Annus, Ivar Advances in engineering software 2018 / p. 94-100 : ill <https://doi.org/10.1016/j.advengsoft.2018.03.007> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Monitoring and control of smart urban drainage systems using NB-IoT cellular sensor networks

Roosipuu, Priit; Annus, Ivar; Kuusik, Alar; Kändler, Nils; Alam, Muhammad Mahtab Water science & technology Water science and technology 2023 / p. 339-354 <https://doi.org/10.2166/wst.2023.222> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Muudatuste juhtimine veesektoris pikaajalise strateegiaga

Annus, Ivar Sirp 2023 / lk. 8-9 <https://dea.digar.ee/article/sirp/2023/07/21/4.2> <https://www.sirp.ee/s1-artiklid/c21-teadus/muudatuste-juhtimine-veesektoris-pikaajalise-strateegiaga/>

Nordic urban planning : holistic approach for extreme weather

Kändler, Nils; Annus, Ivar; Keinänen-Toivola, Minna; Rubulis, Janis Nature-Based Solutions - from Innovation to Common-Use : ebook of abstracts 2017 / p. 112 https://nbs2017.eu/wp-content/uploads/2017/12/NBS2017_AbstractBook_211217.pdf

Numerical and experimental investigation on flow dynamics in a pipe with an abrupt change in diameter

Annus, Ivar; Kartušinski, Aleksander; Vassiljev, Anatoli; Kaur, Katrin Journal of fluids engineering 2019 / art. 101301, 9 p. : ill <https://doi.org/10.1115/1.4043233> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Numerical investigation of the impact of irregular pipe wall build-up on velocity in the water distribution system

Kaur, Katrin; Vassiljev, Anatoli; Annus, Ivar; Kändler, Nils; Roosimägi, Janet Journal of Water Supply: Research and Technology - AQUA 2020 / p. 647-655 <https://doi.org/10.2166/aqua.2020.035>

Numerical study of Tallinn storm-water system flooding conditions using CFD simulations of multi-phase flow in a large-scale inverted siphon

Kaur, Katrin; Laanearu, Janek; Annus, Ivar IOP conference series : materials science and engineering 2017 / art. 012128, 8 p. : ill <https://doi.org/10.1088/1757-899X/251/1/012128> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Numerical study of Tallinn storm-water system flooding conditions using CFD simulations of multi-phase flow in a large-scale inverted siphon : [conference paper]

Kaur, Katrin; Laanearu, Janek; Annus, Ivar 3rd International Conference "Innovative Materials, Structures and Technologies" : Riga, Latvia, 27-29 September 2017 : [abstracts] 2017 / p. 78

On determination of flow routes in a stormwater network using the least squares method

Laanearu, Janek; Annus, Ivar; Vassiljev, Anatoli; Koppel, Tiit Integrating Water Systems : proceedings of the Tenth International Conference on Computing and Control in the Water Industry 2009 : CCWI2009 : Sheffield, UK, 1-3 September 2009 2009 / p. 731-734

On long-wave dependent flow transitions in partially filled large-scale pipeline [Electronic resource]

Laanearu, Janek; Annus, Ivar; Koppel, Tiit Water Engineering for a Sustainable Environment : 33rd IAHR Congress, Vancouver, British Columbia, Canada, 9-14 August, 2009 / p. 6553-6560 <https://www.iahr.org/library/infor?pid=24429>

Overview of the (Smart) Stormwater Management around the Baltic Sea

Suits, Kristjan; Annus, Ivar; Kändler, Nils; Karlsson, Tobias; Van Maris, Antionius; Kaseva, Antti; Kotoviča, Nika; Kuttuva Rajarao, Gunaratna Water 2023 / art. 1623 <https://doi.org/10.3390/w15081623> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Parametric modelling study for filling of horizontal pipe containing water

Laanearu, Janek; Annus, Ivar; Sergejeva, Monika; Koppel, Tiit; Puust, Raido WDSA 2012 : 14th Water Distribution Systems Analysis Conference : 24-27 September 2012 in Adelaide, South Australia 2012 / p. 678-693 https://www.researchgate.net/publication/286954531_Parametric_modelling_study_for_filling_of_horizontal_pipe_containing_water

Peak flow reduction from small catchments using smart inlets

Kändler, Nils; Annus, Ivar; Vassiljev, Anatoli; Puust, Raido Urban water journal 2020 / p. 577-586 <https://doi.org/10.1080/1573062X.2019.1611888> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Pipeline rehabilitation combined strategy for urban water systems

Annus, Ivar; Kändler, Nils; Vaksman, Marti; **Kaur, Katrin; Truu, Murel;** Koor, Margus; **Vassiljev, Anatoli;** Kütt, Urmas Urban water journal 2024 / p. 155 - 167 <https://doi.org/10.1080/1573062X.2023.2273535> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Pipes not flushed nor measurements taken before Kuressaare water pollution

news.err.ee 2025 <https://news.err.ee/1609636163/pipes-not-flushed-nor-measurements-taken-before-kuressaare-water-pollution>

Product Development Gala 2005, ehk, Tudengite tootearendusprojekt Soome moodi : projektist üldiselt. TTÜ tudengid aitasid leiutada jalgratast. TTÜ tudengid on projektist vaimustuses

Otto, Tauno; Laidre, Andri; **Maripuu, Raul;** Sternfeld, Rainer; Sternfeld, Ervin; Toon, Triin; Matsi, Birthe; Annus, Ivar Mente et Manu 2005 / lk. 4 : ill https://www.ester.ee/record=b1242496*est

Protecting the Baltic Sea from untreated wastewater spillages : handbook of the NOAH CONCEPT

Annus, Ivar; Truu, Murel; Kändler, Nils; Rissanen, Hanna; Vorne, Virpi; Waara, Sylvia; Ramm, Klara; Ulanczyk, Rafał; Kolecka, Katarzyna; Dakša, Gints 2021 https://www.ester.ee/record=b5473512*est https://sub.samk.fi/wp-content/uploads/2021/12/NOAH_Handbook_30112021.pdf

Pumps energy consumption based on new EU legislation

Annus, Ivar; Uibo, D.; Koppel, Tiit Procedia engineering 2014 / p. 517-524 : ill <https://doi.org/10.1016/j.proeng.2014.11.473> [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Real time controlled sustainable urban drainage systems in dense urban areas

Kändler, Nils; Annus, Ivar; Vassiljev, Anatoli; Puust, Raido Journal of water supply : research and technology - AQUA 2020 / p. 238-247 : ill <https://doi.org/10.2166/aqua.2019.083>

Reostusohi: Kui su kodune vesi tuleb plasttorudest, kasuta joogiks ja toiduvalmistamiseks ainult külma vett

Soopan, Ivar rohe.geenius.ee 2024 [Reostusohi: Kui su kodune vesi tuleb plasttorudest, kasuta joogiks ja toiduvalmistamiseks ainult külma vett](#)

Rängad vihmad uhuvad miljardeid eurosid minema

Imeline Teadus 2022 / lk. 22-22 : fot https://www.ester.ee/record=b2747925*est

Sajab üha äkilisemalt, tarvis on tarku lahendusi

Vill, Ants Director. Inseneeria 2022 / lk. 74-79 : fot; 4, lk. 70-75 http://www.ester.ee/record=b2336521*est <https://director.ee/2022/02/18/sajab-uha-akilisemalt-tarvis-on-tarku-lahendusi/>

„Sellised vead pole aktsepteeritavad.“ Kuressaare 2023. aasta kevade veereostuse põhjustas ehitaja hooletus

Kolli, Anete delfi.ee 2025 <https://roheportaal.delfi.ee/artikkel/120364063/sellised-vead-pole-aktsepteeritavad-kuressaare-2023-aasta-kevade-veereostuse-pohjustas-ehitaja-hooletus> <https://www.postimees.ee/8211929/kuressaare-joogivee-reostuse-pahalane-on-selgunud>

Semi-empirical method for estimation of energy losses in a large-scale pipeline

Laanearu, Janek; Annus, Ivar; Sergejeva, Monika; Koppel, Tiit Procedia engineering 2014 / p. 969-977 : ill <https://doi.org/10.1016/j.proeng.2014.02.108> [Conference Proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Smart nature-based solutions for stormwater management in urban areas—an analysis of pilot cases

Kõiv, Kerta; Annus, Ivar; Kändler, Nils; Truu, Murel; Kaur, Katrin; Suits, Kristjan Engineering Proceedings 2024 / art. 18

<https://doi.org/10.3390/engproc2024069018> Journal metrics at Scopus Article at Scopus

Some aspects of fluid elasticity related to filling and emptying of large-scale pipeline

Laanearu, Janek; **Bergant, Anton**; Annus, Ivar; Koppel, Tiit; **Westende, Jos M.C.van't** Proceedings of the 3rd IAHR International Meeting of the Workgroup on Cavitation and Dynamic Problems in Hydraulic Machinery and Systems : Brno, Czech Republic, October 14-16, 2009. Part II 2009 / p. 465-474 : ill

Source apportionment of nitrogen in Estonian rivers

Kaur, Katrin; **Vassiljev, Anatoli**; **Annus, Ivar**; Stalnacke, Per Journal of water supply : research and technology - AQUA 2017 / p. 469-480 <https://doi.org/10.2166/aqua.2017.036>

Tallinna üleujutustele lihtsaid lahendusi pole [Võrguväljaanne]

Erve, Kira err.ee 2021 / fot [Tallinna üleujutustele lihtsaid lahendusi pole](#)

TalTech viib Eesti veesektori digiajastusse

Annus, Ivar Trialoog 2025 <https://trialoog.taltech.ee/taltech-viib-eesti-veesektori-digiajastusse/>

TalTechi ekspertuurung tuvastas Kuressaare veereostuse põhjused

ehitusleht.ee 2025 <https://ehitusleht.ee/taltech-eksperuurung-tuvastas-kuressaare-veereostuse-pohjused/>

TalTechi professorid kinnitavad: plasttorudest eraldub joogivette kahjulikke kemikaale

Niidu, Allan; **Preis, Sergei**; **Annus, Ivar** Ehitaja 2024 / lk. 21-23 : fot https://www.ester.ee/record=b1072123*est

Targad sademeveesüsteemid tagavad puhtama Läänemere

Suits, Kristjan; **Annus, Ivar**; **Kändler, Nils** Viimsi Teataja 2023 / lk. 10 : ill https://www.viimsivald.ee/sites/default/files/inline-files/viimsi-teataja-20-01-2023_1.pdf

Tartu kavandab uut linnaosa üleujutusohus alale. Kevadise sulaga võib piirkonnas veepiir tõusta üle kahe meetri

Kontro, Kristin delfi.ee 2024 [Tartu kavandab uut linnaosa üleujutusohus alale. Kevadise sulaga võib piirkonnas veepiir tõusta üle kahe meetri](#)

Transient flow during filling of horizontal pipe containing water

Laanearu, Janek; **Annus, Ivar**; **Raidmaa, Meelis**; **Koppel, Tiit** Urban Water Management: Challenges and Opportunities : proceedings of the 11th International Conference on Computing and Control for the Water Industry (CCWI 2011), University of Exeter, 5-7 September 2011 2011 / p. 913-918 : ill

Transition from classroom teaching to E-learning in a blink of an eye

Annus, Ivar Educating Engineers for Future Industrial Revolutions : Proceedings of the 23rd International Conference on Interactive Collaborative Learning (ICL2020). Volume 2 2021 / p. 797-807 https://doi.org/10.1007/978-3-030-68201-9_79 [Article collection metrics at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Transition to turbulence in accelerating flow

Annus, Ivar; **Koppel, Tiit**; Vardy, Alan Proceedings of the HYDRALAB III Joint Transnational Access User Meeting : Hannover, February 2010 2010 / p. 9-12 : ill <https://asmedigitalcollection.asme.org/fluidsengineering/article/133/7/071202/456268/Transition-to-Turbulence-in-Accelerating-Pipe-Flow>

Transition to turbulence in accelerating pipe flow

Annus, Ivar; **Koppel, Tiit** Journal of fluids engineering 2011 / [7] p. : ill

Unsteady skin friction experimentation in a large diameter pipe

Vardy, Alan; **Bergant, Anton**; **He, Shuisheng**; **Ariyaratne, Chanchala**; Koppel, Tiit; Annus, Ivar; **Tijsseling, Arris S.**; **Hou, Qingzhi** Proceedings of the 3rd IAHR International Meeting of the Workgroup on Cavitation and Dynamic Problems in Hydraulic Machinery and Systems : Brno, Czech Republic, October 14-16, 2009. Part II 2009 / p. 593-602 : ill https://www.researchgate.net/publication/228984476_Unsteady_skin_friction_experimentation_in_a_large_diameter_pipe

Updated curriculum for engineering pedagogical continuing in-service education

Rüütman, Tiia; **Annus, Ivar**; **Kübarsepp, Jakob**; Läänemets, Urve; Umborg, Jaak Mobility for Smart Cities and Regional Development - Challenges for Higher Education : proceedings of the 24th International Conference on Interactive Collaborative Learning (ICL2021), Volume 2 2022 / p. 556-567 https://doi.org/10.1007/978-3-030-93907-6_59 [Conference proceedings at Scopus](#) [Article at Scopus](#) [Article at WOS](#)

Use of nonlinear regression for estimating emission of nitrogen to Estonian rivers

Vassiljev, Anatoli; **Annus, Ivar**; **Kaur, Katrin**; **Kändler, Nils** Ecology & safety 2017 / p. 33-40 : ill <https://www.scientific-publications.net/en/article/1001351/>

Use of pressure dynamics for calibration of water distribution system and leakage detection

Koppel, Tiit; **Vassiljev, Anatoli**; Lukjanov, D.; **Annus, Ivar** Proceedings of WDSA 2008 : Water Distribution Systems Analysis : 17-

20 August 2008, South Africa 2008 / p. 704-715 <https://ascelibrary.org/doi/10.1061/41024%28340%2959>

Using CFD to simulate multi-phase flow in a large-scale inverted siphon : Tallinn storm-water system case study
Kaur, Katrin; Laanearu, Janek; Annus, Ivar 14th International CCWI Conference : 7-9 November 2016 2016 / [8] p. : ill

Using transient flow equations for modelling of filling and emptying of the large-scale pipeline
Koppel, Tiit; Laanearu, Janek; Annus, Ivar; Raidmaa, Meelis Water Distribution System Analysis 2010 : WDSA2010 : Tucson, AZ, USA, Sept. 12-15, 2010 2010 / [9] p. : ill <https://ascelibrary.org/doi/10.1061/41203%28425%2912>

Vaja on kliimakindlaid ehitisi ja palju insenere
Annus, Ivar Sirp 2023 <https://sirp.ee/s1-artiklid/arhitektuur/vaja-on-kliimakindlaid-ehitisi-ja-palju-insenere/>

Water-column mass losses during the emptying of a large-scale pipeline by pressurized air
Laanearu, Janek; Hou, Qingzhi; Annus, Ivar; Tijsseling, Arris S. Proceedings of the Estonian Academy of Sciences 2015 / p. 8-16 : ill https://artiklid.elnet.ee/record=b2717477*est <https://doi.org/10.3176/proc.2015.1.02> [Journal metrics at Scopus](#) [Article at Scopus](#) [Article at WOS](#) [Article at WOS](#)

Veesektori digitaliseerimine säästab rekonstrueerimistöodele kuluvat aega märkimisväärselt
2025 <https://ehitusleht.ee/veesektori-digitaliseerimine-saastab-rekonstrueerimistoodete-kuluvat-aega-markimisvaarselt/>

Väliskanaliseerimisvõrk [Võrguteavik] = Sewer system inside buildings
2021 https://www.ester.ee/record=b5449238*est

Эксперты: причина загрязнения воды в Курессааре – ошибки при реконструкции канализационных труб
rus.err.ee 2025 <https://rus.err.ee/1609635488/jeksperty-prichina-zagrijaznenija-vody-v-kuressaare-oshibki-pri-rekonstrukcii-kanalizacionnyh-trub>