

#### **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](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](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](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://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](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](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](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](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/19mrk9\\_LLOy5mfYDT9IGgmlsW5FFw4f/view](https://drive.google.com/file/d/19mrk9_LLOy5mfYDT9IGgmlsW5FFw4f/view)

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

2021 [https://www.ester.ee/record=b5449156\\*est](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](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 [ivar.annus.ee/vaja-on-kliimakindlaid-ehitisi-ja-palju-insenere](http://ivar.annus.ee/vaja-on-kliimakindlaid-ehitisi-ja-palju-insenere) [vaja.annus.ee/vaja-on-kliimakindlaid-ehitisi-ja-palju-insenere](http://vaja.annus.ee/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://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://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](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](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](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](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](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://www.ester.ee/record=b5473512*est) [https://sub.samk.fi/wp-content/uploads/2021/12/NOAH\\_Handbook\\_30112021.pdf](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](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](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-ekspertuurung-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](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](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](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](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](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://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](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>